

INTELLECTUAL PROPERTY, TRADITIONAL KNOWLEDGE AND
BIODIVERSITY IN THE GLOBAL ECONOMY: THE POTENTIAL OF
GEOGRAPHICAL INDICATIONS FOR PROTECTING TRADITIONAL
KNOWLEDGE-BASED AGRICULTURAL PRODUCTS

By

Teshager Worku Dagne

Submitted in partial fulfilment of the requirements
for the degree of Doctor in the Science of Law

at

Dalhousie University
Halifax, Nova Scotia
March 2012

© Copyright by Teshager Worku Dagne, 2012

DALHOUSIE UNIVERSITY

Schulich School of Law

The undersigned hereby certify that they have read and recommend to the Faculty of Graduate Studies for acceptance a thesis entitled “INTELLECTUAL PROPERTY, TRADITIONAL KNOWLEDGE AND BIODIVERSITY IN THE GLOBAL ECONOMY: THE POTENTIAL OF GEOGRAPHICAL INDICATIONS FOR PROTECTING TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS” by Teshager Worku Dagne in partial fulfilment of the requirements for the degree of Doctor in the Science of Law.

Dated: March 1, 2012

External examiner:

Research Supervisors:

Examining Committee

Departmental Representative: _____

DALHOUSIE UNIVERSITY

DATE: March 1, 2012

AUTHOR: Teshager Worku Dagne

TITLE: INTELLECTUAL PROPERTY, TRADITIONAL KNOWLEDGE AND
BIODIVERSITY IN THE GLOBAL ECONOMY: THE POTENTIAL OF
GEOGRAPHICAL INDICATIONS FOR PROTECTING TRADITIONAL
KNOWLEDGE-BASED AGRICULTURAL PRODUCTS

DEPARTMENT OR SCHOOL: Schulich School of Law

DEGREE: J.S.D. CONVOCATION: May YEAR: 2012

Permission is herewith granted to Dalhousie University to circulate and to have copied for non-commercial purposes, at its discretion, the above title upon the request of individuals or institutions. I understand that my thesis will be electronically available to the public.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

The author attests that permission has been obtained for the use of any copyrighted material appearing in the thesis (other than the brief excerpts requiring only proper acknowledgement in scholarly writing), and that all such use is clearly acknowledged.

Signature of Author

DEDICATION PAGE

To the memory of my dearest sister:
Yamrote Worku Dagne who passed away in July 2009

TABLE OF CONTENTS

| | |
|-----------------------------------------------------------------------------------------------------------------------|------|
| ABSTRACT | xiii |
| LIST OF ABBREVIATIONS USED | xiv |
| ACKNOWLEDGEMENTS | xvii |
| CHAPTER 1 GENERAL INTRODUCTION | 1 |
| 1.1 THESIS INTRODUCTION..... | 1 |
| 1.2 GENERAL BACKGROUND: RELATIONSHIP BETWEEN INTELLECTUAL PROPERTY, TRADITIONAL KNOWLEDGE, AND BIODIVERSITY | 5 |
| 1.2.1 Intellectual Property | 5 |
| 1.2.1.1 Justifications for the Protection of Intellectual Property | 7 |
| 1.2.1.2 Historical Account | 14 |
| 1.2.2 The Global Knowledge Economy | 17 |
| 1.2.3 The Increasing Attention to Traditional Knowledge and Biological Resources | 20 |
| 1.2.4 The Role of Intellectual Property in the Protection of Traditional Knowledge..... | 23 |
| 1.3 SCOPE OF THE STUDY..... | 26 |
| 1.4 RESEARCH METHODOLOGY | 27 |
| 1.5 THEORETICAL FRAMEWORK..... | 29 |
| 1.6 THE INSTRUMENTALITY OF GEOGRAPHICAL INDICATIONS IN PROTECTING TRADITIONAL KNOWLEDGE: LITERATURE REVIEW | 37 |
| 1.7 CONTRIBUTIONS OF THE THESIS..... | 47 |
| 1.8 RESEARCH QUESTIONS | 49 |
| 1.9 STRUCTURE OF THE THESIS | 51 |

| | |
|------------------------------------------------------------------------------------------------------------------------|-----|
| PART ONE: TRADITIONAL KNOWLEDGE, TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS AND THE SEARCH FOR PROTECTION | 57 |
| CHAPTER 2 TRADITIONAL KNOWLEDGE, BIODIVERSITY, AND INTELLECTUAL PROPERTY: DEFINITION AND CONCEPTUAL BOUNDARIES | 57 |
| 2.1 INTRODUCTION | 57 |
| 2.2 DEFINING TRADITIONAL KNOWLEDGE | 58 |
| 2.2.1 Choice of Terminology | 59 |
| 2.2.2 Identification of The Knowledge Holders: Indigenous Peoples and Local Communities..... | 64 |
| 2.2.3 Subject Matter of Traditional Knowledge..... | 71 |
| 2.2.4 Essential Characteristics of Traditional Knowledge..... | 75 |
| 2.2.5 Categories of Traditional Knowledge | 81 |
| 2.3 GENETIC RESOURCES, BIODIVERSITY AND TRADITIONAL KNOWLEDGE..... | 87 |
| 2.4 TRADITIONAL AGRICULTURAL KNOWLEDGE AND AGRO-BIODIVERSITY | 90 |
| 2.5 PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE, CULTIVARS AND GENETICALLY MODIFIED ORGANISMS | 97 |
| 2.6 TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS | 99 |
| 2.6.1 Primary Products: Landraces, Wild Species, and Farmers' Varieties | 101 |
| 2.6.2 Handicrafts | 106 |
| 2.7 GEOGRAPHICAL INDICATIONS DEFINED | 108 |
| 2.8 THE LINK BETWEEN GEOGRAPHICAL INDICATIONS AND TRADITIONAL KNOWLEDGE | 128 |
| 2.9 WHAT IS "PROTECTION?" | 133 |
| 2.10 THE GLOBAL ECONOMY | 136 |

| | |
|------------------------------------------------------------------------------------|-----|
| 2.11 CONCLUSION..... | 140 |
| CHAPTER 3 PROTECTING TRADITIONAL KNOWLEDGE: IMPERATIVES AND CHALLENGES | 142 |
| 3.1 INTRODUCTION | 142 |
| 3.2 JUSTIFYING THE PROTECTION OF TRADITIONAL KNOWLEDGE..... | 144 |
| 3.2.1 The Value and Importance of Traditional Knowledge ... | 145 |
| 3.2.1.1 Cultural Significance..... | 145 |
| 3.2.1.2 Contribution to Biological Diversity and Ecological Integrity..... | 147 |
| 3.2.1.3 Contribution to Scientific Discovery and Biotechnology Development..... | 149 |
| 3.2.1.4 Improving and Preserving Socio-Economic Conditions | 151 |
| 3.2.2 Threats and Challenges to Traditional Knowledge..... | 156 |
| 3.2.2.1 Biopiracy | 157 |
| 3.2.2.2 Intellectual Property Challenges to Traditional Knowledge | 166 |
| 3.3 TECHNOLOGY-DRIVEN TRANSFORMATION IN AGRICULTURE..... | 170 |
| 3.3.1 Economic Impacts of the Transformation of Agricultural Production..... | 174 |
| 3.3.2 Impacts on Biological Diversity | 177 |
| 3.3.2.1 Genetic Uniformity | 178 |
| 3.3.2.2 Unintended Consequences of Genetically Modified Organisms..... | 181 |
| 3.3.3 Challenges to Food Security and the Need for Food Sovereignty..... | 183 |
| 3.3.4 The Threat of Cultural Homogenization..... | 191 |

| | |
|-----------------------------------------------------------------------------------------------------|---------|
| 3.4 TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS IN GLOBAL MARKETS | 194 |
| 3.4.1 The Consolidation of Agricultural Markets | 195 |
| 3.4.2 Diminishing Income in International Market | 196 |
| 3.5 RECOGNIZING THE VALUE OF TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS | 200 |
| 3.6 DIFFERENTIATION STRATEGIES IN TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS | 205 |
| 3.6.1 Quality Schemes | 208 |
| 3.6.2 Fair Trade Initiatives | 209 |
| 3.6.3 Green Labeling and Eco-Certification Schemes | 212 |
| 3.7 CHALLENGES AND IMPACTS OF DIFFERENTIATION SCHEMES | 215 |
| 3.8 CONCLUSION | 221 |
| CHAPTER 4 TRADITIONAL KNOWLEDGE IN INTERNATIONAL LEGAL REGIMES | 224 |
| 4.1 INTRODUCTION | 224 |
| 4.2 LEGAL NORMS IN TRADITIONAL KNOWLEDGE AND BIODIVERSITY..... | 226 |
| 4.3 TRADITIONAL KNOWLEDGE IN INTERNATIONAL LEGAL FRAMEWORKS | 234 |
| 4.3.1 The International Trade Regime | 234 |
| 4.3.2 Traditional Knowledge in the World Intellectual Property Organization | 245 |
| 4.3.3 The Protection of Traditional Knowledge under the Convention on Biological Diversity | 250 |
| 4.3.4 Traditional Knowledge in the Food and Agricultural Organization..... | 256 |
| 4.4 TRADITIONAL KNOWLEDGE IN OTHER REGIMES OF INTERNATIONAL LAW | 267 |

| | |
|--------------------------------------------------------------------------------------------------------------------------------|-----|
| 4.5 THE PROTECTION OF TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS..... | 273 |
| 4.6 APPROACHES AND MODALITIES FOR PROTECTING TRADITIONAL KNOWLEDGE..... | 277 |
| 4.6.1 Access and Benefit Sharing and Disclosure of Origin.... | 278 |
| 4.6.2 Registers and Traditional Knowledge Digital Library Models..... | 287 |
| 4.6.3 Sui Generis Modalities of Traditional Knowledge Protection | 290 |
| 4.6.4 Traditional Knowledge and the Public Domain..... | 295 |
| 4.6.5 Protection Under Current Intellectual Property Rights .. | 300 |
| 4.7 NEED FOR INTELLECTUAL PROPERTY-BASED PROTECTION | 305 |
| 4.8 GEOGRAPHICAL INDICATIONS AS MODALITIES OF PROTECTION..... | 310 |
| 4.9 CONCLUSION | 315 |
| | |
| PART TWO: THE APPLICABILITY OF GEOGRAPHICAL INDICATIONS FOR PROTECTING TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS | 319 |
| | |
| CHAPTER 5 GEOGRAPHICAL INDICATIONS AND THEIR LINK TO TRADITIONAL KNOWLEDGE..... | 319 |
| 5.1 INTRODUCTION | 319 |
| 5.2 ORIGINS OF GEOGRAPHICAL INDICATIONS | 321 |
| 5.3 HISTORICAL DEVELOPMENT OF THE INTERNATIONAL PROTECTION OF GEOGRAPHICAL INDICATIONS | 323 |
| 5.4 GEOGRAPHICAL INDICATIONS IN THE WORLD TRADE ORGANIZATION | 329 |
| 5.4.1 Scope and Nature of Protection | 330 |
| 5.4.2 Ongoing Negotiation over Geographical Indications | 334 |
| 5.5 GEOGRAPHICAL INDICATIONS IN NATIONAL AND REGIONAL JURISDICTIONS. | 337 |

| | |
|----------------------------------------------------------------------------------------------------------------------------|-----|
| 5.5.1 The United States' Approach to Geographical Indications | 338 |
| 5.5.2 European Union's Approach to Geographical Indications | 342 |
| 5.5.3 The Transatlantic Difference in Geographical Indications Protection | 349 |
| 5.6 THE RELATIONSHIP BETWEEN GEOGRAPHICAL INDICATIONS AND TRADEMARKS..... | 361 |
| 5.7 GENERIC GEOGRAPHICAL INDICATIONS | 366 |
| 5.8 GEOGRAPHICAL INDICATIONS AND TRADITIONAL KNOWLEDGE | 371 |
| 5.9 GEOGRAPHICAL INDICATIONS AS STRATEGIES OF DIFFERENTIATION FOR TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS..... | 377 |
| 5.10 JUSTIFICATIONS FOR THE USE OF GEOGRAPHICAL INDICATIONS | 383 |
| 5.11 CONCLUSION..... | 390 |
| | |
| CHAPTER 6 THE RELEVANCE OF GEOGRAPHICAL INDICATIONS FOR PROTECTING TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS | 394 |
| | |
| 6.1 INTRODUCTION | 394 |
| 6.2 GEOGRAPHICAL INDICATIONS IN DEVELOPING COUNTRIES | 396 |
| 6.3 THE ECONOMIC POTENTIAL OF GEOGRAPHICAL INDICATIONS | 402 |
| 6.4 CHALLENGES AND OPPORTUNITIES FOR DEVELOPING COUNTRIES IN THE IMPLEMENTATION OF GEOGRAPHICAL INDICATIONS | 407 |
| 6.4.1 Introducing Geographical Indications | 409 |
| 6.4.2 Operational Use of Geographical Indications..... | 422 |
| 6.4.2.1 Marketing Activities | 422 |
| 6.4.2.2 Enforcement and Defence of Rights | 439 |
| 6.5 GEOGRAPHICAL INDICATIONS AND BIODIVERSITY | 450 |

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 6.6 GEOGRAPHICAL INDICATIONS IN THE CONTEXT OF FOOD SECURITY | 457 |
| 6.7 GEOGRAPHICAL INDICATIONS AND BIOPIRACY | 461 |
| 6.8 GEOGRAPHICAL INDICATIONS AND CULTURAL HOMOGENIZATION | 467 |
| 6.9 LIMITATIONS AND CONSIDERATIONS IN THE USE OF GEOGRAPHICAL INDICATIONS..... | 469 |
| 6.10 CONCLUSION..... | 476 |
| CHAPTER 7 CONCLUSION: MAPPING FUTURE DIRECTIONS IN THE USE OF GEOGRAPHICAL INDICATIONS TO PROTECT TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS | 480 |
| 7.1 INTRODUCTION | 480 |
| 7.2 SUMMARY | 480 |
| 7.3 DIRECTIONS FOR FUTURE RESEARCH AND ACTION | 485 |
| 7.3.1 Geographical Indications And Traditional Knowledge- Based Agricultural Products: Responses At The International Level | 486 |
| 7.3.1.1 Towards Conceptual and Analytical Clarity on Geographical Indications | 487 |
| 7.3.1.2 Towards Better Protection of Proprietary Interests in Geographical Indications..... | 495 |
| 7.3.2 Geographical Indications And Traditional Knowledge- Based Agricultural Products: Responses At The National Level..... | 502 |
| 7.3.2.1 Geographical Indications as Modality for Protecting Traditional Knowledge-Based Agricultural Products | 502 |
| 7.3.2.2 The Choice of A Method for Protecting Geographical Indications | 511 |
| 7.4 EPILOGUE..... | 522 |

BIBLIOGRAPHY.....529

ABSTRACT

The relationship between international regimes regulating intellectual property, traditional knowledge and biodiversity has received much attention in recent times. Of the many complex and controversial issues in contemporary international legal discourse on this matter, the protection of traditional knowledge (TK) stands out as a significant challenge. Choices abound in the search for modalities to regulate rights to use and control TK systems and their underlying biodiversity.

In recent times, the protection of geographical indications (GIs) has emerged as an option for protecting TK. Despite the considerable enthusiasm over it, there is appreciable research dearth on how far and in what context GIs can be used as a protection model. Indeed, not only is the concept of GIs itself widely misunderstood. As well, analyses as to their applicability for protecting TK often reflect underlying cultural differences in the nature, scope and the jurisprudence regarding GIs across jurisdictions.

This thesis examines the relationship between GIs and TK, focusing on the responsiveness of GIs to the needs and desires of indigenous peoples and local communities (ILCs). The thesis posits that the search for a model to protect TK should involve identifying different modalities, including those based on intellectual property, to fit to the nature and uses of TK in particular contexts. The analysis conceptualizes GIs as a form of IP that are structurally and functionally suitable to protect aspects of TK in traditional knowledge-based agricultural products (TKBAPs).

Substantively, the thesis draws attention to the conceptual underpinnings of GIs as encompassing cultural and economic objectives in the protection of TK. As such, it is argued that stronger protection of GIs should be achieved by integrating the negotiations and discussion concerning GIs and TK at the international level. Further, the case is made for the determination of immediate challenges and long-term opportunities in choosing a legal means for protecting GIs at the national level. In this connection, the thesis suggests that the potential of GIs to meet national and local imperatives to protect TK be assessed, *inter alia*, based on their instrumentality for economic, biodiversity, cultural and food security objectives in protecting TKBAPs.

LIST OF ABBREVIATIONS USED

| | |
|--------|-----------------------------------------------------------------------|
| ABS | Access and Benefit Sharing |
| ACP | African, Caribbean and Pacific Group of States |
| AIPPI | International Association for the Protection of Intellectual Property |
| AO | Appellations of Origin |
| AoA | Agreement on Agriculture |
| ATOs | Alternative Trade Organizations |
| CBD | Convention on Biological Diversity |
| CGRFA | Commission on Genetic Resources for Food and Agriculture |
| CHM | Common Heritage of Mankind |
| COP | Conference of Parties |
| DO | Disclosure of Origin |
| DSB | Dispute Settlement Body |
| EC | European Commission |
| EIPO | Ethiopian Intellectual Property Office |
| FAO | Food and Agricultural Organization of the United Nations |
| FFM | Fact-finding Missions |
| FITFIR | First in Time, First in Right |
| FLO | Fairtrade Labelling Organization International |
| GATT | General Agreement on Trade and Tariffs |
| GIs | Geographical Indications |
| GKE | Global Knowledge Economy |
| GMOs | Genetically Modified Organisms |

| | |
|---------|----------------------------------------------------------------------------------------------------------------|
| GRs | Genetic Resources |
| HYVs | High-Yielding Varieties |
| IBPIP | International Bureaux for the Protection of Intellectual Property |
| ICT | Information and Communication Technology |
| IGC | Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore |
| ILCs | Indigenous Peoples and Local Communities |
| ILO | International Labour Organization |
| INAO | <i>Institut National des Appellations d'Origine</i> |
| IP | Intellectual Property |
| IPCB | Indigenous Peoples Council on Biocolonialism |
| IPRs | Intellectual Property Rights |
| ITPGRFA | International Treaty on Plant Genetic Resources for Food and Agriculture |
| PBRs | Plant Breeder's Rights |
| PDO | Protected Designation of Origin |
| PGI | Protected Geographical Indication |
| PGRFA | Plant Genetic Resources for Food and Agriculture |
| PIC | Prior Informed Consent |
| PPA | Plant Patent Act |
| SCT | Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications |
| TCEs | Traditional Cultural Expressions |
| TK | Traditional Knowledge |
| TKBAPs | Traditional Knowledge-Based Agricultural Products |

| | |
|--------|-------------------------------------------------------------------|
| TKDL | Traditional Knowledge Digital Library |
| TM | Traditional Medicine |
| TNCs | Transnational Corporations |
| TRIPS | Trade-Related Aspects of Intellectual Property |
| TSG | Traditional Specialty Guaranteed |
| UNCCD | United Nations Convention to Combat Desertification |
| UNCHR | United Nations Commission on Human Rights |
| UNCTAD | United Nations Conference on Trade and Development |
| UNDP | United Nations Development Program |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UPOV | International Union for the Protection of New Varieties of Plants |
| USPTO | United States Patent and Trademarks Office |
| USTR | United States Trade Representative |
| WG-AB | Working Group on Access and Benefit-Sharing |
| WHO | World Health Organization |
| WTO | World Trade Organization |
| WIPO | World Intellectual Property Organization |

ACKNOWLEDGEMENTS

This dissertation owes its conception and ultimate existence to the help, support, and inspiration of many people. Given the scope and duration of the research project, any attempt to detail the numerous people whose ideas, comments and insightful observations are incorporated and critiqued in this dissertation would entail the risk of omission and the lack of proper emphasis. I take this opportunity to express my appreciation to several people who, directly or indirectly, contributed to the development of this work and whose assistance made this work possible.

First and foremost, I sincerely thank my supervisor, Professor Chidi Oguamanam, for his guidance, practical advice and, most importantly, for his patience in responding to numerous questions. From the beginning, he graciously appreciated my research proposal, timely commented on my research idea and encouraged me to apply to the School of Law for admission. He has provided me with thoughtful comments and insightful observations and suggestions through every other step thus far. I thank him for his invaluable foresight in writing the dissertation. Most of all, I thank him for giving me the opportunity and encouragement to learn, to grow, and to explore. His assistance and guidance for making presentations and participating in academic publishing boosted my self-confidence and experience. I cannot forget his comforting words through his emails and face-to-face conversations in the times when I came across a challenging situation.

My deep gratitude also goes to members of my supervisory committee, Professors Brian Noble and Graham Reynolds for their precious time. The panel of supervisors has been a source of guidance and great inspiration through the entire period of my dissertation writing. I am highly indebted to Professor Noble who has been exceptionally generous with his time and effort to give me important feedback and guidance at the early stage of the dissertation development. He helped me see through the mist when I lost direction. His constructive and challenging questions made this a better dissertation. I would like to express my sincere gratitude to Professor Reynolds for his thorough and meticulous reading of the dissertation draft and his copiously helpful suggestions. This dissertation has greatly benefited from his insights, valuable suggestions, and constructive comments.

I would also like to express my profound gratitude and appreciation to Professor Aldo Chircop for his invaluable support. During his tenure as Chair of the Graduate Studies, he went beyond the call of duty on my behalf and helped me secure funding for my research. Professor Chircop kindly acted as a co-supervisor and helped me prepare for defence and final submission of my dissertation.

I would not have completed my studies and dissertation writing without the generous financial support from the Nova Scotia Law Foundation, the Faculty of Graduate Studies, and the Schulich Graduate Scholarship. This support allowed me to start the program, focus on my research and, thus, complete my dissertation on time. In addition, my tenure as Schulich Research Fellow at the School of Law created an ideal atmosphere for me to complete this project on a good note. I would like to gratefully and sincerely thank Professor Richard Devlin for his assistance in his capacity as the Chair of Graduate Studies at the School of Law. His dedication and continued effort in support of my Doctoral application made it possible for me to join the School of Law. He extended his helpful advice during my stay, and his support made my internship and conference travels possible. Special mention also goes to Professor Stephen Coughlan whose efforts as a Chair of the Graduate Studies has been tremendous in concluding my work.

This has been quite a journey and several people contributed to my development academically and professionally. I am highly indebted to a number of Professors and administrative staff members of the Schulich School of Law who have been supportive and encouraging throughout. Shiella Wille assisted generously with her wealth of experience over administrative issues at the commencement of my program. Her successor, Michelle Kirkwood, continued in that tradition. Her hard work and dedication in finalizing the project deserves a special mention!

I also wish to acknowledge Stephanie Theriault and Kim Humes from the Faculty of Graduate Studies for their administrative assistance. Acknowledgment is also due to the administration and library staff at the School of Law and Killam Library for their assistance and cooperation.

During the writing of the dissertation, I have had the rare opportunity to travel the world and meet new people, some of whom contributed to the views expressed in this dissertation. I thank Luca Castellani who has been my supervisor during my stay at United Nations Commission on International Trade Law, Vienna. Also, I am indebted to Spiros V. Bazinas for his insights and advice. My work has greatly benefited from seminar discussion in the U.S., South Africa and Canada. In particular, I would like to thank participants of the Open A.I.R. project research network at the project-launching workshop in Cape Town.

My acknowledgement and grateful appreciation also goes to many people who have given me unconditional support, love, encouragement, and care throughout this process. I would like to acknowledge and thank David Dzidzornu for his helpful and friendly assistance in copy-editing the work. David also gave me his unreserved friendship, advice, prayers and encouragement which helped me overcome personal challenges during my stay at the Law School. I have enjoyed the friendly atmosphere at the Law

School graduate students workplace. I must therefore thank other JSD students and colleagues: Tuma Young, Russell Prime, Illana Luther, Katie Sykes, Hai Dang Vu and Carol Fleischhaker.

I also acknowledge members of the Ethiopian community in Halifax whose support was fundamental for making my stay in Halifax memorable. I risk leaving some of them out as the list is long. Hoping that those missed out will keep on being indulgent, I mention the following: Deacon Lisanu, Enana, Sewalem, Tigist, Daniel Berhanu, Mekete, Menen. Thank you all for your support and encouragement.

Finally, my wife Mekdes is on the top of the list of people whose love, care and understanding guided me through some of the discouraging and stressful moments. A special dedication to my family, especially my mother whose prayer, support, and encouragement from miles away outweighed every obstacle I ever encountered. I also thank my mother -in-law, Yeshiwork Tiyit, and father-in-law, Tesfaye Mekonnen, as well as brother-in-law, Zelalem Tesfaye, for their encouragement and support. The last word of acknowledgement is to the Almighty God for the gift of life and good health.

CHAPTER 1: GENERAL INTRODUCTION

1.1 THESIS INTRODUCTION

The legal regimes that govern the relationship between intellectual property, traditional knowledge, and biodiversity remain sources of significant concern in international law. Difficulties arise in efforts to reconcile legal and policy norms at the intersection of the three regimes. Such difficulties generally stem from the shortcomings of globally recognized forms of intellectual property rights to accommodate the epistemological underpinnings of traditional knowledge and biodiversity.¹

In considering the role of intellectual property in the search for the protection of traditional knowledge in international law, much attention has been devoted to the contradiction between mainstream intellectual property rights, mainly the patent regime on the one hand, and traditional knowledge systems on the other.² Indeed, the incongruity between intellectual property rights and traditional knowledge systems is widely acknowledged.³ Despite this acknowledgment, recent attention has focused on making the

¹ See, generally, Angela R. Riley, “Recovering Collectivity: Group Rights to Intellectual Property in Indigenous Communities” (2000) 18 *Cardozo Arts & Ent L J* 175; Ikechi Mgbeoji, “Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio Piracy?” (2001) 9 *Ind J Global Legal Stud* 163 [Mgbeoji, “Scourge”]; Norman W. Spaulding III, “Commodification and Its Discontents: Environmentalism and the Promise of Market Incentives” (1997) 16 *Stan Env’tl L J* 294; Chidi Oguamanam, “Localizing Intellectual Property in the Globalization Epoch: The Integration of Indigenous Knowledge” (2004) 11 *Ind J Global Legal Stud* 135 at nn 1 [Oguamanam, “Localizing”]; Chidi Oguamanam, *International Law and Indigenous Knowledge: Intellectual Property, Plant Biodiversity, and Traditional Medicine* (Toronto: University of Toronto Press, 2006) at 5 [Oguamanam, “International Law”].

² See list in *ibid.*

³ See Chapter 3 Section 3.2.2.2 below, for more on this topic.

intellectual property system work for indigenous peoples and local communities⁴ who the international community considers custodians of biodiversity.⁵

The shift in outlook on the role of intellectual property has coincided with the widely accepted view that there is a need to reorient the focus of intellectual property from the narrow purpose of providing individuals with economic incentives to “spur innovation” to broader objectives of serving “societal interests and development-related concerns.”⁶ If the current “globalization of [intellectual property] is going to have legitimacy,” it is held,

⁴ See, for example, David R. Downes, “How Intellectual Property Could Be A Tool to Protect Traditional Knowledge” (2000) 25 Colum J Envtl L 253 at 258; Madhavi Sunder, “IP³” (2006) 59 Stanford Law Review; Madhavi Sunder, “The Invention of Traditional Knowledge” (2006) 70 Law & Contemp Probs 97 [Sunder, “Invention”]; Coenraad J. Visser, “Making Intellectual Property Laws Work for Traditional Knowledge” in Finger, J. M. & Philip Schuler, eds, *Poor People's Knowledge: Promoting Intellectual Property in Developing Countries* (Washington: World Bank, 2004); Terri Janke, *Minding Culture: Case Studies on Intellectual Property and Traditional Cultural Expressions* (Geneva: World Intellectual Property Organization, 2003) at 36, online: <<http://www.wipo.int/tk/en/studies/cultural/minding-culture/studies/finalstudy.pdf>>; Daphne Zografos, “Can Geographical Indications be a Viable Alternative for the Protection of Traditional Cultural Expressions” in Fiona Macmillan & Kathy Bowrey, ed, *New Directions in Copyright Law* (Cheltenham: Edward Elgar, 2006); Brad Sherman & Leanne Wiseman, “Towards an Indigenous Public Domain?” in P. Bernt Hugenholtz & Lucie Guibault, eds, *The Future of the Public Domain* (The Hague: Kluwer Law International, 2006).

⁵ See *United Nations Convention on Biological Diversity*, 5 June 1992, 30619 U.N.T.S., entered into force 29 December 1993 (expressly recognizing “the close and traditional dependence of many ILCs embodying traditional lifestyles on biological resources” at Preamble & Art. 8 (j)); Agenda 21, *United Nations Conference on Environment and Development*, Rio de Janeiro, 3-14 June 1992 (“The Earth Summit”), online: <<http://www.un.org/geninfo/bp/envirp2.html>>; *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*, open for signature on 2 February 2011, Annex 1 to CBD COP10, Agenda item 3 at preamble, para.7.

⁶ In response, the WIPO General Assembly added a “development agenda” into its mandate for intellectual property law and policy. See WIPO, *Geneva Declaration on the Future of the World Intellectual Property Organization*, (October 2004) online: Consumer Project on Technology <<http://www.cptech.org/ip/wipo/futureofwipodeclaration.pdf>>; WIPO, *The 45 Adopted Recommendations under the WIPO Development Agenda*, online: <<http://www.wipo.int/export/sites/www/ip-development/en/agenda/recommendations.pdf>>; also see Sunder, “Invention”, *supra* note 4 (citing a proposal to WIPO which calls for “the expansion of intellectual property law’s mandate from an exclusive focus on ‘efficient protection’ and ‘harmonisation’ to ‘fairness, development and innovation’” at 6.)

“issues of recognition and redistribution, development and sustainability ... must be emphasized.”⁷

This thesis provides a general insight on the international law and policy concerning intellectual property, biodiversity, and traditional knowledge, specifically, to assess the applicability of a special form of intellectual property – geographical indications – to protect traditional knowledge-based agricultural products. The thesis affirms that “creativity” in the field of traditional knowledge exists in varied forms. Intellectual property may accommodate aspects of such “creativity” if measures to protect traditional knowledge focus on the flexibility and diversity of the intellectual property system.⁸ A well-designed protective system for traditional knowledge ought to serve the needs of diverse communities who hold traditional knowledge, the diversity of different categories of traditional knowledge, and the various ways of using the knowledge. For this reason, the thesis hypothesises that the search for an appropriate model to protect traditional knowledge should involve identifying different modalities, including those based on intellectual property, to fit the nature and use of traditional knowledge in particular contexts.

⁷ See Nicole Aylwin et al, “Intellectual Property, Cultural Heritage and Rights-Based Development: Geographical Indications as Vehicles for Sustainable Livelihoods” in Willem Grosheide, ed, *Intellectual Property and Human Rights: A Paradox* (Cheltenham: Edward Elgar, 2010) (observing that IPRs recently “are deployed to further objectives as seemingly unrelated as identity politics, rural development, ethical consumption practices, preservation of biological and cultural diversity, and indigenous self-determination” at 1.)

⁸ As O’Connor correctly points out, “if intellectual property protection was limited to patent law, there would be strong arguments for limiting the extension of intellectual property protection and excluding the protection of traditional knowledge.” See Bernard O’Connor, “Protecting Traditional Knowledge: An Overview of a Developing Area of Intellectual Property Law” (2003) 6 J. World Intellect. Property 677 at 697; also see Visser, *supra* note 4 (arguing that existing IPRs may, to a limited extent, be employed to protect traditional knowledge).

As part of its inquiry, the thesis aims to determine whether, and how, generalisations about traditional knowledge and its relation with intellectual property obscure opportunities for a broader role for intellectual property to meet the needs and interests of indigenous peoples and local communities in the world. In the broad spectrum of international regimes on intellectual property, traditional knowledge, and biodiversity, the thesis's scope of inquiry is limited to assessing the applicability of geographical indications as a legal mechanism for protecting traditional knowledge-based agricultural products. The primary goal is to examine the possibility of using geographical indications as a legal means by which indigenous peoples and local communities in biodiversity-rich territories may control and protect their traditional knowledge-based products to achieve greater and effective participation in the global economy. The research investigates how geographical indications could address some of the concerns that the noticeably alarming exploitation of TK and its underlying biodiversity in the global economic order brings.

It is conceded from the outset that geographical indications – or any other protective regime for that matter – cannot fully address the socio-cultural, environmental, and economic problems that result from the lack of protection for traditional knowledge. For this reason, the thesis hypothesizes that in relevant circumstances, properly crafted systems of geographical indications may be utilized as part, or independently, of an overarching modality for protecting traditional knowledge. Such a circumstance can be found in the use of geographical indications to protect products that result from agricultural knowledge and practice: Traditional knowledge-based agricultural products (TKBAPs).

The following Section introduces the subject of the thesis. It presents a general overview of intellectual property, traditional knowledge and biodiversity, and provides insight into the interface between them. The overview serves as background for the discussion of the relationship between the three regimes in subsequent Sections and Chapters.

1.2 GENERAL BACKGROUND: RELATIONSHIP BETWEEN INTELLECTUAL PROPERTY, TRADITIONAL KNOWLEDGE, AND BIODIVERSITY

1.2.1 INTELLECTUAL PROPERTY

In the words of Fisher, the term “intellectual property” refers to “a loose cluster of legal doctrines that regulate the uses of different sorts of ideas and insignia.”⁹ Patents, copyrights, and trademarks are conventional forms of intellectual property (IP). Most forms of IP grant limited monopolies to persons or groups of persons credited with “particular kinds of authorship” or innovation under certain conditions.¹⁰ The dominant rationale for the protection of intellectual property rights (IPRs) in general, and patents in particular, is “to spur innovation” by rewarding the individual through the benefits of monopoly rights over the commercial use of the invention for a limited period.¹¹

⁹ William Fisher III, “Theories of Intellectual Property” in Stephen Munzer, ed, *New Essays in Legal and Political Theory of Property* (Cambridge: Cambridge University Press, 2001), online: <<http://cyber.law.harvard.edu/people/tfisher/iptheory.pdf>> at 1.

¹⁰ Authorship in the sense of general IPRs can refer to both “written authorship” and “the authorship of making and inventing material things.” For discussion on the separate historical contexts of “authorship” in the sense of copyrights and “intellectual property” in relation to patents, see Pamela O. Long, “Invention, Authorship, ‘Intellectual Property’, and the Origin of Patents: Notes toward a Conceptual History” (1991) 32 *Technology and Culture* 846 at 847, notes 3 &4.

¹¹ See David S. Abrams, “Did TRIPS Spur Innovation?: An Analysis of Patent Duration and Incentives to Innovate” (2009) 157 *U Pa L Rev* 1613 at 1615; Diane Leenheer Zimmerman, “Copyrights as Incentives: Did We Just Imagine That?” (2011) 12 *Theoretical Inquiries L* 29; O'Connor, *supra* note 8 at 697; for a critical account of the juridical origins of patents, see Ikechi Mgbeoji, “The Juridical Origins of the

Patents protect inventions that fulfil various criteria, central among which are the criteria of inventiveness and novelty.¹² In copyrights, authors gain rights over, among others, their literary and artistic works. The content of the rights includes, for example, the rights to reproduce the work and to perform it in public. In both patents and copyrights, the rights holders acquire monopoly for a limited period.¹³ Similarly, trademark law grants right holders a monopoly over the use of marks that distinguish their goods and services from the goods and services of others. The initial registration of trademarks for a limited duration is, unlike patents and copyrights, renewable indefinitely.

Aside from the familiar forms outlined above, other forms of IP protection exist for any of the following reasons: To accommodate the uniqueness of certain products; to respond to ongoing technological changes; and to provide IP protection that is grounded on distinct considerations. These categories of IP can be found in legislation for the protection of geographical indications, unfair competitions, trade secrets, integrated circuits, databases, and utility models. In almost all these categories, the owners of IP acquire legally enforceable power to prevent other parties from using a protected content, or to set the conditions on which other parties can use such content.

International Patent System: Towards a Historiography of the Role of Patents in Industrialization” (2003) 5 Journal of the History of International Law 403.

¹² See Nuno Pires de Carvalho, *The TRIPS Regime of Patent Rights* (The Hague: Kluwer Law International, 2010) at 277.

¹³ For example, the Agreement on Trade-Related Aspects of Intellectual Property recognizes the term of protection for copyright holders to be “no less than 50 years from the end of the calendar year of authorized publication, or, failing such authorized publication within 50 years from the making of the work, 50 years from the end of the calendar year of making.” The Agreement requires the protection of rights to patents for the duration of twenty years from the filing date. See *Agreement on Trade-Related Aspects of Intellectual Property Rights*, 15 April 1994, 1869 U.N.T.S. 299: 33 I.L.M. 1197[Hereinafter, “TRIPS Agreement”] at Art. 18 & Art. 33.

1.2.1.1 Justifications for the Protection of Intellectual Property

The protection of the conventional forms of IP is justified under a wide range of theories. IPRs defy a unified theory for a number of reasons.¹⁴ Distinct grounds justify their recognition in different jurisdictions. In addition, IPRs are used in diverse areas in rapidly emerging frontiers of knowledge. The theoretical landscape in IPRs continues to deepen and widen as the importance attached to IP continues to rise on multiple fronts.¹⁵

Extensive discussion of the theoretical and philosophical bases of IP protection is outside the objectives of this thesis.¹⁶ A brief overview of the theoretical foundation of IPRs, however, is helpful to indicate the increasing significance and value attached to IPRs in today's world. In general, two dominant justifications underpin the philosophical roots of existing IP systems: Utilitarianism and natural rights/labour. An emerging approach often used to address drawbacks in the pursuit of identifiable policy objectives in all areas of IP comes under the label of "social planning theory."¹⁷

¹⁴ See Chidi Oguamanam "Beyond Theories: Intellectual Property Dynamics in the Global Knowledge Economy" (2009) 9 Wake Forest Intell Prop L J 104 [Oguamanam, "Beyond Theories"].

¹⁵ See Peter Drahos, *The Philosophy of Intellectual Property Rights* (Aldershot: Dartmouth, 1996); Adam D. Moore, ed, *Intellectual Property: Moral, Legal and International Dilemmas* (New York: Rowman and Littlefield, 1997); Peter S. Menell, "Intellectual Property: General Theories" online: <<http://www.dklevine.com/archive/ittheory.pdf>>; Fisher III, *supra* note 9; Justin Hughes "The Philosophy of Intellectual Property" (1988) 77 Geo LJ 287; Mark A Lemley, "Property, Intellectual Property, and Free Riding" (2005) 83 Texas L Rev 1031.

¹⁶ This thesis is more interested in understanding the background to the relationship between IP, TK and biodiversity, than in a full exposé of the theoretical foundations of IP.

¹⁷ The term "social planning theory" is coined by William Fisher to describe the orientation underlying critical perspectives on the current IP regime. Fisher III, *supra* note 9; also see Gregory S. Alexander, *Commodity and Propriety* (Chicago: University of Chicago Press, 1997).

By far, the most common argument to justify IPRs, “at least in Anglo-American law,” rests on utility: IPRs are protected “to induce innovation and intellectual productivity.”¹⁸ According to this theory, if the law does not protect IPRs, there will not be enough incentive to innovate, and thus, society will be without the benefits of innovation.

The utilitarian view argues that to maximize benefits to society, the lawmaker must strike a balance between the “exclusive rights” of the individual and the interest of the public. IP law aspires to strike a balance between the rights of the individual that provide incentives to engage in “the creation of inventions and works of art” on the one hand, and “the partially offsetting tendency of such rights to curtail widespread public enjoyment of those creations,” on the other.¹⁹ For this reason, “exclusive rights in intellectual creations” are limited in duration and scope, and are balanced against right holders’ economic aspirations and power.²⁰

The utilitarian justification for IP protection has come under serious scrutiny in recent times. First, the desire for financial gain – the major constitutive representation of “rewards” by IPRs²¹ – does not necessarily motivate all inventions and creativity. More

¹⁸ Kal Raustiala & Stephen R. Munzer, “The Global Struggle Over Geographic Indications” (2007) 18 EJIL 337 at 359. For more about this theory, see Lior Zemer, “On the Value of Copyright Theory” (2006) 1 Intellectual Property Quarterly 55 at 57; Jack Hirshleifer, “The Private and Social Value of Information and the Reward to Innovative Activity” (1971) 61 American Economic Review 561-574; Robert P. Merges et al, *Intellectual Property in the New Technological Age* (New York: Aspen, 1997).

¹⁹ Fisher III, *supra* note 9 at 3.

²⁰ Zemer, *supra* note 18 at 57.

²¹ Indigenous peoples and local communities engage in the creation, preservation and transfer of knowledge in a continual manner as a means of survival and group identity, and not for the sake of financial gain. In real-life terms, there are other incentives that encourage creativity and inventiveness, including honor and recognition as evidenced and rewarded through publication, citation, academic tenure, prizes for academic achievement or demonstrations of skill in public competitions, and awards of government grants for research. Gupta Anil K., “Accessing Biological Diversity and Associative Knowledge Systems: Can Ethics

importantly, accounts of significant creativity and innovation that are not necessarily linked to IPRs undermine the incentivizing role of IPRs in stimulating innovation or creativity.²²

A more likely effect of IPRs is their incentive for “commercialisation of inventions.”²³ The effect of IPRs in promoting the commercialisation of inventions and in maximizing the profitability of inventions is distinguishable from, and should not be conflated with, “the promotion of inventiveness and creativity” as presumed by the utilitarian logic.²⁴ By incentivising “commercial success” and the “profit motive” based on the logic of market responsiveness to “invention,” therefore, the reward rationale of IPRs “shifts creative and inventive efforts outside the priorities of the larger society.”²⁵ This effect of IPRs negates

Influence Equity?” cited in David R. Downes, “How Intellectual Property Could Be a Tool to Protect Traditional Knowledge” (2000) 25 Colum J Envtl L 253 at 260.

²² The credibility of the assumptions underlying the utilitarian view, namely, the role of incentive and rewards in spurring innovation, have been undermined by numerous instances of creativity and inventiveness that have been accomplished without any system of IPRs. See, for example, Oguamanam, “Beyond Theories,” *supra* note 14 at 119-120 (noting that “notable civilizations, including Imperial China, the Arab world and undocumented pre-historic ILCs across the globe sustained their distinguished technological feats without a conventional intellectual property system”). After detailed inquiry on the links between IPRs, mainly the patent system, and inventiveness, Mgbeoji concludes that:

[E]conomists are almost unanimous in their belief that there is no conclusive evidence to show that patent systems have any causal relationship with inventiveness. Surveys of business leaders (with the notable exception of pharmaceutical companies) typically place a low ranking on patents as a stimulant for research and development.

See Ikechi Mgbeoji, *Global Biopiracy: Patents, Plants and Indigenous Knowledge* (Vancouver: UBC Press, 2005) at 21 [Mgbeoji, “Global Biopiracy”].

²³ See, Oguamanam, “Beyond Theories,” *supra* note 14 at 121.

²⁴ *Ibid.*

²⁵ Oguamanam, “Beyond Theories,” *supra* note 14 at 121. The effect of the patent system in commercialization instead of innovation can be illustrated by the focus of most patent applications in health research where priority is given to pharmaceutical products for aesthetic and cosmetic consumption in Western markets at the expense of research and innovation for neglected diseases in developing countries. See Beatrice Stirner, “Stimulating Research and Development of Pharmaceutical Products for Neglected Diseases” (2008) 15 European Journal of Health Law 391-409.

the utilitarian proposition that the grant of exclusive monopolies stimulates inventiveness, and thus, “maximizes the net social welfare.”²⁶

Another theory of IP is often associated with John Locke, and is loosely derived from the writings of Hegel and Kant; the natural rights theory.²⁷ The basic premise of this theory is that “everyone has a natural property right in his or her own ‘person’ and in the labour of his or her body.”²⁸ The natural rights theory justifies the establishment of IPRs on the ground that a creator has projected his/her labour into his work, and, that the law should protect this personal exertion. In short, the theory of natural rights proposes that “a person who labours upon resources that are either unowned or ‘held in common’ has a natural property right to the fruits of his or her efforts – and that the state has a duty to respect and enforce that natural right.”²⁹

This theory, too, has been criticized on numerous grounds.³⁰ First, the logical extension of the basic premise of exclusive rights over one’s labour suggests exclusive ownership of the resulting property. Realistically, the exclusivity is achieved in corporeal

²⁶ Claudio R. Frischtak, “Harmonization Versus Differentiation in Intellectual Property Right Regimes” in Mitchel B. Wallerstein, et al, eds, *Global Dimensions of Intellectual Property Rights in Science and Technology* (Washington: National Academy Press, 1993) at 97.

²⁷ See Martin A. Roeder, “The Doctrine of Moral Right: A Study in the Law of Artists, Authors and Creators” (1940) 53 Harv L Rev 554; Brian Fitzgerald, “Theoretical Underpinning of Intellectual Property: ‘I am a Pragmatist But Theory is my Rhetoric’” (2003) 16 Can J L & Jurisprudence 179; Hughes, *supra* note 15 at 315 ff; See Lawrence C. Becker, “*Deserving to Own Intellectual Property*” (1993) 68 Chi-Kent L Rev 609; Justin Hughes, “The Personality Interest of Artists and Inventors in Intellectual Property” (1998) Cardozo Arts & Ent LJ 81-181; Michael Lehmann, “The Theory of Property Rights and the Protection of Intellectual and Industrial Property” (1985) 16 IIC 525-540; Zemer, *supra* note 18 at 59.

²⁸ *Ibid.*

²⁹ Fisher III, *supra* note 9 at 4.

³⁰ For in-depth critique of this theory, see Oguamanam, “Beyond Theories,” *supra* note 14 at 110-112.

tangibles, but infeasible in ideas which are currently the only proper subjects of IPRs. Second, by situating IPRs in the domain of purely private rights rather than the government privileges they have historically been, the theory suggests that IPRs are inherent and inalienable natural rights of individuals.³¹ Rights over IP works are, in most cases, subjected to and shaped by normative and regulatory processes, which are informed by socio-economic considerations.³² The considerations of ordinary social policy and welfare necessitate a number of exceptions and qualifications, such as limitations on patentable subjects, compulsory licensing, duration of patents, and fair-dealing exceptions.³³ The inherently private nature of rights under the rationale of labour theory would make it impossible to provide such exceptions and qualifications to IPRs.

Social-planning theory is the latest and newest theory used to justify IP. Not yet fully developed even in its label,³⁴ this theory “is not as well known as others.”³⁵ Nevertheless, the social-planning theory is distinguished from other theories of IP by its emphasis of

³¹ Ikechi Mgbeoji, *Patents and Plants: Rethinking the Role of International Law in Relation to the Appropriation of Traditional Knowledge of the Uses of Plants (TKUP)* (JSD Thesis, Dalhousie University, 2001) at 55 [Mgbeoji, “Patents and Plants”].

³² See Oguamanam, “Beyond Theories,” *supra* note 14 (arguing that “statutes, case law, and contracts, including general common law traditions and other regulatory and quasi-regulatory regimes, control the ambit of rights over intellectual products, taking such rights well outside natural rights’ unfettered terrain” at 110.)

³³ See Mgbeoji, “Patents and Plants,” *supra* note 31 at 55.

³⁴ There is no consensus in the naming of this theory, and thus, it “has been espoused through a cluster of voices under different but related conceptual alignments.” See Oguamanam, “Beyond Theories,” *supra* note 14 at 28. Zemer refers to this theory as “social and institutional planning;” Alexander offers “proprietary theory” while Fitzgerald uses the term “cultural enhancement theory.” In the thesis, I adopt William Fisher’s label, “social-planning theory.” See Fitzgerald, *supra* note 27; Fisher III, *supra* note 9 at 56; Gregory S. Alexander, *Commodity and Property: Competing Visions of Property in American Legal Thought* (Chicago: University Of Chicago, 1998) cited in William W. Fisher III, “Property and Contract on the Internet” (1998) 73 Chi-Kent L Rev 1203 at 1214 [Fisher III, “Property”].

³⁵ See Fisher III, *ibid.* at 1214.

desirable objectives for IP law and policy in “*ought* terms.”³⁶ The theory aspires to rectify various shortcomings of the mainstream theories of IP as to their pursuit of certain public policy goals. Proponents of the social planning theory view IP as a strategic instrument that “advances a balanced cultural and a balanced competing stakeholders’ vision... ‘in the processes of social dialogue’.”³⁷

According to Fisher, the social planning theory proposes that “property rights in general – and intellectual-property rights in particular – can and should be shaped so as to help foster the achievement of a “just and attractive culture” that is, “a just and attractive society.”³⁸ Fitzgerald outlines the essence of this theory as follows:

If we live in an information based economy, culture and society, the process of propertizing information must be seen as being inherently concerned with the way we live, think, communicate and construct knowledge...far beyond questions of economics to key cultural and social issues which the process of propertizing information must now accommodate.³⁹

To some extent, the social planning theory approach coincides with utilitarianism in its “teleological orientation” (justifying IP protection in an attempt to maximize net social welfare). However, it differs in its willingness to “deploy visions of a desirable society richer than the conceptions of ‘social welfare’” as set

³⁶ See Oguamanam, “Beyond Theories,” *supra* note 14 at 128 [*emphasis in the original*].

³⁷ *Ibid*, quoting Carys J. Craig, “Locke, Labour and Limiting the Author’s Right: A Warning against a Lockean Approach to Copyright” (2002) 28 *Queens L J* 1.

³⁸ Fisher III, *supra* note 9 at 6 [*emphasis added*]; see Oguamanam, “Beyond Theories,” *supra* note 14 at 128.

³⁹ See Fitzgerald, *supra* note 27 at 184.

out by proponents of the utilitarian theory.⁴⁰ Beyond the achievement of economic goals, therefore, the social planning theory depicts IP as a thematic context for the recognition and promotion of cultural and social interests to achieve “economic and cultural empowerment and disempowerment of nations and peoples.”⁴¹

Despite the growing interest that the theory of social planning has garnered among academics and IP policy experts, it has its own limitations.⁴² First, as Oguamanam notes, the theory places “too much emphasis on the amorphous concept of culture,” as if culture is the only ultimate goal of IP law and policy.⁴³ The theory is also criticised for its “inherently paternalistic” vision in its prescription of what is desirable, in contrast to “the putative neutrality and objectivity” of the dominant theories of IP.⁴⁴

⁴⁰ Fisher III, *supra* note 9 at 6.

⁴¹ Oguamanam, “Beyond Theories,” *supra* note 14 at 128.

⁴² For example, in IP policy, the theory of social planning is deployed to justify the imperatives of serving certain social and public interests. In the realms of copyrights, this theory is utilized to justify the trimming down of the copyright regime along certain lines, to create and nourish vibrant civil society in democratic institutions. See Fisher III, *supra* note 9 at 7 citing Neil Netanel, “Copyright and a Democratic Civil Society” (1996) 106 Yale Law Journal 283; Neil Netanel, “Asserting Copyright’s Democratic Principles in the Global Arena” (1998) 51 Va L R 217-329; Rosemary J. Coombe, “Objects of Property and Subjects of Politics: Intellectual Property Laws and Democratic Dialogue” (1991) 69 Texas Law Review 1853; Niva Elkin-Koren, “Copyright Law and Social Dialogue on the Information Superhighway: The Case Against Copyright Liability of Bulletin Board Operators” (1995) 13 Cardozo Arts & Entertainment Law Journal 345; Michael Madow, “Private Ownership of Public Image: Popular Culture and Publicity Rights” (1993) 81 California Law Review 125; William Fisher III, “Reconstructing the Fair Use Doctrine” (1988) 101 Harv L Rev 1659-1795 at 1744.

⁴³ Oguamanam, “Beyond Theories,” *supra* note 14 at 128.

⁴⁴ *Ibid.*

Although these are the general theories that offer the readiest justifications for IPRs, several other theories are also cited to justify various forms of IPRs.⁴⁵ As discussed in later parts of this thesis, specific theories are found in the realm of trademarks and geographical indications, although each may, somehow, be inspired by one or another of the overarching theories reviewed in this section.⁴⁶

1.2.1.2 Historical Account

The historical record is that the notion of rewarding originators of ideas for their contributions can be traced back to the fourth century B.C. —at the time when Aristotle and Hippodamus of Miletus debated the latter’s call for “a system of rewards to those who discover useful things.”⁴⁷ Indeed, evidence also suggests that individuals in ancient societies recognize the need to protect “human thought (intellectual property) as distinct from divine inspiration which could not be owned.”⁴⁸

The different forms of IP currently recognized in most jurisdictions have different territorial and temporal origins. Although the roots of some components of IP existed in antiquity, a fully developed systematic protection of IP through government machinery

⁴⁵ Mostly espoused in the realm of patents, for example, “contract theory” justifies the grant of rights on the ground that “the inventor notionally agrees to disclose her invention to the state, for example, by way of filing a patent specification in consideration or exchange for the exclusive right, like a monopoly, to exploit the invention for a fixed term.” See Oguamanam, “Beyond Theories,” *supra* note 14 at 112.

⁴⁶ See Chapter 1 Section 1.5 & Chapter 5 Section 5.10.

⁴⁷ Paul Durdik, “Ancient Debate, New Technology: The European Community Moves to Protect Computer Databases” (1994) 12 BU Int’l LJ 153 at 159-160.

⁴⁸ See Carlos A. Primo Braga et al, “Intellectual Property Rights and Economic Development” in Keith E. Maskus, ed, *The WTO, Intellectual Property Rights and the Knowledge Economy: Critical Perspectives on the Global Trading System and the WTO* (Cheltenham: Edward Elgar, 2004) at 245.

emerged during the European Renaissance in the medieval period.⁴⁹ Notable among the early IP laws were the patent law of the Venetians in 1474, the Statutes of Monopolies of 1623 in England, and the Patent Act of the US in 1790. In general, the development of copyrights and trademarks in most jurisdictions follows similar trends.⁵⁰

Simplicity and brevity characterize most of the IP legislation in the past. The scope of protection they offered was limited to a simple recognition of “the rights of the inventor,” though the subject matter of protection included mainly machines and mechanical devices.⁵¹ Discoveries, principles of nature, and natural products were all excluded from patentability.⁵²

The early forms of IP were reformed, however, with the discovery of technical capabilities in the agricultural sector in the early twentieth century. The advent of “specialized” and “scientific” plant breeding tools in the twentieth century’s science

⁴⁹ See discussion of the historical roots of IP in Paul A. David, “Intellectual Property Institutions and Panda’s Thumb: Patents, Copyrights and Trade Secrets in Economic Theory and History” in M. Wallerstein et al, *Global Dimensions of Intellectual Property Protection in Science and Technology* (Washington, D.C.: National Academies Press, 1993); for an account of the historical origins of the patent system, see Ikechi Mgbeoji, “The Juridical Origins of the International Patent System: Towards a Historiography of the Role of Patents in Industrialization” (2003) 5 J Hist Int’l L 403.

⁵⁰ See discussion on the historical origins of copyrights in Peter Prescott, “The Origins of Copyright: A Debunking View” (1989) 12 Eur Intell Prop Rev 453 ; for trademarks, see Frank I. Schechter, *The Historical Foundations of the Law relating to Trade Marks* (New York: Columbia University Press, 1925); for geographical indications, see WIPO, *Geographical Indications: Historical Background, Nature of Rights, Existing Systems For Protection and Obtaining Effective Protection in Other Countries*, Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, (Geneva, March 2001) online: WIPO < http://www.wipo.int/edocs/mdocs/sct/en/sct_6/sct_6_3.pdf >.

⁵¹ Peter Drahos, “The Universality of Intellectual Property Rights: Origins and Development” online: WIPO < <http://www.wipo.int/tk/en/hr/paneldiscussion/papers/pdf/drahos.pdf> > at 3 ff; also, see discussion in Byron Allen & Ikechi Mgbeoji, “Patent First, Litigate Later! The Scramble for Speculative and Overly Broad Genetic Patents: Implications for Access to Health Care and Biomedical Research” (2003) 2 CJLT 83-98 [Allen]. at 85 citing Brad Sherman & Lionel Bently, *The Making of Modern Intellectual Property Law – The British Experience* (Cambridge: Cambridge University Press, 1999).

⁵² Allen, *ibid.* citing R. Godson, “Law of Patents” (1833) 15 Hansard Col 977.

laboratories led to the expansion of IPRs protection to useful plant life forms – a phenomenon that emerged predominantly in the United States (US).⁵³ The last quarter of the twentieth century heralded the emergence of more sophisticated technological applications of recombinant DNA and DNA sequencing procedures in commercial crop production.

The increase in the application of biotechnology expanded the subject matter of patents, and, consequently, increased the commercial significance of IPRs in the areas of pharmaceutical development and agricultural production.⁵⁴ The incorporation of IPRs norms in international treaties has prompted multinational private actors to engage in diverse “technological innovations” in these areas. Innovations in the agricultural sector mostly resulted in the globalization of production practices and protocols that were, otherwise, based on “local conditions of culture and climate.”⁵⁵

⁵³ The discovery – in 1919 – of the techniques of “hybridizing corn” in the US led to the enactment of the world’s first legal regime for new forms of plants in 1930 with the US’s Plant Patent Act (PPA). See Craig Borowiak, “Farmers’ Rights: Intellectual Property Regimes and the Struggle over Seeds” (2004) 32 *Politics & Society* 511 at 514. Also, see Jack Ralph Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology* (Madison: Univ of Wisconsin Press, 2004) at 132; Following developments in national legislation in this regard, the primary international framework for plant variety protection was agreed and established among the economically advanced countries in 1961: the Union for the Protection of New Varieties of Plants (UPOV). See *International Convention for the Protection of New Varieties of Plants* 2 December 1961, 33 UST. 2703, 815 U.N.T.S. 89 (as revised at Geneva on 10 November 1972, 13 October 1978) the 1991 revision online: <<http://www.upov.int/en/publications/conventions/1991/act1991.htm>> [hereinafter “UPOV 1991”].

⁵⁴ For more discussion about recombinant DNA (rDNA), see below Chapter 3 section 3.2.1.3. See M.Q. Sutton & E. N. Anderson, *Introduction to Cultural Ecology* (Walnut Creek: AltaMira Press, 2004) at 96-124; also see Pierre-Benoit Joly & Marie-Angele de Looze, “An analysis of Innovation Strategies and Industrial Differentiation Through Patent Applications: The Case of Plant Biotechnology” (1996) 25 *Research Policy* 1028; Herbert Jervis, “Impact of Recent Legal developments on the Scope and Enforceability of Biotechnology Patent Claims” (1994) 4 *Dick J Envtl L & Pol’y* at 66.

⁵⁵ John Madeley, *Food for All: The Need for A New Agriculture* (London: Zed Books, 2002) at 11.

The rapid expansion of digital technology increased the importance and expanse of the IPRs, ushering in an era that measures economic activities by the extent of production, distribution, and use of knowledge and ideas: The global knowledge economy.⁵⁶ As instruments to “control ... information and ideas,” the regulation of IPRs attracted significant interest in multiple fronts of national and international law and policy-making in the global knowledge economic order.⁵⁷ The following Section provides background information on the relationship between IPRs and traditional knowledge (TK) by describing the nature and meaning of the global knowledge economy.

1.2.2 THE GLOBAL KNOWLEDGE ECONOMY

As the discussion on the historical evolution of IP demonstrates, the scope and subject matter of IP protection continues to expand to accommodate a range of “inventions and creativity” in a markedly different era of technological and scientific advancement.⁵⁸ The phenomenon of the global knowledge economy (GKE) best explains the dynamics of IP in this scenario.

The term “knowledge economy” describes the system of knowledge generation and exchange in today’s economy. In the GKE, economic activities are conducted with the

⁵⁶ See Organization for Economic Co-Operation and Development, *The Knowledge-Based Economy* (Paris: OECD, 1999); Alex Burfitt, Chris Collinge & Adreene Staines, *Knowledge and the Economy: Cross-Disciplinary Perspectives and the Knowledge Economy Thesis*, Working Paper, University of Birmingham Centre for Urban and Regional Studies School of Public Policy (2007).

⁵⁷ Peter Drahos & John Braithwaite, *Information Feudalism: Who Owns the Knowledge* (London: Earthscan, 2002); see Chapter 4 Section 4.3, Section 4.4, below, for discussion of the regulation of IPRs in various forums of international law-making.

⁵⁸ See generally Andrew Beckerman-Roda, “The Problem with Intellectual Property Rights: Subject Matter Expansion” 13 *Yale J L & Tech* 35; Michael W. Carroll, “The Struggle for Music Copyright” (2005) 57 *Fla L Rev* 907.

help of computer-driven digital technologies, “often with special interest in data mining and biotechnology or biological/genetic engineering.”⁵⁹ Intangible assets of knowledge and information replace raw materials, labour, and capital as significant factors of production. In short, GKE signifies “an epochal transformation” from an economic model in which the principal source of wealth was tangible assets, to a new economic model in which “the principal component of value creation, productivity, and economic growth is knowledge and intellectual capabilities.”⁶⁰

The emergence of GKE is attributable to two major factors: The rise of knowledge intensive economic activities, and increased globalization of norms that guide such activities. The first factor arises from the growth of computer-driven information and communication technology (ICT), and the emergence of advanced biotechnological applicability in most spheres of economic activity.⁶¹ Combined with advancements in biotechnology, the growth in ICT has ushered in an unprecedented ability to manipulate biological components and organisms (plant, animal, and human genetic materials) for research and development in the areas of medical, pharmaceutical, and agricultural activities.

⁵⁹ Oguamanam, “Beyond Theories,” *supra* note 14 at 131; see a similar description of the term in Peter F. Drucker, *The Age of Discontinuity: Guidelines to our Changing Society* (Piscataway: Transaction, 1968) at 269 ff; also see Husain Nazish Irshad, *Emergence of Knowledge Economy*, online: Legal Service India <<http://www.legalserviceindia.com/article/1121-Emergence-of-Knowledge-Economy.html>>.

⁶⁰ See Richard Florida & Martin Kenney, “The New Age of Capitalism: Innovation-Mediated Production” (1993) 25 *Futures* 637 at 637.

⁶¹ See John Houghton & Peter Sheehan, *A Primer on the Knowledge Economy* (Victoria: Centre for Strategic Economic Studies, 2000) at 2; Lee Fleming & Olav Sorenson, “Technology as A Complex Adaptive System: Evidence from Patent Data” (2001) 30 *Research Policy* 1019-1039; Mark Stamp, “Digital Rights Management: The Technology behind the Hype” (2003) 4 *Journal of Electronic Commerce Research* 102-112.

The second factor behind the emergence of the GKE relates to the rapid globalisation of norms and practices that govern the different spheres of economic activity. Unlike the territoriality of the past economic dynamics, the current economy is characterised by an unprecedented pace of global integration of the norms that regulate international trade, intellectual property, and technology⁶²

Common to the factors of knowledge intensity and globalization is the Internet phenomenon that symbolizes the global communications revolution. Advancement in communications has made it possible “to manipulate, store and transmit large quantities of information” at marginal cost.⁶³ This, in turn, has facilitated the pervasive application of knowledge in all stages of economic activities, from research and development to production, marketing and distribution in both goods and services.⁶⁴

The ability to generate, manage, exchange and transfer knowledge in the GKE has led to a situation in which science-based technologies, such as biotechnologies, product and process chemistry, and new methods for designing and producing pharmaceuticals have become the prime movers of innovation and economic growth.⁶⁵ It is against this backdrop that attention was drawn to a category of knowledge that has distinctive social and intellectual characteristics, and which exists among indigenous peoples and local

⁶² See *Ibid.* at 4; also see Chapter 3 Section 3.4, below, for discussion of the phenomenon of globalization and its impact.

⁶³ Houghton & Sheehan, *supra* note 61 at 2.

⁶⁴ *Ibid.*

⁶⁵ See generally Rifat A. Atun, Ian Harvey & Joff Wild, “Innovation, Patents And Economic Growth” (2007) 11 *Innovation, Patents And Economic Growth* 279-297; Adam B. Jaffe, Manuel Trajtenberg & Paul M. Romer, *Patents, Citations, and Innovations: A Window on the Knowledge Economy* (Cambridge: MIT Press, 2005).

communities (ILCs), with deep historical and cultural roots: traditional knowledge (TK).⁶⁶ TK attracted attention in multiple forums of IP law and policy in the wake of the increased use of biodiversity as a basis for “inventions and creativity” through biotechnological methods. As the discussion in Chapter Two indicates, TK is intrinsically linked to and is often embodied in biodiversity.⁶⁷

1.2.3 THE INCREASING ATTENTION TO TRADITIONAL KNOWLEDGE AND BIOLOGICAL RESOURCES

Interest in TK emerged in the context of the biotechnological revolution following the discovery of methods of DNA sequencing. As well, recombinantly producing protein through biotechnological progress and scientific knowledge further spurred TK’s commercial applicability on multiple fronts, mainly in the agricultural and pharmaceutical fields. Researchers in the agricultural and pharmaceutical industry continue to utilize the leads provided by TK to use biological resources as a basis for “endeavours in search of cures for diseases and ways and means to enhance food security.”⁶⁸

The attention given to TK in international and national policy-making forums arose from the need to prevent its misappropriation in the use of biological resources in scientific endeavours. TK has paramount importance in the utilization and the preservation of biological resources. The peculiar relationship TK has with biological

⁶⁶ See Chapter 2 Section 2.2 below, for detailed discussion of TK.

⁶⁷ See WIPO, *Draft Articles on the Protection of Traditional Knowledge Prepared at IWG 2* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Second Intersessional Working Group, Geneva, February 21 to 25, 2011) (proposed definition of TK provides as “Traditional knowledge is intrinsically linked to biodiversity and sustains cultural, social and human diversity embodied in traditional lifestyles” at Art. 1.)

⁶⁸ See Sutton & Anderson, *supra* note 54 at 96-124.

resources can be gleaned from the fact that the overarching international legal framework in the field of environmental protection and biodiversity conservation – the Convention on Biological Diversity (CBD) — explicitly addresses the protection of TK as a means of preserving biological resources.⁶⁹

The ways in which rights over intangible assets are allocated and regulated peculiarly distinguish the key economic activities that define the GKE. Ownership of knowledge-based assets, which lies at the heart of the GKE, is governed by IP rules that have acquired prominence in global trade regulation over the last twenty years.⁷⁰ IPRs lie at the core of the GKE, and have a catalyzing role in facilitating its success.⁷¹ The object of IPRs has expanded, transcending settled boundaries, in order, broadly, to regulate rights over innovation and creativity.⁷² In the course of regulating the allocation of rights over knowledge, however, the globally-recognized IPRs norms fail to recognize and protect the contribution of TK.⁷³ This has opened the way for rampant misappropriation, misuse

⁶⁹ United Nations University, *TK Initiative: Convention on Biological Diversity*, online: United Nations University <http://www.unutki.org/default.php?doc_id=47>; see also Oguamanam, “International Law,” *supra* note 1 (noting that “the CBD represents perhaps the most authoritative international instrument yet that recognizes the traditional knowledge of ILCs” at 5.)

⁷⁰ See Chapter 3 Section 3.2.2.2 below; also, see *supra* note 57 at 17.

⁷¹ See Peter Drahos “Intellectual Property Rights in the Knowledge Economy” in David Rooney et al,eds, *Handbook on the Knowledge Economy* (Cheltenham: Edward Elgar, 2005) 139-151 at 140.

⁷² For example, existing IP frameworks have been extended to fit different forms of invention derived from scientific knowledge which, sometimes, may not be so new: patents for some category of software inventions, plant breeding and biotechnological inventions; copyrights for computer databases and expression of algorithm formulae; domain names in the case of web servers and networks. See Oguamanam, “Beyond Theories,” *supra* note 14 at 130; also, see Allen, *supra* note 51.

⁷³ See Chapter 3 Section 3.2.2.2, below, for discussion of the incompatibility between globally recognized IPRs systems and TK.

and exploitation of TK beyond its traditional context – a phenomenon known as biopiracy.⁷⁴

The term “biopiracy” describes the manner in which multinational corporations from industrialized countries “claim ownership of, free ride on or otherwise take unfair advantage of ... genetic resources and traditional knowledge.”⁷⁵ Bengwayan defines biopiracy as:

The manipulation of intellectual property rights by those intending to have exclusive control over genetic resources and traditional knowledge without giving adequate recognition or remuneration to the original possessors of these resources.⁷⁶

The rise of digital technologies and, as a result, the boom in inventions in biotechnology is a driving force in the widespread appropriation of TK in medicinal,

⁷⁴ See section on “Bioprospecting and Biopiracy: A Historical Perspective” in John Tustin, “Traditional Knowledge and Intellectual Property in Brazilian Biodiversity Law” (2006) 14 *Tex Intell Prop L J* 131, 132-137; also see Nigel David Christian, *From Biopiracy to Bioprospecting: An Historical Sociology of the Search for Biological Resources* (PhD thesis, University of Warwick, 2007) [unpublished].

⁷⁵ Graham Dutfield, “Identification of Outstanding ABS Issues: Access to GR and IPR: What is Biopiracy?” (International Expert Workshop on Access to Genetic Resources and Benefit Sharing, 2004) online: <<http://www.canmexworkshop.com/documents/papers/I.3.pdf>>; The term “biopiracy” is first coined by the founder of the Canada-based NGO, Rural Advancement Foundation International (RAFI) (now the ETC Group), Pat Mooney. Chris Hamilton “Biodiversity, Biopiracy and Benefits: What Allegations of Biopiracy Tell us about Intellectual Property” (2006) 6 *Developing World Bioethics* 158 at 162; Joan Martinez Alter, “International Biopiracy Versus the Value of Local Knowledge” (2000) 11 *Capitalism Nature Socialism* 59 at 59; see Chapter 3 Section 3.2.2.1, below, for discussion of the multi-dimensional impacts that biopiracy has on indigenous people and local communities.

⁷⁶ Michael A. Bengwayan, *Intellectual and Cultural Property Rights of Indigenous and Tribal Peoples in Asia: Report of Minority Rights Group International* (London: Minority Rights Group International, 2003) See further Mgbeoji, “Global Biopiracy,” *supra* note 22 at 90. Shayana Kadidal, “Subject-Matter Imperialism? Biodiversity, Foreign Prior Art and the Neem Patent Controversy” (1997) 37 *J L & Tech* 371; Gavin Stenton, “Biopiracy within the Pharmaceutical Industry: A Stark Illustration of How Abusive, Manipulative and Perverse the Patenting Process Can Be Towards Countries of the South” (2004) 26 *Eur Intell Property Rev* 1; Jim Chen, “There's No Such Thing as Biopiracy... And It's a Good Thing Too” (2006) 37 *McGeorge L Rev* 1; H. Svarstad, “Analysing Conservation-Development Discourses: The Story of a Biopiracy Narrative” (2002) 29 *Forum For Dev Stud* 63-87.

agricultural, and commercial use of TK and biodiversity resources.⁷⁷ Changes in the jurisprudence of the IPRs system, which expanded the scope and nature of the rights, especially patent rights, play a critical role in perpetrating biopiracy.⁷⁸

1.2.4 THE ROLE OF INTELLECTUAL PROPERTY IN THE PROTECTION OF TRADITIONAL KNOWLEDGE

The relationship between IPRs and TK has become apparent with realization of the role of TK in providing leads to the utilization of biological resources through technological advances.⁷⁹ IPRs are “one, or even the principal” ways through which the potential value of genetic resources is captured.⁸⁰ They are often used to secure the “functional utility of genetic resources” derived from TK.⁸¹ In this respect, the issue of TK has brought to the IP system questions such as:

What forms of respect and recognition of TK would deal with concerns about TK and give communities the tools they need to safeguard their interests? Is the IP system compatible with the values and interests of traditional

⁷⁷ See Oguamanam, “Beyond Theories,” *supra* note 14 at 136ff; Silvia Ribeiro, “The Traps of ‘Benefit Sharing’” in Beth Burrows, ed, *The Catch: Perspectives in Benefit Sharing* (Edmonds: The Edmonds Institute, 2005) (identifying “new technologies -biotechnologies, genomics, bioinformatics, and nanotechnology” as factors that led to the intensification of the biopiracy of traditional knowledge and resources at 44); also see Vandana Shiva, “Bioprospecting as Sophisticated Biopiracy” (2007) 32 *Signs: J of Women in Culture & Soc’y* 307.

⁷⁸ See Chapter 3 Section 3.2.2.2; also see Chris Hamilton, “Biodiversity, Biopiracy and Benefits: What Allegations of Biopiracy Tell Us about Intellectual Property” (2006) 6 *Developing World Bioethics* 158 – 173; also see Daniel F Robinson, “Locating Biopiracy: Geographically and Culturally Situated Knowledges” (2010) 42 *Environment and Planning* 38-56.

⁷⁹ See Michael Blakeney, *Intellectual Property, Traditional Knowledge and Genetic Resources: Policy, Law and Current Trends* (Paper Delivered at the WIPO National Seminar on Intellectual Property for Faculty Members and Students of Ajman University, Ajman, 5 May 2004) [Blakeney, “Trends”].

⁸⁰ Anthony Taubman, “Genetic Resources” in Silke Von Lewinski, *Indigenous Heritage and Intellectual Property: Genetic Resources, Traditional Knowledge and Folklore* (Bedfordshire: Kluwer Law International, 2009) at 205.

⁸¹ *Ibid.*

communities – or does it privilege individual rights over the collective interests of the community? Can IP bolster the cultural identity of ILCs, and give them greater say in the management and use of their TK? Has the IP system been used to misappropriate TK, failing to protect the interests of ILCs? What can be done – legally, practically – to ensure that the IP system functions better to serve the interests of traditional communities?⁸²

The major challenge to efforts to extend legal protection to TK relates to difficulties over how to categorize TK in an appropriate protective legal regime under the IP framework. The appropriation of TK through IPR systems usually takes the form of the establishment of rights by external parties, the physical element of a biological resource usually forming the basis for “invention.” A biological resource within which TK is embedded is sometimes understood in its material sense.⁸³ Biological resources are considered objects of tangible property protection under a traditional property rights regime and, thus, inappropriate subject matter for IPRs protection.

The material legally categorized as a “biological resource”, and thus, an object of the traditional property regime is, however, at once, “multifaceted and polyvalent,” as it is “perceived in dramatically different ways, and valued not merely differently but according to altogether different value systems.”⁸⁴ In the worldview of many ILCs, the physical material is valued for its immediate attributes (such as a seed that serves as food

⁸² See WIPO, *Traditional Knowledge: Key to a Diverse and Sustainable Future, Intellectual Property and Traditional Knowledge*, Booklet No. 2, online: WIPO < http://www.wipo.int/freepublications/en/tk/920/wipo_pub_920.pdf > at 1-2 [WIPO, “Diverse”].

⁸³ See Chapter 2 Section 2.3, below, for discussion on the relationship between TK and the material sense of biodiversity.

⁸⁴ *Supra* note 80 at 205; also see Brendan Tobin, “Redefining Perspectives in the Search for Protection of Traditional Knowledge: A Case Study from Peru” (2001)10:1 RECIEL at 54; Krystyna Swiderska, “Protecting Traditional Knowledge: A framework based on Customary Laws and Bio-Cultural Heritage” (Paper Delivered at the International Conference on Endogenous Development and BioCultural Diversity, Geneva, 3-5 October 2006) at 54.

to satisfy hunger, or a leaf that delivers compositions to provide medicinal effects). More importantly, ILCs value the resource “for its intangible information content (the seed’s capacity to pass on the information necessary to grow a crop, or the plant’s coding for a therapeutic protein).”⁸⁵ Beyond its information content, the physical material of the biological resource usually has cultural and aesthetic (and spiritual) value to most ILCs. In this context, the resource is technically known as “biodiversity.”⁸⁶ Biodiversity embodies “valuable information” and cultural values, and thus, ILCs perceive it as a form of intangible asset.⁸⁷

As an intangible asset, the protection of IP should ideally avail biodiversity and the TK integrated with it. IPRs protect intangible subject matter, and being intangible, biodiversity and its underlying knowledge systems may ordinarily be considered matters for IP protection. However, it has become difficult to envisage IP protection for TK and biodiversity under existing IPRs regimes.⁸⁸ This reinforces the view that TK systems are found in social and cultural contexts that are distinct from the kinds of subject matter that modern IPRs are designed to protect.⁸⁹

⁸⁵ *Ibid.* at 206.

⁸⁶ See Chapter 2 Sections 2.3 & 2.4.

⁸⁷ *Ibid.*

⁸⁸ See Chapter 3 Section 3.2.2.2, below, for discussion of the incongruity between TK and intellectual property.

⁸⁹ See Sonia Smallacombe, *Scoping Project on Aboriginal Traditional Knowledge*, Desert Knowledge CRC Report Number 22 (2007) at 29.

1.3 SCOPE OF THE STUDY

The thematic focus of the present inquiry spans the areas of IP, TK, and biodiversity. Other policy contexts in which the protection of TK is discussed – such as in relation to preserving cultural heritage, and human rights – are not discussed in this thesis. While mindful of the diversity in the categories of knowledge forms embedded within “traditional knowledge”, the specific theme of inquiry here is limited to tangible products of TK in agriculture, mainly knowledge in agriculture for food. In fact, many ILCs do not distinguish between resources for food, medicine, and health; for most, foods are medicines and vice versa.⁹⁰ Non-agricultural products of TK are excluded from the scope of the present inquiry.

Although the interplay of the IP regime with TK and biodiversity forms the mainstay of this research, GIs, as related to TKBAPs, are the specific themes of inquiry. Given the various means of protecting GIs in different jurisdictions, the analysis looks into GIs in their varied forms.⁹¹ In the context of current debates in the World Trade Organization’s Trade-Related Aspects of Intellectual Property (TRIPS) Council, however, the scope of analysis regarding GIs is delimited to elucidating existing regulatory frameworks and to

⁹⁰ See Darrell Addison Posey, *Cultural and Spiritual Values of Biodiversity* (Nairobi: United Nations Environment Program, 1999) at 10.

⁹¹ See Chapter 2 Section 2.7 & Chapter 5 Section 5.5, below, for discussion of the nature and form of GIs and of the context they are addressed in the thesis.

addressing the issues on the current negotiation agenda regarding the extension of the higher level of GIs protection to all products. The thesis does not necessarily address the desirability of establishing a multilateral register system of GIs that is currently being considered in the negotiations.⁹² Beyond these limitations, however, relevant issues are addressed in assessing the applicability of GIs for protecting TKBAPs.

1.4 RESEARCH METHODOLOGY

The analysis in this thesis uses a combination of doctrinal, comparative, and interdisciplinary methods of legal research. Given the meta-legal questions raised, methods rooted in economic sociology and development economics are also utilized.

Doctrinal method comes in handy for elucidating the international legal framework to protect TK, and in describing the current state of the law of GIs in international law and in some domestic jurisdictions. This analysis involves a review of the relevant international treaties, national legislation, policy guidelines, and jurisprudence. It encompasses legal and institutional issues related to GIs in national and international contexts, and a normative consideration of IP policy in general.

I adopt a comparative approach to examine existing and proposed modalities for protecting TK and TKBAPs in various forums of international law-making. The same

⁹² The current negotiation regarding GIs in the WTO clusters the issue into two distinct agenda: The first relates to extending “additional protection” accorded to wines and spirits to other agricultural goods. The second involves the establishment of a multilateral GIs register system in the WTO to ensure better protection. See Konrad von Moltke, “After Doha—Assessing the outcomes of the WTO Fourth Ministerial Conference” *IISD Commentary* (April 2002) at 1 online: IISD <<http://www.iisd.org>>. While the first agenda lies at the center of this inquiry, the agenda on the desirability and possibility of extending the multilateral register for GIs-bound products is dealt with only as part of the assessment of the practicality of introducing GIs as feasible instruments to protect TKBAPs. Independent analysis of the second agenda requires a depth of discussion that could go beyond the parameters of this thesis.

approach is used to examine the protection of GIs in different legal systems, mainly, those of the European Union (EU), the US and some developing countries.

The thesis discusses GIs with reference to the social, cultural, environmental, and economic contexts of their adoption as tools to protect TKBAPs. The conventional theoretical bases of IP may not provide justifications for the use of GIs to protect TKBAPs. In general, theories in the field of IP do not account for the contributions of TK systems to social, cultural, environmental and economic objectives. Even if few theories do, their application may be limited in regard to GIs. This is because GIs constitute a new breed of IP instruments to be linked to the protection of TK. Thus, the thesis moves beyond the confines of conventional IP theories to establish sufficient and appropriate justifications that support the recognition of GIs as proper instruments to protect TKBAPs.

Consequently, I examine relevant theoretical literature in the fields of rural and economic sociology, with references to development economics as well. Hence, methodologically, this thesis falls within the framework of interdisciplinary scholarship. My forays into sociology and economics do not arise from expertise in those fields, nor indeed, in the social science disciplines in general. I approach the analysis as a legal scholar interested in assessing the potential of GIs as a means to overcome the shortcomings of the current IP regime and to protect the knowledge systems of ILCs in the specific context of TKBAPs.

The approach is not to promote GIs as solutions to the socio-cultural, environmental, and economic problems associated with the lack of protection for TK. The research

investigates the circumstances by which GIs may address some of the concerns that the noticeably alarming exploitation of TK in the global economic order brings. The inquiry adopts an instrumentalist perspective of IP to assess the role of GIs in responding to challenges in a specific category of TK: Challenges in relation to TKBAPs.⁹³

1.5 THEORETICAL FRAMEWORK

Due to the cultural nature of TK and TKBAPs, assessing the instrumentality of GIs as a composite modality to protect TKBAPs requires consideration within a frame of analysis that accommodates the social and historical contexts of cultural proprietorship in the IP framework. The thesis aspires to achieve this by expanding the existing justifications for GIs protection to provide proper philosophical foundations for GIs-based proprietary claims to the rights of ILCs.

The existing justification for the protection of GIs rests on an economic theory and its utilitarian view of IP.⁹⁴ The first strand of justification identifies with the basis for protecting trademarks: “[T]hey are protected so as to reduce [confusion] and limit

⁹³ The word “instrumentality” is consistently used in this thesis to refer to inquiry of the validity of GIs as instruments for protecting TKBAPs through assessment of their effectiveness and success in responding to the needs and interests of ILCs. The thesis adopts Webster’s description of “instrumentalism” as “a pragmatic theory that ideas are instruments that function as guides of action, their validity being determined by the success of the action.” See “Instrumentalism” in *Webster’s Two New College Dictionary* (Boston: 3rd ed, Houghton Mifflin Harcourt, 2005).

⁹⁴ See Cerka Bramley, Estelle Biénabe & Johann Kirsten, “The Economics of Geographical Indications: Towards A Conceptual Framework for Geographical Indication Research in Developing Countries” (2007) 46 *Agrekon* 109; Ramona Teuber, Sven Anders & Corinne Langinier, “The Economics of Geographical Indications : Welfare Implications,” Structure and Performance of Agriculture and Agri-products Industry Network /Working paper #2011-6 (2011); Michel Petit & Hélène Ilbert, “Are Geographical Indications a Valid Property Right? Global Trends and Challenges” (2009) 27:5 *Development Policy Review* 503-528.

consumers' search costs in the marketplace.”⁹⁵ GIs protection is also justified on “Shapiro’s model on reputation”⁹⁶ which is concerned with “the decision of a firm regarding the quality of products to produce with a view to maximising profits, assuming perfect competition but imperfect consumer information.”⁹⁷ Secondly, therefore, GIs are protected because they serve as incentives for businesses to produce consistently high-quality goods and services with a view to build their reputation.

Existing rationales for the protection of GIs, therefore, emphasize the economic role of GIs’ contribution to minimize the “search costs of consumers.”⁹⁸ They adopt a utilitarian interpretation of benefits that accrue to owners of GIs “as incentives for product qualities and reputation linked to a precise geographical area.”⁹⁹ Applied to TKBAPs, the rationales do not leave room for considering the cultural values inherent in the identification of such products; they neglect cultural components embedded in the traditional agricultural economy of ILCs.¹⁰⁰

⁹⁵ Raustiala & Munzer, *supra* note 18 at 352 citing W. M. Landes and R. A. Posner, *The Economic Structure of Intellectual Property Law* (Cambridge: Harvard University Press, 2003).

⁹⁶ See OECD, *Appellations of Origin and Geographical Indications in OECD Member Countries: Economic and Legal Implications*, Working Party on Agricultural Policies and Markets of the Committee for Agriculture Joint Working Party of the Committee for Agriculture and the Trade Committee, COM/AGR/APM/TD/WP (2000), para.9.

⁹⁷ London Economics, “Evaluation of the CAP Policy on Protected Designations of Origin (PDO) and Protected Geographical Indications (PGI): Final Report” (November 2008) online: European Commission <http://ec.europa.eu/agriculture/eval/reports/pdopgi/report_en.pdf> at 122.

⁹⁸ Irene Calboli, *Expanding the Protection of Geographical Indications of Origin under TRIPS: Old Debate or New Opportunity?* Marquette University Law School Legal Studies Research Paper NO. 06-19 (2006) at 197.

⁹⁹ *Ibid.*

¹⁰⁰ Given the cultural component of agricultural production, for example, Alyward notes that “treating an agricultural product simply as a saleable commodity is to neglect its highly valuable cultural and anthropological dimensions and the role it plays in the binding of its producer communities.” David

Given the holistic nature of TK, GIs can and should serve as instruments of culturally sensitive measures to satisfy the economic needs of ILCs, only if frameworks for cultural consideration supplement the purely economic explanations currently provided for their utility. GIs are mostly associated with “cultural heritage” in the domestic frameworks of most countries, and they are applied to items of cultural sensitivity to most ILCs.¹⁰¹ Thus, the instrumentality of GIs to protect TKBAPs should be grounded in a theory that explains the interdependence and interaction between cultural and economic factors.

The thesis aspires to provide a framework for the recognition of the cultural dimensions of products protected through GIs under the ambit of the social-planning theory of IP.¹⁰² To accomplish this, the thesis explores the theories of cultural economy and embeddedness in the context of an emerging rights-based approach to development.

The theory of cultural economy has its origin in “the sociological thought about the relationship between economy and culture.”¹⁰³ Considered as “a new epistemic approach

Aylward, “Towards a Cultural Economy Paradigm for the Australian Wine Industry” (2008) 26:4 Prometheus 373 at 379; also see Chapter 2 Section 2.4 & 2.6, below, for more on the role of culture in the traditional agricultural production system of ILCs

¹⁰¹ See Chapter 5 Section 5.5.3, below, for a more detailed analysis of the rationales for GIs protection on grounds of cultural protection. In a memo titled “Why Do Geographical Indications Matter to Us?” for example, the EC remarked that “GIs are key to EU and developing countries cultural heritage, traditional methods of production and natural resources.” See European Commission, “Intellectual Property: Why Do Geographical Indications Matter to Us?” Background Note 01/04 (2003) online: <http://ec.europa.eu/trade/issues/sectoral/intell_property/argu_en.htm>.

¹⁰² See Chapter 5 Section 5.10, below, for a more detailed analysis of the application of GIs on grounds of “just and attractive society” under the social-planning theory perspective.

¹⁰³ Often, researchers in economic sociology and cultural geography as well as scholars in the field of economics use the term “cultural economy” interchangeably with terms representing related concepts, such as “creative economy” and “cultural industries.”) For the use of the term in the field of geography, see A.J. Scott, *The Cultural Economy of Cities* (London: Sage, 2000); Paul du Gay & Michael Pryke, eds, *Cultural Economy: Cultural Analysis and Commercial Life* (London: Sage, 2002).

to the study of social relations,”¹⁰⁴ the theory of cultural economy is described as “an attempt to revalorize place through its cultural identity.”¹⁰⁵ It is also described as a theoretical reflection of “economic activities which are explicitly based on locally embedded resources, skills and knowledge.”¹⁰⁶ While combining two words that represent arguably distinct territories (i.e. “culture” and “economy”), the term “cultural economy” explains “the cultural construction of economic processes and patterns.”¹⁰⁷ The cultural economy theory “examines economies as they are embedded in and constructed by cultural systems that are larger and more powerful than particular individuals and particular historical moments.”¹⁰⁸

The theory of embeddedness has its roots in the works of Karl Polanyi, a critic of traditional economic thought who, in his most influential book on the subject, *The Great Transformation*, argues that “the human economy ... is embedded and enmeshed in institutions, economic and non-economic. The inclusion of the noneconomic is vital.”¹⁰⁹

Theorizing on the concept of “embeddedness,” Polanyi notes, “free market capitalism

¹⁰⁴ Moya Kneafsey, Brian Ilbery & Tim Jenkins, “Exploring the Dimensions of Culture Economies in Rural West Wales” 41:3 *Sociologia Ruralis* 296.

¹⁰⁵ Christopher Ray, “Culture, Intellectual Property and Territorial Rural Development” (1998) 38:1 *Sociologia Ruralis* at 3.

¹⁰⁶ *Ibid.*

¹⁰⁷ Jane Dixon, “A Cultural Economy Model for Studying Food Systems” (1999) 16 *Agriculture and Human Values* 152 at 156.

¹⁰⁸ R. Halperin, *Cultural Economies: Past and Present* quoted in Jane Dixon, “A Cultural Economy Model for Studying Food Systems” (1999) 16 *Agriculture and Human Values* 152 at 156; Sarah Hinde & Jane Dixon, “Reinstating Pierre Bourdieu's Contribution to Cultural Economy Theorizing” (2007) 43 *Journal of Sociology* 401 at 402.

¹⁰⁹ Karl Polanyi, *The Great Transformation* quoted in C. Clare Hinrichs, “Embeddedness and Local Food Systems: Notes on Two Types of Direct Agricultural Market” (2000) 16:3 *Journal of Rural Studies* 295 at 296; see also Andrew Jones, “Theorizing Practice in Economic Geography: Foundations, Challenges, and Possibilities” (2011) 35 *Progress in Human Geography* 366-392.

must be subject to social and environmental constraints if it is not to destroy the basis of the economy itself.”¹¹⁰ Contrary to the belief among political economists that economic and social relations are separate phenomena and that analysis of individual behaviour can easily be based on economic terms, the theory of embeddedness holds that “the behaviour and institutions to be analyzed are so constrained by ongoing social relations that to construe them as independent is a grievous misunderstanding.”¹¹¹

The thesis utilizes these thoughts in the context of a rights-based approach to development. This approach challenges “market-driven orthodoxy,... [and] brings human rights standards to bear upon the practices of international financial institutions, trade regimes, and corporations, as well as governments.”¹¹² Ordinarily, the concepts of development and human rights exist independently. Development goals used to focus on “material conditions that allow people to benefit from economic processes,” whereas the goals of human rights are construed as “normative constraints on power relations to ensure human dignity and elimination of repressive and oppressive processes.”¹¹³

A human rights-based approach to development integrates the two by providing a framework of human development “that is normatively based on international human

¹¹⁰ Elizabeth Barham, “Translating Terroir: The Global Challenge of French AOC Labelling” (2003) 19:2 *Journal of Rural Studies* 127 at 130 quoting *ibid.* [Barham, “Translating”]; see also Marianne Penker, “Mapping and Measuring the Ecological Embeddedness of Food Supply Chains” (2006) 37 *Geoforum* 368-379; Martin Hess, “‘Spatial’ Relationships? Towards A Reconceptualization of Embeddedness” (2004) 28 *Progress in Human Geography* 165-186.

¹¹¹ Mark Granovetter, “Economic Action and Social Structure: The Problem of Embeddedness” (1985) 91 *American Journal of Sociology* 481 at 482.

¹¹² Aylwin et al, *supra* note 7 at 8.

¹¹³ See Stephen P. Marks, “Health, Development, and Human Rights” in Anna Gatti & Andrea Boggio, eds, *Health and Development: Toward a Matrix Approach* (Hampshire: Palgrave Macmillan, 2008) at 120.

rights.”¹¹⁴ In 1979, the Secretary-General of the United Nations (UN) Commission on Human Rights succinctly described the relationship between human rights and development as follows:

[T]he central purpose of development is the realization of the potentialities of the human person in harmony with the community; the human person is the subject not the object of development; both material and nonmaterial needs must be satisfied; respect for human rights is fundamental; the opportunity for full participation must be accorded; the principles of equality and non-discrimination must be respected; and a degree of individual and collective self-reliance must be achieved.¹¹⁵

Entrenched in the policy framework of human rights norms as a matter of “general consensus,” the rights-based approach to development continues to influence policy dialogue and academic discourse in the development paradigm.¹¹⁶ Marks identifies seven ways in which human rights thinking is applied to development: the holistic approach; the rights (human rights) based approach; the social justice approach; the capabilities approach; the right to development approach; the responsibilities approach; and the

¹¹⁴ United Nations High Commissioner for Human Rights, *Frequently Asked Questions on A Human Rights-Based Approach to Development Cooperation* (New York: United Nations, 2006) at 15.

¹¹⁵ Paul Gready & Jonathan Ensor, *Reinventing Development? Translating Rights-Based Approaches from Theory into Practice* (London: Zed Books, 2005) 14-28 at 18.

¹¹⁶ In outlining the definition of development in the manner indicated, the Secretary General of the UN Commission on Human Rights remarked that the statement represents “a general consensus” on the meaning of development, *Ibid*; see David Weissbrodt & Kell Schoff, “Human Rights Approach to Intellectual Property Protection: The Genesis and Application of Sub-Commission Resolution 2000/7” (2004) 5 Minnesota Intellectual Property Law Review 1; Andrea Cornwall & Celestine Nyamu-Musembi, “Putting the ‘Rights-Based Approach’ to Development into Perspective” (2004) 25:8 Third World Quarterly 1415-1437.

human rights education approach.¹¹⁷ In terms of the capabilities approach under which IP largely falls, the goal of development is to expand human capabilities.¹¹⁸

The concept of development as capacitation gained widespread acceptance following Amartya Sen's work on capacities and entitlements.¹¹⁹ The idea of "enlargement of peoples' choices" is the core definition of development in the Human Development Reports of United Nations Development Program (UNDP).¹²⁰ In this view, the point of development is that, above all, it is enabling.¹²¹ Amartya Sen notes that "[l]ife is more than making a living, economic development is in the end about enjoying life."¹²²

Under the capabilities paradigm, the concept of entitlement accounts for the link between human rights and development. Amartya Sen's entitlement approach draws attention to "those things that a person is in control of, or has command over, in life" to

¹¹⁷ Stephen P. Marks, "The Human Rights Framework for Development: Seven Approaches" in Arjun Sengupta et al, *Reflections on the Right to Development* (New Delhi: Sage, 2005) at 33.

¹¹⁸ See Margaret Chon, "Intellectual Property and the Development Divide" (2006) 27 *Cardozo L Rev* 2821 at 2866ff; Madhavi Sunder, "Intellectual Property and Development as Freedom" in Neil Weinstock Netanel, *The Development Agenda: Global Intellectual Property and Developing Countries* (London: Oxford University Press, 2009) 453-473.

¹¹⁹ See Jan Nederveen Pieterse, *Development Theory: Deconstructions/Reconstructions* (London: Sage Publications, 2001) at 6; Amartya Sen, *Development as Freedom* (London: Alfred A. Knopf, 1999).

¹²⁰ The UNDP Human Development Report provides: "...human development shares a common vision with human rights. The goal is to human freedom. And in pursuing capabilities and realizing rights, this freedom is vital. People must be free to exercise their choices and to participate in decision-making that affects their lives. Human development and human rights are mutually reinforcing, helping to secure the well-being and dignity of all people, building self-respect and the respect of others." UNDP, *Human Development Report* (New York: Oxford University Press, 2001) at 9.

¹²¹ See Pieterse, *supra* note 119 at 6.

¹²² Amartya Sen, "What's the Use of Music? The Role of the Music Industry in Africa" (Prepared for the World Bank–Policy Sciences Center, Workshop on the Development of the Music Industry in Africa, Washington, D.C., June 20–21, 2000) online: <http://www.worldbank.org/research/trade/africa_music2.htm>.

eventually contribute to the expansion of human autonomy and choice.¹²³ Thus, development is measured based on an individual's ability to choose and achieve a desired lifestyle through a balancing of freedoms that range from "basic needs, such as the right to life and health, to more expansive freedoms of movement, creative work, and participation in social, economic, and cultural institutions."¹²⁴ On this reasoning, rights-based development requires the recognition of "rights to take part in cultural life, to enjoy the benefits of progress in the arts and sciences, to have minority and indigenous cultures protected, and to preserve and protect cultural heritage..."¹²⁵

The protection of GIs as a means of empowering ILCs to participate in the global economy is justified in this thesis through the framework of the social planning theory of IP. The thesis argues that the protection of TKBAPs through GIs contributes to the achievement of "a just and attractive culture," that is, "a just and attractive society,"¹²⁶ by empowering ILCs to choose their way of life in cultural participation. The establishment of GIs rights enables ILCs to engage in the creation, development and marketing of the results of their TK as part of exercising their cultural life and as a means of maintaining their survival and group identity.¹²⁷

¹²³ See *supra* note 115 at 19.

¹²⁴ Sunder, "Invention," *supra* note 4 at 28.

¹²⁵ Aylwin et al, *supra* note 7 at 6.

¹²⁶ Oguamanam, "Beyond Theories," *supra* note 14 at 27.

¹²⁷ See Madhavi Sunder, "IP³" (2006) 59:2 Stanford Law Review 257; Anthony Taubman, "Thinking Locally, Acting Globally: How Trade Negotiations over Geographical Indications Improvise Fair Trade Rules" (2008) Intellectual Property Quarterly 231.

Only recently has the proposition of GIs as a means of protecting TK become the focus of literary attention. Even so, contemporary scholarship is divided on the question whether GIs can be used as a legal framework to protect TK and TK-based resources. The discussion in the following Section reviews this literature to identify the gap it leaves in its consideration of the issue, and which this thesis addresses.

1.6 THE INSTRUMENTALITY OF GEOGRAPHICAL INDICATIONS IN PROTECTING TRADITIONAL KNOWLEDGE: LITERATURE REVIEW

The inquiry as to the instrumentality of GIs for purposes of protecting TKBAPs is conducted in this thesis in light of the current international legal framework that governs the protection of GIs.¹²⁸ The scope and extent of protection that GIs afford determines whether their protection covers TK and TK-related resources. The agenda on the scope and extent of GIs' protection in current discussion and in negotiations in the World Trade Organization revolves around the initial treatment of GIs under the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS Agreement). The main question relates to extending "additional protection" accorded to wines and spirits to other agricultural goods.¹²⁹

As the discussion in Chapter Five of the thesis shows, current outlooks regarding this and related questions is divided between two opposing views: Proponents of a strong and broad GIs protection, mainly the European Council, on the one hand, and on the other,

¹²⁸ The protection of GIs is recognized at the international level mainly through two international agreements administered by the WTO and the WIPO, namely, the TRIPS Agreement and the Lisbon Agreement. See TRIPS Agreement, *supra* note 13, Section 3; *The Lisbon Agreement for the Protection of Appellations of Origin and their International Registration*, Oct. 31, 1958, as last revised 1 Jan. 1994.

¹²⁹ See Chapter 5 Section 5.4.1.

other countries that seek a narrow and flexible standard of GIs protection. The former seek strong GIs protection for a wide range of agricultural and other goods, whereas the latter oppose according additional protection other than what the TRIPS Agreement already provides for wines and spirits.¹³⁰

It is in this context that the discourse on the instrumentality of GIs to protect TK arose. Among previous attempts to assess the applicability of GIs to protect TK, a leading academic study by Kur and Knaak notes that:

[T]he indication for a product is the subject matter of this protection, not the product itself. For this reason tradition-based innovations and creations, as indicated in the WIPO Report on fact-finding missions on Intellectual Property and TK, cannot enjoy protection *per se* by means of geographical indications. The Protection of GIs may apply to signs indicating these innovations and creations.¹³¹

This view highlights the issue as to the nature of protection GIs afford: Does the protection in GIs extend to the denotation of a geographic location, or does it extend to the connotation of some or other uniqueness such as quality, reputation, or characteristics as well? If GIs simply denote a geographical location, nothing more than the ordinary

¹³⁰ See Office of the United States Trade Representative (USTR), “US and Other Trade Partners Present Positions and Proposals to Prevent Unauthorized Use of Geographic Names”, USTR Press Release 20 September 2002 online: <http://www.ustr.gov/Document_Library/Press_Releases/2002/September/US_Other_Trade_Partners_Present_Positions_Proposals_to_Prevent_Unauthorized_Use_of_Geographic_Names.html>; Trade Negotiations Committee, *Draft Modalities for TRIPS Related Issues: Communication from Albania, Brazil, China, Colombia, Ecuador, the European Communities, Iceland, India, Indonesia, the Kyrgyz Republic, Liechtenstein, the Former Yugoslav Republic of Macedonia, Pakistan, Peru, Sri Lanka, Switzerland, Thailand, Turkey, the ACP Group and the African Group* (19 July 2008), TN/C/W/52.

¹³¹ Annette Kur & Roland Knaak, “Protection of Traditional Names and Designations” in Silke von Lewinski, ed., *Indigenous Heritage and Intellectual Property* (The Hague: Kluwer Law International, 2004) at 227.

trademark regime would be required to protect the rights of individuals who want their products to be identified by the geographic sign or name.¹³²

Kur and Knaak are also pessimistic about the potential of GIs to protect TK. They assert:

[A]s to geographical indications of indigenous communities, the general provisions of the TRIPS Agreement are clearly not sufficient to offer adequate protection. The general protection pursuant to the TRIPS Agreement is too limited in its scope because ... it depends on the opinions of the public in the country where protection is claimed. Under this rule, GIs of indigenous communities being unknown as such to the public of certain countries are unprotected in those countries.¹³³

According to Blakeney, this assessment makes assumptions relating to “the ignorance of persons about indigenous communities.”¹³⁴ Contrary to this assumption, however, Blakeney points out the growth of “ethno-marketing” as a testimony to increased awareness – among consumers – of “indigenous communities and what they have to offer” to the global economy.¹³⁵ However, Blakeney, Kur and Knaak all agree that the

¹³² Later parts of the thesis closely examine the significance of the difference between the connotation and denotation roles of GIs as part of the assessment of the instrumentality of GIs to protect TK. See Chapter 2 Section 2.8.

¹³³ *Supra* note 131 at 233 at 234.

¹³⁴ See Michael Blakeney, *Intellectual Property Rights and Food Security* (Oxfordshire: CAB International, 2009) at 362 [Blakeney, “Food Security”].

¹³⁵ *Ibid.* “ethnic market” refers to market that “represents different cultures which cannot be ignored or gathered in one standardized and global market.” Effective ethnic marketing is formulated through an analysis which includes “demographic, life styles, culture, education and employment.” See Sonny Nwankwo et al, “The Marketing Challenge of Multiculturalism: An Exploratory Study” in C.P. Rao, *Marketing and Multicultural Diversity* (Hampshire: Ashgate Publishing, 2006) at 222.

problem of non-publicity about “GIs of indigenous communities” can easily be “overcome by the establishment of a register for GIs.”¹³⁶

Another view against the use of GIs to protect TK arises from the strong influence that market forces in the global economy have on cultural activities. Due to this, doubts arise as to the effectiveness of GIs to serve as instruments of cultural protection.¹³⁷ In line with this perspective, Broude contends that, first, market forces involved in the agri-food sector are “so pervasive that GIs cannot in and of themselves, as legal agents, prevent market influence on local culture, leading to degrees of cultural transformation and international cultural homogenization.”¹³⁸ He notes that in the fields of agricultural production and consumption, GIs cannot withstand the cultural influence of markets, concluding that; “it is not GIs that uphold culture, but rather culture that upholds GIs.”¹³⁹ Even in circumstances where GIs “signify local idiosyncratic culture, reflecting a deeply inbred relationship between society and a uniquely local food and wine product,” Broude argues that the local identity in GIs “represents legally ‘invented traditions’ and ‘imagined local communities’.”¹⁴⁰

¹³⁶ *Ibid.*

¹³⁷ See Anselm Kamperman Sanders & Christopher Heath, *New Frontiers of Intellectual Property Law: IP and Cultural Heritage - Geographical Indications - Enforcement – Overprotection* (Oxford: Hart Publishing, 2005); Michelle Agdomar, “Removing the Greek from Feta and Adding Korbel to Champagne: The Paradox of Geographical Indications in International Law” (2008) 18 *Fordham Intell Prop Media & Ent LJ* 541; also see Michel Vincent, “Extending Protection at the WTO to Products Other Than Wines and Spirits: Who Will Benefit?” (2007) 8 *Estey Centre Journal of International Law and Trade Policy* 57-68.

¹³⁸ Tomer Broude, “Taking ‘Trade and Culture’ Seriously: Geographical Indications and Cultural Protection in the WTO Law” (2005) 26 *U Pa J Int’l Econ L* 623 at 649.

¹³⁹ *Ibid.*

¹⁴⁰ “Invented traditions” refer to “traditions actually invented, constructed and formally instituted and those emerging in a less easily traceable manner within a brief and traceable period - a matter of a few years

Secondly, it is argued that the primary motive for GIs based agricultural strategy (for example, the French wine production tradition through the system of Appellations of Origin) has, historically, been economic.¹⁴¹ GIs are considered mere instruments of international trade policy and as such – the argument runs – TK-related rationales for “the protection of culture does not trump international norms in the area of trade.”¹⁴² On this ground, Broude urges negotiators in the WTO to “recognize and treat GIs for what they are: Legal tools for granting commercial advantages to certain products, sectors, and regions.”¹⁴³ Thus, GIs are considered mere economic tools that cannot serve cultural policy related to the protection of TK.

Raustiala & Munzer advance an argument against the extension of GIs to TK related agricultural products based on a philosophical rationale about GIs protection. In an assessment of the broader roles that GIs are meant to serve in protecting TK, they observe that:

[W]hile economic concerns plainly loom large in the debate over GIs, the effort to entrench GI protection in international law also draws strength from more diffuse concerns about authenticity, heritage and locality in a rapidly integrating world. To assert the necessity of GI protection is, in part, to assert the importance of local culture and tradition in the face of ever-encroaching globalization. The GI question is as a result linked to larger, politically sensitive debates about the proper level of protection for farmers and rural

perhaps... ‘Invented tradition’ is taken to mean a set of practices, normally governed by overtly or tacitly accepted rules and of a ritual or symbolic nature, which seek to inculcate certain values and norms of behaviour by repetition, which automatically implies continuity with the past... however, insofar as there is such reference to a historic past, the peculiarity of ‘invented’ traditions is that the continuity with it is largely factitious;” see *ibid.* at 656 citing Eric Hobsbawm, “Introduction: Inventing Traditions” in Eric Hobsbawm & Terence Ranger, eds, *The Invention of Tradition* (Cambridge: Cambridge University Press, 1992) at 1-2.

¹⁴¹ Broude, *supra* note 138 at 674 nn. 149.

¹⁴² *Ibid.*

¹⁴³ *Ibid.*

communities, the degree to which international law ought to trench upon questions of culture and tradition, the necessity of intellectual property rights and, above all, the importance of economic competition.¹⁴⁴

Because GIs are “*geographic* indications” (fixed natural attributes), they argue, “human innovation” and “incremental improvements” do not factor as rationales for a right which may be “debated in terms of ‘piracy’ and misappropriation” (i.e. a debate which presupposes the existence of property rights).¹⁴⁵ They argue, “property rationales grounded in moral rights or desert attributable to individuals ... suggest that individuals, not regions, ought to enjoy GIs.”¹⁴⁶ The more GIs rights are justified with reference to “human innovation, incremental improvements in quality, and the like,” the argument runs, “the less attributable the characteristics of the GI-protected good are to the local area.”¹⁴⁷ Thus, Raustiala & Munzer argue that GIs identify a geographic location with “natural features” instead of “human factors,” and as long as they are identified like this, “GIs closely resemble trademarks.”¹⁴⁸

Therefore, Raustiala & Munzer equate the scope of protection GIs should offer with that of trademarks. In this context, the authors find a heightened level of protection for GIs in existing legal frameworks unjustified. Consequently, they conclude that proposals to extend the protection of GIs to include TK and related resources are “unwarranted and

¹⁴⁴ Raustiala & Munzer, *supra* note 18 at 338-339.

¹⁴⁵ *Ibid.* at 352.

¹⁴⁶ *Ibid.*

¹⁴⁷ *Ibid.*

¹⁴⁸ *Ibid.*

... well beyond what any existing theory of property can support.”¹⁴⁹ They reject “the conceptual core of GIs,” that protection should be extended to address concerns about “authenticity, heritage, and locality in a rapidly globalizing world.”¹⁵⁰

In an optimistic assessment of the potentials of GIs to protect TK, however, Panizzon & Cottier observe that:

Traditional Knowledge (TK) and Geographical Indications (GIs) share a common element insofar as they both protect accumulated knowledge typical to a specific locality. While TK expresses the local traditions of knowledge, GIs stand for specific geographical origin of a typical product or production method. GIs and TK relate a product (GIs), respectively a piece of information (TK), to a geographically confined people or a particular region or locality.¹⁵¹

They point out that GIs “may substitute for IP protection of TK” in circumstances when “even a *sui generis* right may not provide sufficient protection.”¹⁵²

In his book, *Intellectual Property Rights and Food Security*, Blakeney also notes that the protection of GIs has gained a certain moral authority that weighs in favour of developing countries that seek “the freedom to exploit their available knowledge”, in light of “the dominance of industrialized countries regarding access to knowledge, medicines

¹⁴⁹ *Ibid.* at 339-340.

¹⁵⁰ *Ibid.*

¹⁵¹ Thomas Cottier & Marion Panizzon, “Legal Perspectives on Traditional Knowledge: The Case for Intellectual Property Protection” (2004) 7 JIEL 371 at 378.

¹⁵² *Ibid.* at 32.

and the distribution of transgenic plant products.”¹⁵³ In a separate contribution with G. Evans, Blakeney remarks that:

[I]t is a matter of historical irony that notwithstanding the ancient provenance of GIs, current developments in the institution are a local reaction to the industrialization and globalization of agricultural production, where the global market place provides opportunities for the diversification of agricultural products and foodstuffs.¹⁵⁴

Blakeney points to a recent dispute that involved Basmati – the Indo-Pakistani traditional rice product – over which a Texas based multinational company, RiceTec, acquired patent rights on Basmati strains and agricultural techniques that include an exclusive marketing of the resulting product under the brands, Taxmati, Kasmati, and Jasmati.¹⁵⁵ He laments that the dispute would have easily been resolved “had GIs regime been in place in the countries in which protection for these brands was sought.”¹⁵⁶ In an assessment of the potential benefits of GIs in light of biotechnological advances in life sciences, which have been criticised for their negative effect on biodiversity resources, he observes that “GI systems contribute to the preservation of natural resources [by]

¹⁵³ Blakeney, Food Security, *supra* note 134 at 184.

¹⁵⁴ Michael Blakeney & G. Evans, “The Protection of Geographical Indications after Doha: Quo Vadis?” (2006) 9 JIEL 575 at 575-576.

¹⁵⁵ To read about the “Basmati incident,” see Jamil Uzma, “Biopiracy: The Patenting of Basmati by RiceTec” Publication of the Commission on Environmental, Economic and Social Policy-South Asia & Sustainable Policy Development Institute (October 8 1998), online: <www.iucn.org/themes/ceesp/publications/art-mono/basmati.doc>.

¹⁵⁶ Michael Blakeney, “Proposals for the International Regulation of Geographical Indications” (2001) 4 J World Intell Prop 629 at 647 [Blakeney, “Proposals”].

fostering agricultural policy,” thereby, offering “the potential of ‘appropriate flanking policies’.”¹⁵⁷

Biber-Klemm, et al, outline a number of issues on the link between GIs and TK, while noting the “limited discussion” in the TRIPS Council “with regard to the use of GIs as a tool for the protection of traditional knowledge.” They conclude that “from the perspective of TK, GIs are of specific interest.”¹⁵⁸ Similarly, Taubman, Director of IP Division at the WTO, affirms that:

[R]ecognizing the past cumulative innovation and distinctive know-how embedded in traditional products, GIs forge a link between the conventional mainstream trade interests associated with agricultur[al] commodities, contemporary conceptions of a ‘knowledge economy’, and growing recognition of TK as a distinctive element of the very personality of communities.¹⁵⁹

As he puts it, “GIs, uniquely in IP law, unite global protection systems with an intrinsically, necessarily, localized basis of protection, linking cultural diversity and the local environment with global markets: thinking locally, acting globally.”¹⁶⁰ Noting that “the current GI debate has an important cultural side,” Chesmond similarly argues that “the protection of GIs does constitute protection of culture on the grounds of tradition,

¹⁵⁷ Blakeney, “Food Security”, *supra* note 134 at 186, quoting Susette Biber-Klemm et al, “New Collective Policies” in Susette Biber-Klemm and Thomas Cottier, eds, *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (Wallingford: CABI, 2006) at 187.

¹⁵⁸ Susette Biber-Klemm et al, “New Collective Policies” in Susette Biber-Klemm and Thomas Cottier, eds, *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (Wallingford: CABI, 2006) at 251.

¹⁵⁹ *Ibid.*

¹⁶⁰ *Ibid.* at 235.

heritage, history, and identity.”¹⁶¹ She points out that “the most persuasive cultural protection argument in the GIs debate lies with the ability of food sources and products to play an important role in the construction of national identities.”¹⁶²

Gervais agrees that GIs may be useful protective tools “for at least some forms of traditional knowledge.”¹⁶³ Because “many traditional goods with a specific geographical origin” come from developing countries, he concludes that “the protection of geographical indications has normative heft in countries that are ‘TK-rich’.”¹⁶⁴

At an institutional level, the FAO Committee on Commodity Problems’ Intergovernmental Group has summarized the positive effects of properly managed GIs as:

[H]elping producers obtain premium prices for their products; providing guarantees to consumers regarding product quality; developing the rural economy; protecting local knowledge and strengthening local traditions; ... other wider economic and social benefits,... for example reduction of rural to urban migration, and the protection of rural environments and ecologies.¹⁶⁵

The foregoing shows that there is a burgeoning literature on the subject of GIs in general and that there is growing interest in assessing the potential of GIs to protect TK in

¹⁶¹ Rhonda Chesmond, “Protection or Privatisation of Culture? The Cultural Dimension of the International Intellectual Property Debate on Geographical Indications of Origin” (2007) 29 *European Intellectual Property Review* 379 at 387.

¹⁶² *Ibid.* at 383.

¹⁶³ Daniel Gervais, “Traditional Knowledge: Are We Closer to the Answers? The Potential Role of Geographical Indications” (2009) *ILSA J of Int and Comp Law* 551 at 552. [Gervais, “Are We Closer”]

¹⁶⁴ *Ibid.* at 563.

¹⁶⁵ FAO Committee on Commodity Problems, *Geographical Indications for Tea* (Intergovernmental Group on Tea, Eighteenth Session, Hangzhou, 14 – 16 May 2008) CCP:TE 08/5 at 2, online: <<ftp://ftp.fao.org/docrep/fao/meeting/013/k2020E.pdf>>.

particular.¹⁶⁶ Even so, most of the work fails to provide detailed analysis of the link between TK and GIs in the context of the diverse needs and expectations of ILCs. The literature reveals very little in the way of establishing foundations for proprietary claims in GIs to accommodate a broader role for IP in protecting TK through GIs. In addition, answering the question as to whether GIs can and should be utilized to protect TK necessarily grapples with the ideological divide between the US and the EU commentators on the purpose and philosophical foundations of GIs.¹⁶⁷ These weaknesses provide opportunities for the contributions that the analysis of this thesis is intended to make.

1.7 CONTRIBUTIONS OF THE THESIS

The thesis aspires to contribute to the body of substantive knowledge concerning the modalities of protecting TK, with a focus on the applicability of GIs to protect TK and TK-based products. Despite the general view that the protection of TK may somehow be achieved through IPR modalities,¹⁶⁸ the mass of literature on the subject focuses on modifications and amendments to the patent system or other regimes of the conventional

¹⁶⁶ Also, see Chapter 4 Section 4.8, below, for emerging interest in assessing the potential of GIs as modalities for protecting TK.

¹⁶⁷ For historical and underlying philosophical reasons, the EU supports comprehensive protection of GIs in international law, whereas the US and its allies (mainly Australia, Canada, and Argentina) oppose such protection and argue for limited recognition of GIs. See Chapter 5 Section 5.5.3, below.

¹⁶⁸ See Chapter 4 Section 4.6.5, below; also see Terri Janke, *Using Intellectual Property Tools to Protect Traditional Cultural Expressions/Traditional Knowledge Related Issues at Arts Festivals* (Presentation to Council for the Festival of Pacific Art, 31 March - 2 April 2008, Pago Pago); Carlos M Correa, *Traditional Knowledge and Intellectual Property: Discussion Paper* (Geneva: The Quaker United Nations Office, 2001)

IPRs to protect TK.¹⁶⁹ As a result, “[n]ot much attention has been paid to the role GIs might make in protecting TK.”¹⁷⁰ Raustiala & Munzer agree that “the conceptual underpinnings of GIs have not been rigorously examined” in the debates about their international protection.¹⁷¹ The thesis contributes to closing this gap, as the existing literature, though copious, is still thin on this aspect of the subject.

Nevertheless, the foregoing literature review reveals a recent surge of interest in the utility of GIs to protect TK. As will be shown in later parts of this work, a host of interest groups have called for a wide recognition and enforcement of GIs at international, regional, and national levels on the ground that this would help the protection of TK to benefit TK-rich countries and communities.¹⁷² Compounded by the introduction of national GIs legislation in many developing countries that hope to protect TK and benefit from it, these calls have created much enthusiasm about GIs.¹⁷³ Nevertheless, the

¹⁶⁹ See discussion on the range of proposals to protect TK through amendments to, or change of the patent system in different ways in Chapter 4 Section 4.6.3 and Section 4.6.4, below; also see Jay Erstling, “Using Patents To Protect Traditional Knowledge” (2009) 15 *Tex Wesleyan L Rev* 295; Carlos M. Correa, “Internationalization of the Patent System and New Technologies” (2002) 20 *Wis Int’l LJ* 523; Shubha Ghosh, “Traditional Knowledge, Patents, and the New Mercantilism (Part II)” (2003) 85 *J Pat & Trademark Off Soc’y* 885; Anil K. Gupta, “Rewarding Traditional Knowledge and Contemporary Grassroots Creativity: The Role of Intellectual Property Protection” (Draft Paper Presented in the International Seminar on Traditional Knowledge and IPRs, Center for International Development, Harvard University, 2000, Boston).

¹⁷⁰ See Michael Blakeney, “Protection of Traditional Knowledge by Geographical Indications” (2009) 3 *International Journal of Intellectual Property Management* 357 at 361 [Blakeney, “Protection of Traditional Knowledge”].

¹⁷¹ Raustiala & Munzer, *supra* note 18 at 339.

¹⁷² See discussion in *infra*, Chapter 4, Section 4.8.

¹⁷³ In a wave of interest, many developing countries—such as Chile, Brazil, Argentina, India, Malaysia, Singapore, Thailand, Jordan, and Egypt—adopted *sui generis* systems of GIs legislation between 1996 and 2004 alone. Indian Parliament, *The Geographical Indications of Goods (Registration and Protection) Act*, The Gazette of India Extraordinary No. 48, New Delhi, December 30, 1999; Ministry of Commerce & Industry (Department of Industrial Policy and Promotion), *The Geographical Indications of Goods (Registration and Protection) Rules* (March 8, 2002) New Delhi, online: <http://www.ipindia.nic.in/girindia/GI_Rules.pdf>; *Decree Regulating Wine-making and the Stocking*,

composite scholarly endeavour has not comprehensively examined the promise of GIs in light of the needs and expectations of the communities for whom the protection of TK holds a particular importance, namely, ILCs. In this respect, the thesis provides an analysis of the links between TK and GIs. The analysis considers whether the attention given to GIs in international negotiations and discussion as means of protecting TK can satisfy the urgent need to accommodate the interests of ILCs in the global economy.

Overall, the thesis contributes to the discourse on the need for and the significance of a properly crafted international framework of GIs for the recognition and protection of TK and TKBAPs. It also contributes to the shaping and development of existing and future GIs-based legal and policy frameworks to protect TK in the context of developing countries.

1.8 RESEARCH QUESTIONS

As unique and novel as the approach to protecting TK through forms of IP may seem, the fact that IPRs are generally held as antagonistic to TK demands that any inquiry into the potentials of GIs to protect TKBAPs should address a number of policy and legal questions.¹⁷⁴ This thesis seeks to provide answers to some important questions that

Circulation and Trading of Wines, No. 2-75-321, 12 August 1977 (25 Shaban 1397) <http://www.wipo.int/wipolex/en/details.jsp?id=2978&tab=2>; *Law Concerning Distinctive Signs of Origin and Quality for Foodstuff, Agricultural and Fishing Products*, No. 25-06, 23 May 2008; *Morocco Food and Agricultural Import Regulations and Standards – Narrative FAIRS Country Report*, GAIN Report Number MO9012; *Law 25-06 of 23 May 2008 Concerning Distinctive Signs of Origin and Quality for Foodstuff, Agricultural and Fishing Product; Morocco Food and Agricultural Import Regulations and Standards – Narrative FAIRS Country Report*, Date:7/24/2009 GAIN Report Number:MO9012; See Ghanaweb, “Parliament Passes Four Bills” (12 December 2003) online: <<http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=48134>>; also see Broude, *supra* note 138 at 629 ff; also see discussion below Chapter 4 Section 4.8.

¹⁷⁴ See Sanjeev Agarwal & Michael J. Barone, *Emerging Issues for Geographical Indication Branding Strategies*, MATRIC Research Paper 05-MRP 9 (2005); Sunder, “Invention”, *supra* note 4 at 97; Munzer &

frequently arise in connection with the effort to assess the instrumentality of GIs to protect TKBAPs. Questions on the use of GIs to protect TKBAPs are, thus, contextualized within the general framework of international regimes governing IPRs, TK and biodiversity. In a way, these questions are corollary to the primary research question, which is whether, and how, GIs can serve as an appropriate legal tools to protect TKBAPs.¹⁷⁵

The thesis addresses issues on the general theme of inquiry by looking into the imperatives for the legal protection of TK. The discussion explores efforts to protect TK and TKBAPs in international law; identifies the modalities and gaps in existing and proposed approaches; and examines how best the gaps in these modalities can be addressed. Regarding the specific inquiry on the applicability of GIs to protect TKBAPs, the thesis explores:

- How GIs are protected in different jurisdictions: Here, I investigate the protection of GIs in international, regional and domestic legal systems. In addition, I examine the legal and policy bases for GIs protection. I discuss the disputes that arise from differences between the EU and the US in the form of and philosophical underpinnings for GIs protection.

Raustiala, *supra* note 18; see Chapter 3 Section 3.2.2.2, below, for discussion of the relationship between IP regimes and TK; Oguamanam, “Localizing”, *supra* note 1 at nn 1; see also Chapter 2 Section 2.7, below, for discussion of the form and nature of GIs as IP rights.

¹⁷⁵ These primary and corollary research questions derive from the respective specific and general propositions that underlie this thesis. See Section 1.1 above. The general proposition in this thesis concerns the search for an appropriate modality to protect TK. The discussion from Chapter Two to Chapter Four focuses on this general proposition as a foreground for the specific inquiry in Part Two of the thesis, that is, the applicability of geographical indications as a legal mechanism for protecting TKBAPs. Thus, this thesis addresses two propositions to varying degrees in Part One and Part Two. In conducting the analysis from the two angles, I use the phrase “specific focus of the thesis” or “primary inquiry” to refer to the issues set forth in this Section regarding the instrumentality of GIs for protecting TKBAPs.

- The justification for the choice of GIs to protect TKBAPs: In this regard, the discussion and analysis focus on the structural and functional suitability between GIs and TK systems, and present theoretical frameworks that support the use of GIs to protect TKBAPs.
- The significance of GIs in the pursuit of a range of policy objectives in protecting TKBAPs. This issue relates to the utility of GIs as legal instruments for the realization of economic, ecological and socio-cultural ends. The thesis addresses this by looking at the challenges and opportunities for using GIs in developing countries in light of concerns generally raised about the administration and enforcement of modern IPRs in developing countries, namely, the economic benefits and costs of adopting GIs. The discussion examines how GIs may be designed to suit local contexts and circumstances in developing countries to overcome challenges in implementation. It also explores how properly designed systems of GIs may be used to pursue broad objectives for the protection of bio-cultural diversity, achievement of food security, and prevention of biopiracy.

The thesis discusses the issues identified above thematically. Responses advanced refine the research questions and confirm the general and specific hypotheses that their underlying issues postulate in two ways: First, in regard to the role of IP in the protection of TK; and second, in terms of the applicability of GIs to protect TKBAPs.

1.9 STRUCTURE OF THE THESIS

The rest of this thesis is divided into two parts that correlate with the thematic focus of the inquiry. Part One comprises three Chapters that deal with the protection of

TK. Chapter Two is essentially definitional; it clarifies the basic concepts of TK, biodiversity, and geographical indications. It also throws some light on the use of key terms, and offers insights into the link between GIs and TK.

Chapter Three highlights some of the challenges and difficulties that ILCs face, most of which are associated with the lack of protection for TK systems and their underlying biodiversity. This context-setting Chapter considers various aspects of the impacts of the changing trends in global economic conditions to make a case for protecting TK and TKBAPs. It also develops the building blocks for the arguments in the second part of the thesis through its discussion of the factors relevant to assessing the applicability of GIs to protect TKBAPs.

Chapter Four probes existing and evolving legal mechanisms to protect TK and TKBAPs in different regimes of international law. This Chapter identifies the dominant initiatives and diverse modalities for protecting TK, with an eye to comparing and contrasting them with GIs in responding to the needs and expectations of ILCs. The merits and demerits of different approaches are considered in light of their potential to address the inadequacies of the existing IPRs system that are identified in Chapter Three. The discussion underscores the need for increased focus on the importance and the role of IP to protect TK in particular contexts. The Chapter also identifies and reviews the works of national and international forums in which GIs receive attention as IP instruments to protect TKBAPs.

The second part of the thesis dwells on the specific theme of inquiry, that is, applicability of GIs to protect TKBAPs. Chapter Five examines the regulation of GIs in

national and international legal frameworks. The fundamental objective of this Chapter is to place GIs in their historical, institutional, and legal contexts. The discussion also explores features and characteristics of GIs that factor into their protective functions for TK and TKBAPs.

Chapter Five also broaches the question whether GIs satisfy the peculiarity of TK. The discussion conceptualizes GIs as proprietary rights that may be justified through theoretical insights derived from the social planning theory of IP, complemented with the theories of embeddedness, cultural economy, and a rights-based approach to development. In conclusion, the Chapter argues that a GIs framework conceptualized in the foregoing manner serves a protective function that takes into account the contributions of TK systems in economic and cultural contexts.

Chapter Six closely examines the relevance of GIs to protect TKBAPs by focusing on the implementation aspects of GIs in the context of developing countries. The analysis in this Chapter addresses concerns and practical issues that determine the applicability of GIs to protect TKBAPs. The topics covered in Chapter Six assess the roadblocks, challenges, and potentials of adopting GIs in developing countries as instruments to protect TKBAPs. Secondary data from previous experiences in developing countries on the use of GIs is employed to illustrate the analysis. In this regard, the discussion shows that the practical difficulties of implementing GIs are not insurmountable depending on the policy contexts of their implementation.

In general, Chapter Six examines the role of GIs as vehicles to pursue socio-economic, cultural and ecological objectives which enable ILCs to resist the impacts of

global economic pressures, identified in earlier Chapters. The discussion also draws attention to limitations in regard to the system of GIs, and also in regard to the adoption of GIs as instruments for protecting TK.

Finally, Chapter Seven concludes the thesis. It summarizes the main points established through the analysis in preceding Chapters, discusses outstanding problems, and identifies possible directions for future research. It affirms that the search for a method to protect TK should respond to the needs and expectations of traditional communities with respect to the different areas of TK practice. While acknowledging the significance of variations of *sui generis* modalities as effective policy options to protect TK, the thesis argues that GIs may be used to protect products of TK in agricultural practice.

It also finds that GIs can be preferred options for protecting TKBAPs in circumstances where other modalities of protection cannot address the concerns of ILCs in respect to their participation in international trade. If conceptualized as a form of IP that is structurally and functionally suited to the attributes of TK, the protection offered by GIs serves the expectations of ILCs in TK protection and may be used to their advantage in economic, biodiversity and socio-cultural terms. Based on these points, the thesis recommends how GIs could be used to protect TKBAPs at the international and national levels of regulation.

In terms of issues under consideration at the international level, the thesis adopts the position that enhanced protection for GIs is intrinsically linked to negotiations and discussion for the international protection of TK. As such, it calls for the consideration of a GIs model to serve as an instrument for protecting aspects of TK in current negotiations

under the auspices of the WIPO. It also recommends that this must be accomplished in cooperation with the WTO, the Convention on Biological Diversity (CBD) and the Food and Agricultural Organization (FAO). The recommendation is justified on the ground that higher level of GIs protection for agricultural products at the international level could bring a degree of balance in the approach to the implementation of global IPRs, as it gives developing countries an opportunity to protect TKBAPs.

At the national level, it is recommended that the use of GIs as instruments for protecting TKBAPs should be carefully weighed from two perspectives. First, a decision to use GIs should assess how GIs could be utilized to protect TKBAPs without compromising TK systems and their underlying biodiversity. This is best accomplished in light of immediate challenges and long-term opportunities associated with introducing, establishing, and enforcing GIs rights in specific contexts. Once countries decide to implement GIs within their jurisdictions, the second consideration concerns the choice of a legal means for protecting GIs. As to this, the thesis argues that the flexibility inherent in providing a means of GIs protection, as allowed by the TRIPS Agreement, offers alternative approaches to implementing GIs to suit different circumstances. The suitability of GIs for protecting TKBAPs, and the choice of a legal means for protecting GIs, should be determined on a case-by-case basis. Finally, Chapter Seven identifies limitations of the thesis, and concludes, overall, that GIs should be utilized to supplement overarching measures to protect TK.

PART ONE: TRADITIONAL KNOWLEDGE, TRADITIONAL KNOWLEDGE-
BASED AGRICULTURAL PRODUCTS AND THE SEARCH FOR PROTECTION

CHAPTER 2 TRADITIONAL KNOWLEDGE, BIODIVERSITY, AND INTELLECTUAL PROPERTY: DEFINITION AND CONCEPTUAL BOUNDARIES

2.1 INTRODUCTION

This Chapter provides background information and working definitions for essential concepts. The discussion delineates the concepts of TK, GIs, biodiversity and TKBAPs as they are employed throughout this thesis. In doing so, the discussion presents the general and specific frames for this work. To this end, the Chapter is organised as follows.

Section 2.2 clarifies the concept of TK first, in terms of choice of terminologies, and then along key themes such as identity of knowledge holders; categories of TK; essential characteristics of TK; and subject matters of TK. Section 2.3 and Section 2.4 present overviews of the concepts of biodiversity and agro-biodiversity. These two Sections examine the relationship, interdependence, and integration between the concepts of biodiversity, genetic resources, and TK that any protection system for TK should account for.

Section 2.5 outlines the constitutive elements of “traditional knowledge-based agricultural products,” and discusses such technical terminologies as landraces, wild species, farmer varieties, handicrafts, and cultivars, which are all elements of TKBAPs. The discussion contrasts these concepts with more familiar concepts of plant genetic resource for food and agriculture, and genetically modified crops. Similarly, Section 2.6 deals with conceptual dimensions of “geographical indications.” The Section identifies and analyzes definitional issues and their juristic implications for the relationship between

TK and GIs. Finally, a brief introduction is provided regarding the link between GIs and TK, and the context for the use of certain technical terms in the thesis is explained.

2.2 DEFINING TRADITIONAL KNOWLEDGE

The term “traditional knowledge” is a shorter form of “traditional knowledge, innovations and practices” under the CBD, or of “Traditional Knowledge, Innovations and Creativity” in WIPO’s Report of Fact-finding Missions (FFM) on Intellectual Property and Traditional Knowledge.¹ A systematic investigation of TK as a subject in various disciplines started only in recent times – following its application on many fronts of scientific and technological development.² TK’s existence, however, is acknowledged to be “... as old as the history of man’s search for ways and means of dealing with his environmental circumstances” to satisfy the human needs of food, shelter and clothing.³

The definitional landscape of “traditional knowledge” poses various theoretical and methodological dilemmas due to the complexity of issues surrounding the term.⁴ The WIPO FFM report highlights the need for terminological clarity in defining “traditional knowledge,” noting that “[I]ack of terminological clarity [on TK] can confuse and

¹ See WIPO, *Draft Report on Fact-finding Missions on Intellectual Property and Traditional Knowledge (1998-1999)* (Geneva, April 2001) online: WIPO <<http://www.wipo.int/tk/en/tk/ffm/report/index.html>> [FFM]; *United Nations Convention on Biological Diversity*, 5 June 1992, 30619 U.N.T.S., entered into force on 29 December 1993 [Hereinafter, “CBD”], Art. 8(j).

² See, generally, Charles R. McManis, *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (London: Earthscan Publications, 2007) [Mcmanis, “Biodiversity and the Law”].

³ See Oluwatoyin Dare et al, “Situating Local Knowledge within Development Agenda: Some Reflections” online: Consilience <<http://consiliencejournal.readux.org/2009/02/situating-local-knowledge-within-development-agenda-some-reflections/>> at 4.

⁴ See Budd L. Hall, George Jerry Sefa Dei & Dorothy Goldin Rosenberg, *Indigenous Knowledges in Global Contexts: Multiple Readings of Our World* (Toronto: University of Toronto Press, 2000) at 6.

obscure what is already, terminology aside, a complex enquiry.”⁵ Subsequent efforts for legal and policy considerations of TK in international law have confirmed this need.⁶

There is not a widely acceptable definition of TK. However, precision in the definition of TK may involve consideration of three distinct elements of the concept: 1) Choice of an appropriate term or terms; 2) Identification or description of the subject matter to be covered by the term or terms selected; and 3) Determination of the scope of that subject matter represented by the term.⁷ The following sub-sections explain each of these descriptive elements of TK.

2.2.1 CHOICE OF TERMINOLOGY

With respect to the choice of terminology, “traditional knowledge” closely relates to a wide range of concepts. WIPO remarks: “[T]here is . . . a diffuse range of potentially overlapping terms in current use in international, regional and national discussion” regarding TK in a wide range of areas.⁸ Depending on the context, the relevant literature and some international instruments adopt the following alternative terms: “indigenous

⁵ FFM, *supra* note 1 at 211; see Chapter 4 Section 4.3.2, below, for in-depth discussion of WIPO’s Fact Finding Mission report.

⁶ See for example, WIPO, *TK – Operational Terms and Definitions* (Intergovernmental Committee on Intellectual Property and Genetic Resources, TK and Folklore Third Session, Geneva, 13 to 21 June 2002); also see Chapter 4 Section 4.3, below, for discussion of efforts for legal and policy consideration of TK in international forums.

⁷ *Ibid.*, para. 4.

⁸ See *Ibid.*

knowledge,” “tribal knowledge,” “local knowledge,” “folk knowledge,” “community knowledge,” “traditional ecological knowledge,” and various others.⁹

The term “tribal knowledge” is derived from the phrase “indigenous and tribal peoples” under the International Labour Organization (ILO) Convention, and has not been defined in any international instrument.¹⁰ Generally, the term has limited acceptance in the literature for its “derisive implications of primitivism and racial inferiority.”¹¹ Likewise, the use of “folk” in “folk knowledge” has raised objections for the negative connotation of being associated with the creations of lower or superseded civilizations.¹² Against these objections, the term has recently been used to refer to artistic heritage developed by a community, with a specific mention of the “literature, music, dance, games, mythology, rituals, customs, handicrafts, architecture and other arts” (thereby excluding TK of plants and animals in medical treatment and food).¹³ In this sense, the category of knowledge implied by “folk knowledge,” or sometimes referred to as folklore,

⁹ A WIPO study provides a non-exhaustive list of 20 terminologies used to refer to TK. See Annex 1 in *ibid.*

¹⁰ See *International Labour Organization Convention No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries*, 7 June 1989, reprinted in (1989) 28 I.L.M.1382.

¹¹ Mgbeoji, “Global Biopiracy,” note 22, Chapter 1 at 10.

¹² Michael Blakeney, “The Protection of Traditional Cultural Expressions,” online: EC-ASEAN Intellectual Property Rights Co-operation Program <http://www.ecap-project.org/fileadmin/ecapII/pdf/en/activities/regional/aun_sept_07/traditional_cultural_expressions_word.pdf> at 2.

¹³ See UNESCO, *Recommendation on the Safeguarding of Traditional Culture and Folklore* (Adopted by the General Conference at its Twenty-fifth Session, Paris, 15 November 1988) Online: <http://portal.unesco.org/en/ev.php-URL_ID=13141&URL_DO=DO_TOPIC&URL_SECTION=201.html>; also, see Michael Blakeney, “Protecting expressions of Australian Aboriginal Folklore Under Copyright Law” (1995) 9 EIPR 442; Zheng Chengsi, “On the Copyright Protection of Folklore and Other Legislation in China” (1996) 3 China Patents and Trade Marks 91.

refers to knowledge currently represented by the term “traditional cultural expressions” (TCEs).

Related to the term TCEs is “cultural property” and “cultural heritage.” Often used interchangeably, the terms “cultural property” and “cultural heritage” mostly relate to tangible properties which may be chattels or related to land.¹⁴ Unless qualified with the word “intangible,” the subject matter of “cultural property” and “cultural heritage” do not feature in discussion regarding IP.¹⁵

The African Group in its submission to the WIPO has officially adopted the term “community knowledge” to refer to TK.¹⁶ The term does not seem to recognize some facets of the knowledge, as the use of “community” knowledge may imply that TK is the same with other values and assets that ordinarily exist in a community.

In addition, the term “local” in “local knowledge” might not properly describe the concept. It may seem to present this category of knowledge as a mere “place-based” resource that does not easily lend itself to dialogues and cultural commitments beyond those incorporated within the practices of the community itself.¹⁷ The tremendous boom in the commercial application of tradition-based genetic resources in modern

¹⁴ See Robert G. Howell, “The Interconnection of Intellectual Property and Cultural Property” online: <www.fphlcc.ca/downloads/interconnection-of-ip-cultural-property.pdf> at 1.

¹⁵ See Manlio Frigo, “Cultural Property V. Cultural Heritage: A ‘Battle of Concepts’ in International Law?” (2004) 86: 854 *International Review of the Red Cross* 361.

¹⁶ WIPO, *Proposal Presented by the African Group to the First Meeting of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, First Session, Geneva, April 30 to May 3, 2001) at paras. 1.2-1.3.

¹⁷ Sheila Jasanoff & Marybeth Martello, eds, *Earthly Politics: Local and Global in Environmental Governance* (Cambridge: MIT Press, 2004) at 339.

biotechnology has proved that TK is a dynamic system constituted within particular communities, histories, institutional settings, and expert cultures, as is Western scientific knowledge.¹⁸ TK cannot be considered mere localized phenomena, as “it extends across cultures, histories, and geographical spaces, as well as across time.”¹⁹ In addition, the term “traditional ecological knowledge” may imply that the knowledge relates only to ecology, rather than seeing this knowledge as all encompassing.²⁰

The term “indigenous knowledge” is most often used interchangeably with TK. Beyond interchangeability, however, there are significant policy and legal implications in the choice of terminology between TK and “indigenous knowledge.”²¹ Some avoid the use of the term “traditional knowledge” and prefer, instead, “indigenous knowledge” on the ground that “traditional” implies that the knowledge “is not ‘science’ in the formal sense of a systematic body of knowledge that is continually subject to empirical challenges and revision.”²² Others prefer the term “indigenous knowledge” over

¹⁸ Mgbeoji, “Global Biopiracy,” note 22, Chapter 1, at 166.

¹⁹ *Supra* note 4 at 4.

²⁰ Note 89, Chapter 1 at 8.

²¹ Silke Von Lewinski, *Indigenous Heritage and Intellectual Property: Genetic Resources, Traditional Knowledge and Folklore* (Bedfordshire: Kluwer Law International, 2009) at 69.

²² Cognizance of the genesis of the use of “traditional” as against “modern”, the South African Minister of Science and Technology ruled in favour of the use of the concept “indigenous knowledge and indigenous knowledge systems” against “traditional knowledge and traditional knowledge systems.” WIPO, *Recognition of Traditional Knowledge Within the Patent System* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge And Folklore Thirteenth Session, Geneva, October 13 to 17, 2008), para. 8.

“traditional knowledge” on the ground that “traditional” denotes the colonial attitudes of “simple, savage, and static society.”²³

Fundamental to the distinction between the terms “traditional knowledge” and “indigenous knowledge,” is a distinction between “knowledge held in diverse local and traditional contexts,” and “the knowledge systems of peoples identified as having distinct indigenous status,” respectively.²⁴ The term “indigenous knowledge” bears “significant normative implications” that, beyond mere reference to the knowledge itself, “embrace the cultural and legal identity and character of the community as such.”²⁵

Indeed, the identity and characteristic of the community that holds the knowledge necessarily determines the definition and scope of TK.²⁶ In addition, any system of legal protection for TK and TK-related resources should specify the identity of communities that are entitled to the benefits of the use of the knowledge, so that other parties are properly excluded from the rights and benefits that flow from the use of the knowledge. For this reason, the following sub-section examines and specifies the identity of communities considered rights holders in the protection of TK and TKBAPs for the purpose of this thesis.

²³ See *supra* note 3 at 5.

²⁴ *Supra* note 21.

²⁵ *Ibid.* at 70.

²⁶ *Ibid.*

2.2.2 IDENTIFICATION OF THE KNOWLEDGE HOLDERS: INDIGENOUS PEOPLES AND LOCAL COMMUNITIES

The task of defining the term “indigenous peoples” has evoked considerable discussion, but without a clear definition. Whether efforts to protect TK should determine what constitutes TK based on the identity of the community that holds the knowledge depends, largely, on what distinguishes people as “indigenous.” Daes points out that “the concept of ‘indigenous’ is not capable of a precise, inclusive definition that can be applied in the same manner to all regions of the world.”²⁷

The concept of “indigenous peoples” has its origin in the experience of colonialism, whereby “the aboriginal peoples of a given land were marginalized after being invaded by colonial powers, whose peoples are now dominant over the earlier occupants.”²⁸ Based on this understanding, the ILO Convention defines indigenous peoples as those who have:

[D]escent from the populations which inhabited [a] country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions.²⁹

Mugabe notes that this definition lays down four “vital factors of time, geographical space, resilience, and territorial occupation” in the determination of who “indigenous

²⁷ Working Group on Indigenous Populations, *Working Paper by the Chairperson-Rapporteur on the Concept of Indigenous Peoples*, U.N. Doc. E/CN.4Sub.2/AC.4/1996/2 (1996) online: <<http://cwis.org/fwdp/International/96-12980.txt>>.

²⁸ Secretariat of the Permanent Forum on Indigenous Issues, *State of the World's Indigenous Peoples* (New York: United Nations, 2009) at 6.

²⁹ *International Labour Organization Convention No.169 Concerning Indigenous and Tribal Peoples in Independent Countries*, 7 June 1989, reprinted in (1989) 28 I.L.M.1382.

peoples” are.³⁰ The “time” and “geography” factors in the definition of indigeneity warrant particular attention, as these are key dimensions that determine the scope and category of people to be recognized as “indigenous peoples.”

The time-based dimension of ILO’s definition relates to its requirement that people who qualify for recognition as “indigenous peoples” should retain “social, economic, cultural, and political institutions” that were present at “the time of conquest, colonization...” This is problematic, as the requirement of “retention” overly restricts the group of people to regard as “indigenous.” The requirement effectively excludes “indigenous peoples and persons whose institutional bearing and identity were disrupted by colonialism and conquest.”³¹ The geographical limitation of the ILO definition, concerning the reference to “descent from the populations which inhabited [a] country, or a geographical region to which the country belongs,” directly points to “the Americas, Russia, the Arctic, and many parts of the Pacific.”³² This requirement, however, does not make sense in relation to other parts of the world, in particular, most parts of Asia and Africa where settlers of European descent do not displace the whole population during colonialism.³³ In many parts of Africa and Asia, issues of indigenous peoples’ rights arise

³⁰ John Mugabe, “Intellectual Property Protection and Traditional Knowledge: An Exploration in International Policy Discourse” online: WIPO <<http://www.wipo.int/tk/en/hr/paneldiscussion/papers/pdf/mugabe.pdf>>.

³¹ Oguamanam, “International Law”, note 1, Chapter 1 at 21.

³² *Supra* note 28 at 6.

³³ *Ibid.*

in relation to the suppression of marginalized groups by dominant groups, and not only by outside settlers as the ILO definition presupposes.³⁴

Thus, to separate Africans and Asians into indigenous and non-indigenous peoples based on those standards, and to recognise the rights of indigenous peoples based on such division, creates “separate classes of citizens . . . with different rights.”³⁵ Due to objections raised on these grounds, the 2007 Declaration on the Rights of Indigenous Peoples failed to endorse ILO’s definition of “indigenous peoples” that was earlier included in the earlier draft of the document.³⁶

Indeed, any formal definition of “indigenous peoples” brings the danger of excluding certain groups, and thus, legal and policy initiatives tend to leave the term open-ended and as widely applicable as possible. The universal view is that no such definition is *sine qua non* for the recognition and protection of indigenous peoples’ rights, and, that communities should be entitled to determine their own identity.³⁷ The approach that

³⁴ *Ibid.*

³⁵ *Ibid.* For the same reason, the discussion in this thesis occasionally uses the terms “ILCs” and “developing countries” interchangeably. This is justified on the argument that “indigeneity” and “local” apply to the majority peoples in African and Asian countries. This also presumes that national governments in these countries represent their constituents under the rationale of political representation. See, Peter K. Yu, “Cultural Relics, Intellectual Property, and Intangible Heritage” (2008) 81 Temple Law Review at nn. 201(quoting “In most African states, . . . the larger tribal societies sees [sic] themselves as rightful elements of the nation’s government. Owning their cultural knowledge is not the issue, owning a share of the central government is.”

³⁶ See Robert T. Coulter, “Commentary on the UN Draft Declaration on the Rights of Indigenous Peoples” (1994) 18 Cult Surv Q 37 at 38; see also *General Assembly Adopts Declaration on Rights of Indigenous Peoples*, 13 September 2007 online: < <http://www.un.org/News/Press/docs/2007/ga10612.doc.htm>>; *Declaration on the Rights of Indigenous Peoples*, GA Res. A/61/295, 107th Plen. Mtg., (2007).

³⁷ See Secretariat of the United Nations Permanent Forum on Indigenous Issues, *Resource Kit on Indigenous Peoples’ Issues* (New York: United Nations, 2008) at 7. An elaborated and universal definition of indigenous peoples is currently considered neither desirable nor necessary, as it may restrictively “exclude some groups” and consequently, may leave these groups “outside the *ratione personae* of specific indigenous rights norms” provided by international law. See Peter-Tobias Stoll & Anja von Hahn,

allows “self-identification” agrees with the perspective of most indigenous peoples who reject the idea of a formal definition of “indigenous peoples” at the international level. Indeed, indigenous peoples assert the right to self-definition as an element of self-determination.³⁸ For this reason, policy deliberations and legal analyses of the topic at the international level are mostly geared towards setting wide criteria that accommodate the right of indigenous peoples themselves to define what and who is indigenous.³⁹

However, even the widest possible understanding of “indigenous peoples” may exclude certain communities who engage in the creation and maintenance of TK from the category of “indigenous peoples.” The term “indigenous knowledge” may refer to the knowledge that belongs to “indigenous peoples” understood in the manner described

“Indigenous Peoples, Indigenous Knowledge and Indigenous Resources in International Law” in Silke von Lewinski, ed, *Indigenous Heritage and Intellectual Property, Genetic Resources* (The Hague: Kluwer Law Int., 2008) at 11.

³⁸ In consideration of the problematic approach of ILO’s definition, the Report of the Working Group of Experts on Indigenous Populations/Communities of the African Commission on Human and Peoples’ Rights emphasizes that the concept of indigenous must be understood in wider context:

The focus should be on more recent approaches focusing on self-definition as indigenous and distinctly different from other groups within a state; on a special attachment to and use of their traditional land whereby ancestral land and territory has a fundamental importance for their collective physical and cultural survival as peoples; on an experience of subjugation, marginalization, dispossession, exclusion or discrimination because these peoples have different cultures, ways of life or modes of production than the national hegemonic and dominant model.

See African Commission on Human and Peoples’ Rights & International Work Group For Indigenous Affairs, *Report of the African Commission’s Working Group of Experts on Indigenous Populations/communities* (Copenhagen: Skolens Trykkeri, 2005) at 92; also see Elsa Stamatopoulou, “Indigenous Peoples and the United Nations: Human Rights as a Developing Dynamic” (1994) 16 *Human Rights Quarterly* 58-81.

³⁹ See Erica-Irene A. Daes, *Working Paper on the Concept of “Indigenous People”* (Prepared for the Working Group on Indigenous Populations, 1996) UN Doc E/CN.4/Sub.2/AC.4/1996/2 in *supra* note 37 at 8; José Martínez Cobo, *Study of the Problem of Discrimination against Indigenous Populations*, 1986/7, UN Doc E/CN.4/ Sub.2/1986/7, para. 379.

above, rather than to local, popular, or informal knowledge in general. For this reason, WIPO realizes that “indigenous knowledge” is not necessarily TK.⁴⁰

The literature and international instruments usually refer to the categories of people that may not fit the criteria for indigenesness as “local communities.”⁴¹ The term “communities embodying traditional lifestyles” in the CBD is, for example, understood to refer to “both farming communities and indigenous peoples.”⁴² The CBD prefers the term “indigenous peoples and local communities” instead of just “indigenous peoples,” on the ground that the former ensures that communities who maintain traditional lifestyle are included even if they are not considered indigenous – “especially considered to be the case in Africa.”⁴³ Non-indigenous communities constitute the majority and are holders of indigenous knowledge in many developing countries.⁴⁴

Seemingly for this reason, the Rio Declaration also refers to the notion of “indigenous peoples and local communities” instead of just “indigenous peoples.”⁴⁵ In a similar

⁴⁰ WIPO, “Intellectual Property, Traditional Knowledge and Genetic Resources Policy Options for Developing Countries” (Presented at International Conference on Intellectual Property, the Internet, Electronic Commerce And Traditional Knowledge, Sofia, May 29 to 31, 2001) at 5.

⁴¹ For discussion on the distinction between the terminologies “local communities,” and “indigenous people,” see Marcus Orellana, *REDD Legal Issues: ILCs* (Center for International Environmental Law Draft Report, 30 March 2009) .

⁴² Susette Biber-Klemm & Thomas Cottier, eds, *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (Wallingford: CABI, 2006) at 16

⁴³ Stoll & von Hahn, *supra* note 37 at 32.

⁴⁴ See generally Christoph Antons, “Traditional Knowledge and Intellectual Property Rights in Australia and Southeast Asia” in C. Heath & A.K. Sanders, eds, *New Frontiers of Intellectual Property Law: IP and Cultural Heritage, Geographical Indications, Enforcement, Overprotection* (Oxford: Hart Publishing, 2005) at 37.

⁴⁵ *Rio Declaration on Environment and Development*, June 1992, 32 I.L.M. (1992) 874, preamble, para. 12 [“Rio Declaration”].

manner, the CBD refers to “traditional knowledge, innovations and practices of ILCs,”⁴⁶ whereas the International Treaty on Plant Genetic Resources for Food and Agriculture mentions the “enormous contribution that the local and indigenous communities and farmers of all regions in the world [have made] for the conservation and development of plant genetic resources.”⁴⁷

As Biber-Klemm, et al, observe, however, the difference between “indigenous peoples” and “local communities” is, “in any case...rather fluid.”⁴⁸ The term “local community” is defined as “a human population in a distinct geographical area, with ownership over its biological resources, innovations, practices, knowledge, and technologies governed partially or completely by its own customs, traditions, or laws.”⁴⁹ Consistent with this definition, “local communities” may be understood as “farming communities in subsistence farming systems, which do not correspond to the definition of ‘indigenous’” as described above, or those who “do not wish to use [the indigenous] line of argument to their end.”⁵⁰

While previous efforts have illuminated the discussion on the knowledge of indigenous peoples in terms of the rights of minorities over their resources, the discussion

⁴⁶ See CBD *supra* note 1 at Art. 8 (j).

⁴⁷ See *International Treaty on Plant Genetic Resources for Food and Agriculture*, Opened for Signature on Nov. 3, 2001, FAO Res. 3/2003, online: FAO < <ftp://ftp.fao.org/ag/cgrfa/it/itpgr.pdf> > at Art. 9.1[ITPGRFA].

⁴⁸ *Supra* note 42 at 19.

⁴⁹ See OAU, *African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources*, Algeria (2000) at Part II, Art. 1.

⁵⁰ *Supra* note 42 at 19.

regarding the knowledge of local farming communities has been less intense.⁵¹ The rights of local communities are mostly conducted “rather in the context of the participatory rights as enshrined in the Farmers’ Rights” under the provisions of the International Treaty on Plant Genetic Resources for Food and Agriculture.⁵² The interest of local farming communities is “less noticeable” in international debates, for they “seem to be much less organized and politically involved than the indigenous peoples.”⁵³

In spite of the different contexts in which the interests of “local communities” and “indigenous peoples” surface in international forums, knowledge held by “local communities” coincides with the knowledge system of “indigenous peoples” in the narrower context of agricultural knowledge. Biber-Klemm, et al, summarise key common features of the knowledge of “indigenous peoples” and of “local communities” as follows:

In both types of knowledge, the information is frequently not perceived as the creation of individuals, but is understood as the achievement of a specific community, having evolved – and continuing to evolve – in cumulative steps over many generations. It is managed and exchanged according to the customs and customary laws of the community. A close interaction exists between TK of any one kind and the surrounding ecosystem. TK plays a key role in the preservation and sustainable use of the diversity of wild and domesticated plant varieties and animal species. In turn, it depends on the surrounding environment in which it has been created. It is a crosscutting issue that is embedded in the culture of a people. Thus its existence is

⁵¹ See Andrea Muehlebach, “‘Making Place’ at the United Nations: Indigenous Cultural Politics at the U. N. Working Group on Indigenous Populations” (2001) 16:3 Cultural Anthropology 415-448;

⁵² *Ibid.* at 18.

⁵³ Susette Biber-Klemm, “The Protection of Traditional Knowledge on the International Level – Reflections in Connection with World Trade” (UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, Geneva, 2000) at 3.

dependent on, and determined by, the maintenance of this culture from one generation to the next.⁵⁴

Given the common grounds between the knowledge systems of “indigenous peoples” and “local communities,” therefore, their protection and recognition should be integrated, complementary, and mutually supportive. Consonant with the use of the concept in the thesis, the term “traditional knowledge” includes the knowledge of both indigenous and non-indigenous communities such as farming communities who, as required by the CBD, rely on “traditional systems” of production.

2.2.3 SUBJECT MATTER OF TRADITIONAL KNOWLEDGE

The content of TK is described in various forums in different ways, depending on the importance attached to some of its aspects. Among various efforts to define TK, for example, the WIPO FFM report provides that TK is a subset of heritage, comprising of:

[T]radition-based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; marks; names and symbols; undisclosed information; and, all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields.⁵⁵

This description expresses TK in terms of IP by characterising it as a subset of “innovations and creations resulting from intellectual activity.” By defining “tradition-based” as “knowledge systems ... that have generally been transmitted from generation to

⁵⁵ FFM, *supra* note 1 at 25.

generation, [and] are generally regarded as pertaining to a particular people or its territory,” the FFM report suggests that TK should necessarily be transmitted through generations, and that it pertain to a particular people or territory.⁵⁶

In addition, WIPO defines TK as “ideas developed by traditional communities and indigenous peoples, in a traditional and informal way, as a response to the needs imposed by their physical and cultural environments.”⁵⁷ It states: “Those ideas contrast with the respective expressions, such as folk tales, poetry, and riddles, folk songs and instrumental music, dances, plays, etc.”⁵⁸ This definition acknowledges the traditional dichotomy between technical content of ideas covered under “industrial property” protection, and expressions of ideas which have invariably been addressed from a copyright perspective.⁵⁹

WIPO’s definition is significant for a number of reasons. First, TK is identified in relation to “traditional communities and indigenous peoples.” This identification relates to “authorship, rather than ownership.”⁶⁰ Thus, the definition allows the recognition of individuals, as long as this recognition is based on “customary laws and principles

⁵⁶ *Ibid.*

⁵⁷ *Ibid.*

⁵⁸ WIPO, *Consolidated Survey of Intellectual Property Protection of Traditional Knowledge, Traditional Knowledge and Folklore* (Delivered to the Intergovernmental Committee on Intellectual Property and Genetic Resources, Geneva, July 7-15, 2003).

⁵⁹ Industrial property protection refers to IP protection other than copyrights; for example, patents, trademarks and industrial designs. WIPO International Bureau, *The Protection of Traditional Knowledge, Including Expressions of Folklore* (WIPO International Forum on “Intellectual Property and Traditional Knowledge: Our Identity, Our Future, Muscat, January 21 and 22, 2002) WIPO/IPTK/MCT/02/INF.4, para. 15.

⁶⁰ Nuno Pires de Carvalho, “From the Shaman’s Hut to the Patent Office: A Road Under Construction” in Mcmanis, “Biodiversity and the Law”, *supra* note 2 at 213.

applicable to particular situations.”⁶¹ Second, the WIPO definition affirms that an “idea” is categorized as TK if it is created in a traditional and informal way.

The requirement of “traditionality” indicates the method of making TK; it should be developed through “the rules, protocols and customs of a certain community.”⁶² This allows for the recognition of orally transmitted, or documented / codified TK (for example, through contemporary efforts of documenting TK to protect its misappropriation and misuse).⁶³

Similar to WIPO, the CBD Secretariat describes TK as:

[T]he knowledge, innovations and practices of ILCs around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, Traditional Knowledge is transmitted orally from generation to generation. It tends to take the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices.⁶⁴

This definition mainly reflects the position of CBD on TK in relation to global environmental concerns. Accordingly, it emphasises TK as a foundation of “a living, dynamic body of traditions and practices” that is derived from intimate interaction with “local culture and environment.”⁶⁵ This is consistent with the CBD’s understanding of

⁶¹ *Ibid.*

⁶² See *Ibid.* at 244.

⁶³ See Vinod Gupta, “India’s TKDL: Definition and Classification of Intangible Cultural Heritage and Traditional Knowledge in the Context of Inventory Making,” in Toshiyuki Kono, ed, *Intangible Cultural Heritage and Intellectual Property: Communities, Cultural Diversity and Sustainable Development* (Antwerp: Intersentia, 2009).

⁶⁴ CBD Secretariat, *Article 8(j): Traditional Knowledge, Innovations and Practices*, online: CBD < <http://www.cbd.int/traditional/intro.shtml> >

⁶⁵ Note 89, Chapter 1, at 9.

the utility of TK to biodiversity conservation as can be evinced from its reference to TK as “knowledge, innovations, and practices, relevant for the conservation and sustainable use of biological diversity.”⁶⁶ Biber-Klemm rightly points out that this definition implies, first, that the CBD is concerned with TK in relation to biological resources; second, that the protection should be limited to knowledge, innovations and practices which first originate in ILCs embodying traditional lifestyles and which are relevant for the conservation and sustainable use of biological diversity.⁶⁷

WIPO’s definition provides a relatively wider context for the subject matter of TK in its technical content as well as its various expressions. For this reason, the thesis adopts WIPO’s definition in the analysis of legal mechanisms to protect TK.

Legal and policy efforts related to TK put emphasis on the characterisation of various elements of TK, in order to minimize the difficulty of providing a concise definition that delineates exact features and parameters. An unrealistic expectation for settled understanding of the concept may, in itself, limit the potential for consensus on the main agenda of protecting TK. For this reason, full recognition of major features that distinguish TK from other knowledge systems is necessary in legal and policy discussion for a protective regime of TK.⁶⁸ The following Section gives a brief overview of some features of TK.

⁶⁶ CBD, *supra* note 1 at Art. 8 (j).

⁶⁷ *Supra* note 42 at 158.

⁶⁸ See *supra* note 21.

2.2.4 ESSENTIAL CHARACTERISTICS OF TRADITIONAL KNOWLEDGE

A CBD study identifies three dimensions that any protection regime for TK needs to acknowledge:

[A] cultural aspect (it reflects the culture and values of a community) a temporal aspect (it is passed on through the generations, and slowly adapts to respond to changing realities) and a spatial aspect (it relates to the territory or the relationship which a community has with its lands and waters traditionally occupied or used).⁶⁹

The cultural dimension of TK is a major distinguishing feature. TK refers to “traditional norms and social values as well as to mental constructs that guide, organize and regulate the people’s way of living and making sense of their world.”⁷⁰ The foremost preconception in understanding the notion of TK in this respect relates to the word “tradition.” The use of the term “tradition” in relation to TK has sometimes been construed as denoting “practices or beliefs and values that are ‘in the past,’ unchanging, and static.”⁷¹ This is attributed to the fact that “[n]on-Western knowledge frameworks, epistemologies, and epistemic schools were thoroughly ridiculed as ‘folk knowledge’, ‘quackery’, ‘black-magic’ and ‘voodoo.’”⁷²

⁶⁹ CBD Secretariat, *Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices to Identify Priority Elements* (Fifth meeting, 15-19 October 2007, Montreal) UNEP/CBD/WG8J/5/6 20 September 2007, para. 4, online: <<http://www.cbd.int/doc/meetings/tk/wg8j-05/official/wg8j-05-06-en.pdf>>.

⁶⁹ *Ibid*, para. 12.

⁷⁰ *Supra* note 4 at 6.

⁷¹ Note 89, Chapter 1, at 7.

⁷² See Ikechi Mgbeoji, “Beyond Patents: The Cultural Life of Native Healing and the Limitations of the Patent System as a Protective Mechanism for Indigenous Knowledge on the Medicinal Uses of Plants” (2005)5 Canadian Journal of Law and Technology at 4 and nn. 46. [Mgbeoji, “Beyond Patents”] arguing,

In a more objective conceptualization of TK, the “traditional” aspect of TK does not relate to “its object, nor its subject matter or content, nor its age or antiquity.”⁷³ The “traditional” context of TK only implies that the customary rules and protocols that govern its creation, use, preservation, and passing down are “deeply rooted in their traditional location and community setting.”⁷⁴ Thus, the word “traditional” in TK suggests that norms, social practices, and values that underpin TK are “intrinsically local and innate to a traditional community.”⁷⁵ In their often cited observation, the Four Directions Council, an organization representing the First Nations of Canada, points out that “what is ‘traditional’ about [t]raditional [k]nowledge is not its antiquity but ... the social process of learning and sharing knowledge, which is unique to each indigenous culture.”⁷⁶

In addition, the fact that TK is developed in a traditional manner does not mean that TK is neither sophisticated nor systematic.⁷⁷ TK often constitutes a “‘technical’ insight or

“Given the dominance of the Western paradigm of “science,” there is a tendency to ethnicize and consider as culture-specific, unsophisticated and inferior, non-Western paradigms of knowledge.”

⁷³ *Supra* note 21 at 59.

⁷⁴ WIPO, *Elements of A Sui Generis System for the Protection of Traditional Knowledge* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Fourth Session, Geneva, December 9 to 17, 2002) WIPO/GRTKF/IC/4/8 at para 27.

⁷⁵ *Ibid.*

⁷⁶ Four Directions Council, “Forests, Indigenous Peoples and Biodiversity, Contribution of the Four Directions Council to the Secretariat of the Convention on Biological Diversity, 15 January 1996” as quoted in D. A. Posey & G. Dutfield, “Mind the Gaps: Identifying Commonalities and Divergencies Between Indigenous Peoples and Farmers Groups” (Draft paper presented to the 5th Global Biodiversity Forum, Buenos Aires, 1-3 November 1996) at 3.

⁷⁷ See Nuno Pires de Carvalho, “From the Shaman’s Hut to the Patent Office: A Road Under Construction” in Mcmanis, “Biodiversity and the Law”, *supra* note 2 at 8 (arguing that “several traditional communities and Indigenous peoples do possess vast and articulated systems of knowledge...there is indeed TK that is extremely sophisticated and complex”).

wisdom gained and developed...through years of careful observation and experimentation [by ILCs] with the natural phenomena around them.”⁷⁸ Unlike formal knowledge, usually generated in laboratories or other places of systematic research and development through “formal processes of invention and innovation,” TK’s creation and use involves “an incremental, ‘trial and error’ method.”⁷⁹ Like formal science, TK involves “careful observation, experimentation, and validation,” albeit in an altogether different context and setting.⁸⁰

Although “traditionality” relates to TK’s socio-cultural roots, societies and socio-cultural milieus constantly change as they continue to adopt new technologies and practices. This makes it difficult to determine the amount and extent of change in the method of knowledge production that may be required to label TK “traditional.”⁸¹ This brings up a related feature of TK: That “traditional” does not imply that the knowledge is “inert or ossified.”⁸²

While the tradition of learning and teaching is old, and the knowledge derived from this process may have originated a long time ago through intergenerational transmission, it is wrong to assume that TK’s process of knowledge creation and innovation is frozen in

⁷⁸ Dennis M. Warren, *Using Indigenous Knowledge in Agricultural Development*, World Bank Discussion Paper 127 (1991) at 5.

⁷⁹ *Ibid.*

⁸⁰ *Supra* note 4 at 9.

⁸¹ F. Berkes, “Traditional Knowledge in Perspective” in Julian T. Inglis, ed, *Traditional Ecological Knowledge: Concepts and Cases* (Ontario: International Program on Traditional Ecological Knowledge and International Development Research Centre, 1993) at 3.

⁸² *Supra* note 21, at 60.

time. WIPO emphasizes that TK is “a vital, dynamic part of *the contemporary* lives of many communities *today*.”⁸³ The contemporary aspect of TK is maintained, as it evolves to respond to the challenges posed by the social environment of individuals and communities through the process of local-level decision making and innovation, in its use to meet the demands of contemporary life, such as natural resource management, nutrition, food preparation, and health.

The innovation and creativity in TK is not static but “essentially dynamic,” as communities continue to adapt the knowledge that they inherited in an incremental fashion in order to respond to their “evolving needs and shared intellectual life.”⁸⁴ TK has “consistently shown its capacity to incorporate new ideas, technologies and categories” through the process of cultural and social transformation among and between communities (inter-generationally and trans-generationally).⁸⁵

TK is also characterised by its embodiment in cultural and spiritual contexts. This feature essentially distinguishes TK from simply useful information. Van den Daele characterizes TK as “embedded knowledge,” that is, knowledge that, besides its useful information, has social and cultural meanings.⁸⁶ In contrast, “Western scientific knowledge” is often uncritically characterised as disembodied and disembodied; it is “‘information’ which is global and impersonal, in contrast to knowledge as ‘culture’

⁸³ See WIPO, “Diverse,” note 82, Chapter 1 at 6 [*emphasis in the original*].

⁸⁴ *Supra* note 21 at 60.

⁸⁵ Note 89, Chapter 1, at 9.

⁸⁶ Van den Daele, *Modern Science and Traditional Knowledge in Western Societies* cited in *supra* note 42 at 159.

which is local and personal.”⁸⁷ As information, TK “can be easily communicated beyond its original context”; yet, the inherent qualities that mark its traditionality (the social and cultural constituents) “begin to break down once it leaves the community” because these elements “are much less readily transmitted.”⁸⁸

Another distinctive feature is that TK is, in most cases, communally owned. Within the realm of communality, however, the system of TK may exhibit various types of ownership rights.⁸⁹ The community as a whole, or individuals, elders, women, clans, lineages, etc., may have ownership rights, which usually vary in their extent from one group to another.⁹⁰ Locally specific systems of jurisprudence among ILCs govern the classification of knowledge as well as the procedures of its transfer and the modes of its utilization.⁹¹

Based on local jurisprudence and existing spiritual and cultural protocols, Barsh confirms that “some categories of knowledge may be attached to individual specialists,

⁸⁷ *Ibid.*

⁸⁸ *Supra* note 21 at 60.

⁸⁹ “Ownerships” of property has different contexts in Western and indigenous property systems. In the case of most ILCs, the prevailing system to control access to basic resources falls under communal property regime, in which individuals, elders, women, clans, lineages, etc., each have ownership rights within a given resource area and over specified resources within them under multiple rights. These rights may vary in their extent from one group to another, but they are inalienable in that others cannot take away or undermine them. See Darrell Addison Posey & Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities* (Ottawa: IDRC, 1996); Fikret Berkes, *Sacred Ecology: Traditional Ecological Knowledge and Resource Management* (Philadelphia: Taylor & Francis, 1999); Y. Henderson M. Battiste, *Protecting Indigenous Knowledge and Heritage: A Global Challenge* (Saskatoon: Purich, 2000).

⁹⁰ *Supra* note 42 at 160.

⁹¹ See Russel Lawrence Barsh, “Indigenous Knowledge and Biodiversity” in Darrell Addison Posey, *Cultural and Spiritual Values of Biodiversity* (Nairobi: United Nations Environment Program, 1999) at 73.

and other categories of knowledge to families, clans or the tribe or nation as a whole.”⁹² For example, Gupta recounts models of individual ownership of traditionally generated knowledge in the case of “grassroots-innovations.”⁹³ Similarly, many of the attributes of individual ownership are manifested in the methods African shamans handle their knowledge and wisdom.⁹⁴

Finally, the unique land-based feature of TK distinguishes it from other systems of knowledge. According to WIPO, TK is “generally regarded as pertaining to a particular people or its *territory*...”⁹⁵ Because of long-term association with a particular ecosystem, the communities who own TK have developed specific conservation ethics.⁹⁶ Customary laws and protocols that are a basis for the creation, development, and survival of TK are “conceived as integral to the land and environment itself.”⁹⁷ TK is intrinsically intertwined with the land that most ILCs occupied for millennia, with the accompanying local environment and ecology forming an integral part of their daily lives.⁹⁸ For most ILCs, TK “is of a piece with the landscape, with ancestral territories, and with cultural

⁹² *Ibid.*

⁹³ A.K. Gupta, *Securing Traditional Knowledge And Contemporary Innovations: Can Global Trade Links Help Grassroots Innovations* (Invited Paper for World Trade Forum, Bern, Switzerland, August 27-29, 1999).

⁹⁴ H. Nwokeabia, *Why Industrial Revolution Missed Africa: A ‘Traditional Knowledge’ Perspective, Economic* (Addis Ababa: United Nations Commission for Africa, 2001).

⁹⁵ FFM, *supra* note 1[*emphasis in the original*].

⁹⁶ See *supra* note 42 at 18.

⁹⁷ *Supra* note 21 at 61.

⁹⁸ Russel Lawrence Barsh, “How Do You Patent A Landscape?” (1999) 8:1 *International Journal of Cultural Property* at 14-17 cited in *Ibid.* at 60.

heritage, as inherently cultural creations in which their intellectual creations are inseparably embedded.”⁹⁹

The territorial features of TK relate to the primary focus of this thesis, i.e. assessing the instrumentality of GIs to the protection of TKBAPs. Given the centrality of “placeness” to the agricultural economy of most ILCs, the protection scope of GIs may cover TK that is embedded in an agricultural landscape.¹⁰⁰ The physical and human dimensions of “territoriality” constitute fundamental elements in the definition of GIs.¹⁰¹

2.2.5 CATEGORIES OF TRADITIONAL KNOWLEDGE

Beyond a description of general features, the substance of TK that is the subject of analysis in this thesis can be elucidated through a categorization of the diverse forms of TK. In recognition of the diverse nature, function and purpose of TK, various international forums address its protection in different areas of international law and policy-making. These areas include the governance of agricultural resources,¹⁰² the conservation of biodiversity,¹⁰³ the protection of the human rights of indigenous peoples,¹⁰⁴ the combat of desertification,¹⁰⁵ the promotion of appropriate medicine,¹⁰⁶ and

⁹⁹ *Ibid.* at 60.

¹⁰⁰ See detailed discussion on the significance of GIs in protecting TK linked to land-based agricultural activities in a particular landscape in below Chapter 5 Section 5.5.3; Chapter 6 Section 6.9.

¹⁰¹ See discussion on the definitional issues of GIs in relation to the denotational *and connotational* aspects in below Chapter 2 Section 2.7.

¹⁰² ITPGRFA, *supra* note 47.

¹⁰³ CBD, *supra* note 1.

¹⁰⁴ *Declaration on the Rights of Indigenous Peoples*, GA Res. A/61/295, 107th Plen. Mtg., (2007).

the preservation of cultural diversity.¹⁰⁷ In discussion regarding the legal protection of TK in most of these forums, emerging practice distinguishes TK as a descriptive broader concept (*lato sensu*), from TK in a stricter legal and policy sense (*stricto sensu*).¹⁰⁸

TK *stricto sensu* refers to “the content or substance of knowledge – what is known – and distinguished, for example, from its distinctive form of expression and from the genetic resources that are frequently intertwined with TK.”¹⁰⁹ In this sense, TK *stricto sensu* encompasses the technical knowledge itself which is not limited to a specific field.

However, the realization of the intrinsic integration between genetic resources and TK has necessitated the consideration of the two in the same policy and legal framework. Genetic resources in the form of biodiversity are themselves the embodiment of TK and

¹⁰⁵ *United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa*, 17 June 1994, 33 I.L.M. 1328, Art. 16 (g) [“UNCDD”].

¹⁰⁶ WHO, *Declaration of Alma-Ata (International Conference on Primary Health Care, Alma-Ata, 6-12 September, 1978)*.

¹⁰⁷ WIPO, *Model Provisions for National Laws on the Protection of Expressions of Folklore Against Illicit Exploitation and Other Prejudicial Actions*, reprinted in 16 Copyright Bull 62 (1982) [Model provisions]; *Universal Declaration of Human Rights*, GA Res. 217(III), UN GAOR, 3d Sess., Supp. No.13, UN Doc. A/810(1948) Art. 27; the *International Covenant on Economic, Social and Cultural Rights*, 19 December 1966, 993 U.N.T.S. 3, Can TS 1976 No. 46, 6 I.L.M. 360, Art.15.

¹⁰⁸ WIPO, *Consolidated Survey of Intellectual Property Protection of Traditional Knowledge*, WIPO/GRTKF/IC/5/7 (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Geneva, July 7-15, 2003) online: <www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf.../wipo_grtkf_ic_5_7.doc>, para. 9.

¹⁰⁹ *Supra* note 21 at 69. The WIPO IGC describes TK strict sensu as “content or substance of knowledge resulting from intellectual activity in a traditional context, [including] the know-how, skills, innovations, practices and learning that form part of traditional knowledge systems, and knowledge embodying traditional lifestyles of indigenous and local communities, or contained in codified knowledge systems passed between generations. It is not limited to any specific technical field, and may include agricultural, environmental and medicinal knowledge, and knowledge associated with genetic resources.” WIPO, *Glossary of Key Terms Related to Intellectual Property and Traditional Knowledge* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Second Inter-sessional Working Group, Geneva, February 21 to 25, 2011) WIPO/GRTKF/IWG/2/INF/2 at 23.

in the worldview of most ILCs, as explained above; there cannot be a distinction between TK and biodiversity as intangible and tangible components.¹¹⁰ In this context, any distinction between genetic resources and TK at legal and policy levels would only be superficial.

The distinction between TK *stricto sensu* and TK *lato sensu* is pertinent in relation to the distinct forms of expressions of TK – signified by the well-established concept of “expressions of folklore.” The term “folklore” refers to “characteristic elements of traditional artistic heritage developed and maintained by a community or by individuals reflecting the traditional artistic expectations of such a community.”¹¹¹ In earlier times, the term “expression of folklore” was used to refer to the artistic heritage developed by communities with specific reference to their “literature, music, dance, games, mythology, rituals, customs, handicrafts, architecture, and other arts.”¹¹² To avoid the perceived pejorative connotation of “folklore”, “expressions of folklore” is, in current use, juxtaposed with “traditional cultural expression” (TCEs) as in the phrase “traditional cultural expressions and folklore.”

¹¹⁰ See IIED, et al, *Sui Generis Systems for the Protection of Traditional Knowledge* (Information for the Secretariat of the Convention on Biological Diversity, 31st October 2005) online: IIED < <http://www.iied.org/pubs/pdfs/G02378.pdf>> at 2 (noting, “Knowledge [for indigenous peoples] comes from spirits associated with biodiversity across the whole spectrum from varieties, to species and ecosystems (eg. sacred plants, forests and mountains)”).

¹¹¹ *Draft Treaty for the Protection of Expressions of Folklore against Illicit Exploitation and Other Prejudicial Actions*, Reprinted in *Copyright* [1985] 47-58, and in *Doc. WIPO/GRTKF/IC/3/10*, dated 25 March 2002, Annex IV at Art. 1 online: < <http://www.copyrightnote.org/statute/cc0014.html>>.

¹¹² See UNESCO, *Recommendation on the Safeguarding of Traditional Culture and Folklore* (Adopted by the General Conference at Its Twenty-Fifth Session, Paris, 15 November 198) online: < http://portal.unesco.org/en/ev.php-URL_ID=13141&URL_DO=DO_TOPIC&URL_SECTION=201.html>; Also, M. Blakeney, “Protecting Expressions of Australian Aboriginal Folklore under Copyright Law” (1995) 9 EIPR 442; Chengsi, *supra* note 13.

Therefore, TCEs, as distinguished from TK *stricto sensu*, refer to the expressions of ideas by ILCs in the exercise of their cultural life, which – for lack of precise definition – are identified through characteristics and general criteria of the forms of expression.¹¹³ In short, the expressions of TK are “akin to copyrightable subject matter (e.g., as performances and designs).”¹¹⁴

The distinction between TK *stricto sensu* and TCEs has often been criticised on the ground that cultural expressions cannot be separated from the social and natural

¹¹³ The tangible and intangible forms of TCEs include, for example, verbal expressions or symbols (stories, epics, legends, tales, poetry, riddles, etc.); musical expressions (songs, instrumental music); expressions by action (dances, plays, ceremonies, rituals, other performances); tangible expressions (drawings, designs, paintings, including body painting carvings, sculptures, pottery, terracotta, mosaic, woodwork, metal ware, jewellery, baskets, needlework, textiles, glassware, carpets, costumes, musical instruments); intangible expressions reflecting traditional thought forms; architectural forms. Janice T. Pilch, *Traditional Cultural Expression Library Copyright Alliance: Issue Brief* (2009) at 1-2. Online: <<http://wo.ala.org/tce/wp-content/uploads/2009/10/pilchissuebrieftce.pdf>>; see also C. B. Graber & M. Murri-Nenova, eds, *Intellectual Property and Traditional Cultural Expressions in a Digital Environment* (Cheltenham: Edward Elgar, 2008).

¹¹⁴ See Emanuela Arezzo, “Struggling Around the Natural Divide: The Protection of Tangible and Intangible Indigenous Property” 25 *Cardozo Arts & Ent L J* 367 at 371; According to the WIPO Intergovernmental Committee:

‘Traditional cultural expressions’ or ‘expressions of folklore’ are any forms, whether tangible and intangible, in which traditional culture and knowledge are expressed, appear or are manifested, and comprise the following forms of expressions or combinations thereof: (i) verbal expressions, such as: stories, epics, legends, poetry, riddles and other narratives; words, signs, names, and symbols; (ii) musical expressions, such as, songs and instrumental music; (iii) expressions by action, such as, dances, plays, ceremonies, rituals and other performances, whether or not reduced to a material form and, (iv) tangible expressions, such as, production of art, in particular, drawings, designs, paintings (including body-painting), carvings, sculptures, pottery, terracotta, mosaic, woodwork, metalware, jewellery, baskets, needlework, textiles, glassware, carpets, costumes; handicrafts; musical instruments; and architectural forms; which are: (aa) the products of creative intellectual activity, including individual and communal creativity; (bb) characteristic of a community’s cultural and social identity and cultural heritage; and (cc) maintained, used or developed by such community, or by individuals having the right or responsibility to do so in accordance with the customary law and practices of that community.

See WIPO, *The Protection of Traditional Cultural Expressions/ Expressions of Folklore: Draft Objectives and Principles* (Intergovernmental Committee On Intellectual Property and Genetic Resources, Traditional Knowledge And Folklore, Tenth Session, Geneva, November 30 to December 8, 2006) WIPO/GRTKF/IC/10/4, Annex.

environment in which they are produced.¹¹⁵ Indeed, TK and its forms of expression are inseparable. In the internal context of ILCs, for example, “the same body of customary law is likely to apply to both TK and TCEs.”¹¹⁶ In recognition of this, WIPO recommends a “holistic approach” in which the protection of TK and TCE are complementary and mutually supportive.¹¹⁷

Within the holistic context of TK and TCEs, however, a distinction between the two components is necessary for determining the appropriate subject matter of legal protection in a particular instrument, and for the choice of the appropriate legal tool that provides effective protection against appropriation by third parties. Regarding legal protection of TK externally, it is impractical to achieve effective protection in a holistic context.

First, the legal and policy domain of protecting TCEs is distinct from that for TK (and its intrinsic components, genetic resources). The former is directly concerned with State’s “cultural and artistic policy,” a policy and legal domain distinct from a State’s branch that deals with environmental and biodiversity protection, in the latter. Secondly, as WIPO notes, “some legal tools are most useful in preventing third parties from misappropriating

¹¹⁵ See Christoph Antons, *Traditional Knowledge, Traditional Cultural Expressions, and Intellectual Property Law in the Asia-Pacific Region* (The Hague: Kluwer Law International, 2009) at 4; D.A. Posey, “Can Cultural Rights Protect Traditional Cultural Knowledge and Biodiversity?” in H. Niec, ed, *Cultural Rights and Wrongs: A Collection of Essays in Commemoration of the 50th Anniversary of the Universal Declaration of Human Rights* (Paris: UNESCO Publishing, 1998) at 43; see also Johanna Gibson, “Intellectual Property Systems, Traditional Knowledge and the Legal Authority of Community” (2004) 26 EIPR 280.

¹¹⁶ See WIPO, “Diverse,” note 82, Chapter 1 at 6.

¹¹⁷ WIPO, *The Protection of Traditional Knowledge: Draft Objectives and Principles* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Tenth Session Geneva, November 30 to December 8, 2006) WIPO/GRTKF/IC/10/5, para. 15.

TK [*stricto sensu*]” whereas “other legal tools are more effective against misuse of TCEs.”¹¹⁸

The distinction between the two components of TK is discernable in current international law and policy on TK. For example, the CBD deals with TK in relation to genetic resources and biodiversity, thereby, excluding TK embedded in artistic and literary forms of expression.¹¹⁹ Similarly, UNESCO is mainly concerned with TCEs and intangible cultural heritage issues that are not mostly related to biological resources, whereas WIPO, as an overarching global authority on IP policy, addresses TK in all categories where IP is implicated.

Distinctions can still be made based on a number of factors, such as “the degree of publicity” the knowledge has within a community or society,¹²⁰ or depending on the way ILCs deal with certain aspects of their knowledge.¹²¹ According to the distinction

¹¹⁸ *Ibid.*

¹¹⁹ Art. 10 of the CBD requires contracting parties to “protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.” See CBD, *supra* note 1 at Art. 10; See also FFM, *supra* note 1 at 25.

¹²⁰ Based on the manner in which traditional knowledge is held, Gopalakrishnan identifies four categories of TK:

- i) Information commonly known to the society with or without documentation and is in constant use by the people; ii) Information that is well documented and is available to the public for examination and use; iii) Information that is not documented or commonly known but known only to small groups of people and not revealed to others outside the group; iv) Information known only to individuals or members of the families and none else. E.g. the information used by the village medical practitioners for treatment.

See N. S. Gopalakrishnan, “Impact of Patent System on Traditional Knowledge” (1998) CULR 219

¹²¹ In some cases they may wish to keep TK secret within a community through absolute protection and secrecy in the case of, for example, sacred knowledge, or, “only transfer it as a gift, in that its spiritual character is opposed to marketability.” In other cases, the particular community may want “autonomy to decide if and how the information is used ... or it can wish to market the information... insisting upon fairness of the transaction and the sharing of the benefits.” Still in some circumstances, such as with

between TK *stricto sensu*, and TCEs – as explained above – the subject of TCEs lies outside the scope of inquiry in this thesis. Accordingly, attention will focus on TK *stricto sensu* and genetic resources that are intrinsic to it.

2.3 GENETIC RESOURCES, BIODIVERSITY AND TRADITIONAL KNOWLEDGE

Art. 2 of the CBD defines “genetic resources” as “genetic material of actual or potential value.”¹²² The same article provides that “genetic material” includes “any material of plant, animal, microbial, or other origin containing functional units of heredity.”¹²³ The Convention does not clarify the meaning of “value” – whether economic, cultural or spiritual value.

The CBD also defines “biological resource” as “genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.”¹²⁴ The term “biological resource” refers to those resources that exist in natural or crude form and to whole organisms. “Genetic resource,” on the other hand, refers to genetic materials that are obtained only after going through a process, such as isolation from a particular biological resource, and assessment and testing is made for “actual or potential value.”

knowledge that is generally known, the protective need of the community may rest on “the relatively free access to knowledge, but with compensation for the holders and/or sharing of benefits resulting from its use.” See *supra* note 42 at 160.

¹²² CBD, *supra* note 1 at Art. 2.

¹²³ *Ibid.*, para. 9.

¹²⁴ *Ibid.*, para. 2.

Both “biological resources” and “genetic resources,” however, refer to organic beings or biological organisms that are economically useful to humanity. Thus, the definition of biological resources under the CBD includes genetic resources. Because most biodiversity-rich countries – where TK is most abundant – do not have the capacity to isolate genetic components of biological resources, TK is associated with resources in their “biological” state. Thus, TK in genetic resources (GRs) is better understood as TK related to the utilization and management of biological resources.

TK and biological resources are separate concepts in their ordinary understanding. TK is an intangible asset while biological resources are corporeal. As any other resource of material value, genetic compositions of biological resources “represent a set of codes, with each piece carrying specific information that deal with a certain function.”¹²⁵ TK represents the information that forms the relationship between the set of genetic codes – in the context of ILCs, biological resource – and its function. This connection enables a certain biological resource to acquire value – medicinal, agricultural, cultural values. In the eyes of modern science, the set of genetic codes in a biological resource and the information (information aspect of TK) about its functionality exist in separate compartments. As a result, the biological resource is treated as “raw material” while the TK component is often discounted.¹²⁶

¹²⁵ Arezzo, *supra* note 114 at 375.

¹²⁶ See, generally, Darrell Addison Posey, *Cultural and Spiritual Values of Biodiversity* (London: Intermediate Technology, 1999) (highlighting the integration of cultural and spiritual values with biodiversity).

Although the distinction between the information (knowledge component) and the material that the information applies to occupies a highly specialized niche in the Western epistemological tradition, it is alien to communities outside this tradition.¹²⁷ The distinction between the material – most of the times a biological resource – and its intangible aspect is blurred in ILCs’ context. Thus, such a distinction in the context of TK is perceived as “not only inappropriate” but also “denaturaliz[ing of] traditional knowledge.”¹²⁸

The absence of a distinction between the material and the knowledge element is peculiar to TK, because TK is “typically conceived in fully holistic terms,”¹²⁹ as opposed to the “reductionist” tendencies of “Western” or conventional science.¹³⁰ A major difference between occidental science and TK arises from the fact that unlike the former, TK cannot be compartmentalised “but remains inseparable from the cohesive whole, from a way of being and of coming to learning.”¹³¹ TK is more often characterised as “tangible systems of knowledge, meanings, values and practices” than as a discrete, stand-alone entity.¹³² TK is mostly concerned with contextual application in multiple and diverse

¹²⁷ See Riley, note 1, Chapter 1.

¹²⁸ L.M. Hurtado, *Acceso a los Recursos de la biodiversidad Pueblos Indigenas* (Edmunds Institute, 1999) cited in Brendan Tobin, “Redefining Perspectives in the Search for Protection of Traditional Knowledge: A Case Study from Peru” (2001)10:1 RECIEL at 54.

¹²⁹ Graham Dutifield, “The Public and Private Domains: Intellectual Property Rights in Traditional Knowledge” (2000) 21 Science Communication 274 at 275.

¹³⁰ Vandana Shiva, *Staying Alive: Women, Ecology and Development* (New York: Palgrave Macmillan, 1988) at 24.

¹³¹ Stephen J. Augustine, *Traditional Aboriginal Knowledge and Science versus Occidental Science* (Prepared for the Biodiversity Convention Office of Environment Canada, 1997) at 6 & 3.

¹³² Note 89, Chapter 1 at 7.

realms of life – agricultural, environmental, medicinal, and spiritual – of ILCs. The application of TK for the exploitation of biological resources in a traditional system of land and other resource management practices contributes to the creation and sustenance of biodiversity. In order to clearly delineate the definitional boundaries of TKBAPs, the following Section discusses concepts of traditional agricultural knowledge and agrobiodiversity.

2.4 TRADITIONAL AGRICULTURAL KNOWLEDGE AND AGRO-BIODIVERSITY

Traditional agricultural knowledge refers to the category of knowledge that plays important roles in resource management and environmental decision-making by ILCs in the context of agriculture. Within the scope of the contemporary discourse for the recognition and protection of the rights of indigenous peoples, the focus on agricultural knowledge highlights the need to address the issue of TK from the perspective of farming communities around the globe. The Peoples Plan of Action — the statement of NGOs on the occasion of the FAO's Fourth International Technical Conference on Plant Genetic Resources 1996 points out that:

[A]ll agricultural biodiversity from time immemorial has been cultivated, developed, maintained and improved by farmers familiar with local soils, water cycles, climate, and other fundamental aspects of each particular ecosystem. The knowledge of farmers and indigenous peoples is human knowledge at its best, and forms an important aspect of the intellectual and biological wealth of the South.¹³³

¹³³ The Leipzig Commitment to Agricultural Biodiversity, "Towards A Peoples' Plan of Action" Leipzig, 14-16 June 1996 online: Third World Network < <http://www.twinside.org.sg/title/lei-cn.htm> >.

TK's role among farming communities can be observed in two contexts: First, TK may be "*associated* to a biological resource" in such circumstances as in the case of "information on the effects of medicinal plants or on the specific qualities of a crop."¹³⁴ In this case, TK is developed and maintained on the use of a naturally occurring resource, or a crop variety that farmers select and raise for its medicinal properties. Such agro-medicinal resources play key roles in the daily lives of ILCs. The World Health Organization estimates that 25% of modern medicines are derived from plants first used traditionally.¹³⁵

Second, TK can be "*integrated* into a biological resource" in such cases as "cultivated crop varieties and domesticated animals."¹³⁶ In this respect, TK is utilized to develop a biological resource that is distinct from a naturally occurring species. These contexts of TK represent the diverse ways in which ILCs in the farming sector create, utilize, and maintain TK. In the latter case, the biological resource cannot be separated from the knowledge that gave rise to its development for the reasons stated by the Secretariat of the CBD:

Firstly, thousands of traditional crop varieties ... are themselves the product or embodiment of knowledge of past and current generations of farmers which have developed, conserved and improved them. Secondly, according to the worldview of many indigenous societies, knowledge and resources, i.e. the intangible and tangible components, cannot be separated. ... Thirdly, the maintenance and creation of knowledge depends on the customary use of

¹³⁴ *Supra* note 42 at 4 [*emphasis in the original*].

¹³⁵ WHO, "Traditional Medicine—Growing Needs and Potential" *WHO Policy Perspectives on Medicines No.2* (May 2002) at 1; see also note 54, Chapter 1, at 96-124.

¹³⁶ *Supra* note 42 at 4 [*emphasis in the original*].

biological resources and their informal exchange between individuals and communities.¹³⁷

The interrelationship between agriculture and biological resources is complex. On the one hand, some consider agricultural activities major causes for the transformation of ecosystems, and sometimes, for the destruction of biological resources.¹³⁸ Intensified agricultural operations and forest extractions result in accelerated loss of biological resources because these activities often focus on short-term economic gain.¹³⁹ As a result, agricultural activity is a major factor in the loss of balance between humans and the environment in which they live.

The balance between human activities and the environment on which they depend is not a difficulty that arises in every agricultural system, however. The negative ecological and biodiversity effects of agricultural practices mainly relate to the emergence of “complex civilisations, living and expanding their dominant reach beyond the confines of local ecosystems.”¹⁴⁰ Compared to other agricultural practices, traditional agricultural

¹³⁷ CBD Executive Secretary, “Development of Elements of *Sui Generis* Systems for the Protection of Traditional Knowledge, Innovations and Practices” (Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(J) and Related Provisions of the Convention on Biological Diversity Fourth meeting, Granada, 23-27 January 2006) UNEP/CBD/WG8J/4/INF/18 at 3.

¹³⁸ Agriculture is antithetic to the conservation and preservation of biodiversity, as it sometimes contributes to its reduction “by the reclamation of natural ecosystems and by levelling out natural variety in abiotic conditions through drainage, fertilizing, and pesticide use.” Council of Europe, *Towards Integrating Biological and Landscape Diversity for Sustainable Agriculture in Europe* (High-level Pan-European Conference on Agriculture and Biodiversity, Paris 5-7 June 2002) at 39.

¹³⁹ Jitendra Srivastava et al, “Biodiversity and Agriculture: Implications for Conservation and Development” (Washington: The World Bank, 1996) at ix. See Chapter 3 Section 3.3.2 below, for discussion of the social, environmental, and cultural effects of “unsustainable” agricultural practices.

¹⁴⁰ Luisa Maffi, *Endangered Languages, Endangered Knowledge* (Oxford: Blackwell Publishers, 2002) at 388.

practices appear to have more positive effects, as these practices contribute to conserve, foster, and even create biodiversity.¹⁴¹ Traditional agriculture creates “open habitats” which support “many species that would normally be absent in those locations or occur at lower densities.”¹⁴² The role of traditional agriculture in sustaining biodiversity and ecosystem is best illustrated by the special relationship that cultural distinctness has with biological diversity in a particular region, currently recognized in a number of international instruments.¹⁴³

Rural agricultural strategies aspire to overcome the conflicted relationship between agriculture and biodiversity through agricultural policies directed at integrating the maintenance of biodiversity with ecological and socio-economic sensitivity. In this respect, the recognition of the interaction between “environment, genetic resources and the management systems and practices used by culturally diverse peoples” has resulted in the development of the concept of “agro-biodiversity.”¹⁴⁴

¹⁴¹ G. Oviedo, *Indigenous and Traditional Peoples of the World and Eco-region Conservation* (Gland: WWF-World Wide Fund for Nature, 2000) at 6.

¹⁴² *Supra* note 139 at 39.

¹⁴³ See *supra* note 142 at 6. For example, Principle 22 of the Rio Declaration acknowledges the vital role indigenous people and local communities have in environmental management and development, because of their knowledge and traditional practices. Rio Declaration, *supra* note 45, principle 22. Similarly, the CBD underlines the relevance of traditional knowledge, innovation and practices for the conservation of biological diversity and the sustainable use of its components. CBD, *supra* note 1 at preamble, para. 12 and Art. 8 (j). In the agricultural sector, Art. 9.2 of the ITPGRFA, which deals with Farmers’ Rights, explicitly recognizes the “enormous contribution that the local and indigenous communities and farmers ... have made and will continue to make for the conservation and development of plant genetic resources.” See ITPGRFA, *supra* note 47 at Art. 9 (d); also, see Chapter 4 Section 4.3.3 below, for discussion on the relationship between traditional knowledge and its role in maintenance and conservation of TK and biodiversity in various forums.

¹⁴³ *Supra* note 139 at 6.

¹⁴⁴ FAO defines agro-biodiversity as:

The term “agro-biodiversity” evolved in the literature in the wake of exponential growth in the biodiversity discourse from the 1980s.¹⁴⁵ Also known as agricultural biodiversity, agro-biodiversity is a broad category of biodiversity that is of particular relevance to food and agriculture. The CBD describes it as encompassing:

[T]he variety and variability of animals, plants and microorganisms, at the genetic, species and ecosystem levels, which are necessary to sustain key functions of the agro-ecosystem, its structure and processes for, and in support of, food production and food security.¹⁴⁶

While agro-biodiversity is associated with the physical activities of cultivating crops and rearing animals, superimposed on it are a “... complex set of biological processes from the level of genes to ecosystems, and socioeconomic processes ranging from the decisions of individual farmers to forces of globalization.”¹⁴⁷ Because agro-biodiversity is fundamentally shaped and conserved through human agricultural activities, FAO

[T]he variety and variability of animals, plants and micro-organisms that are used directly or indirectly for food and agriculture, including crops, livestock, forestry and fisheries. It comprises the diversity of genetic resources (varieties, breeds) and species used for food, fodder, fibre, fuel and pharmaceuticals. It also includes the diversity of non-harvested species that support production (soil micro-organisms, predators, pollinators), and those in the wider environment that support agro-ecosystems (agricultural, pastoral, forest and aquatic) as well as the diversity of the agro-ecosystems.

See FAO, *Agricultural Biodiversity, Multifunctional Character of Agriculture and Land Conference, Background Paper I* (Maastricht: FAO, 1999) online: FAO <<ftp://ftp.fao.org/docrep/fao/007/y5609e/y5609e00.pdf>>; see also UK Agricultural Biodiversity Coalition, “What Is Agricultural Biodiversity?” Online: <<http://www.ukabc.org/>>

¹⁴⁵ Franziska Wolff, “Legal Factors Driving Agro-biodiversity Loss” (2004) Environmental Law Network International at 2.

¹⁴⁶ CBD Executive Secretary, *Review of Implementation of Article 10 of the Convention (Sustainable Use of Biodiversity) and Application of the Addis Ababa Principles and Guidelines* (Subsidiary Body On Scientific, Technical And Technological Advice Fourteenth Meeting, Nairobi, 10-21 May 2010) UNEP/CBD/SBSTTA/14/7 at 4; see also Niels P. Louwaars, “Seed Policy, Legislation and Law: Widening a Narrow Focus” (2002) 4 Journal of New Seeds.

¹⁴⁷ Louise E. Jackson et al, “Biodiversity in Agricultural Landscapes: Investing without Losing Interest” (2007) 121 Agriculture, Ecosystems & Environment 193 at 193.

concludes that “local knowledge and culture can therefore be considered as integral parts of agro-biodiversity.”¹⁴⁸

Agro-biodiversity, therefore, includes not only “a wide variety of species and genetic resources,” but also the systems and practices that guide the modes through which agricultural communities produce and manage crops.¹⁴⁹ As a result, agro-biodiversity is not simply the bounty “of nature, guided by nothing but [p]rovidence.”¹⁵⁰

In policy discussion regarding the conservation and preservation of agro-biodiversity, scholars affiliated with the plant breeding industry tend to adopt a narrow understanding of agro-biodiversity that emphasises genetic variation as an element of agro-biodiversity.¹⁵¹ Accordingly, they consider an increase of genetic diversity between crop varieties as a prime vehicle to increase agro-biodiversity, and thus, focus on *ex-situ* conservation techniques targeted at “economically strong crops” in the context of commercially-grown crops.¹⁵²

Other analysts with agricultural or ecological background, however, tend to consider genetic diversity within and between crops as important.¹⁵³ They pay more attention to

¹⁴⁸ See *supra* note 147.

¹⁴⁹ Lori Ann Thrupp, “Linking Agricultural Biodiversity and Food Security: The Valuable Role of Agro-biodiversity for Sustainable Agriculture” (2000) 76 *International Affairs* 265 at 266.

¹⁵⁰ Sunder, “Invention,” note 4, Chapter 1, at 12, quoting Vandana Shiva, *Protect or Plunder? Understanding Intellectual Property Rights* (Dhaka: Zed Books, 2001).

¹⁵¹ See R. Pistorius, “Making Agro-biodiversity Work: Results of an On-Line Stakeholder Dialogue (OSD) in the Netherlands” (2000) 48 *Netherlands Journal of Agricultural Science* 319 at 325.

¹⁵² *Ibid.*

¹⁵³ *Ibid.* at 325.

the social construction of agro-biodiversity as an integral element of sustainable agricultural production, and thus, they focus on the interaction between the different categories of agro-biodiversity.¹⁵⁴ Some authors do not include commercially-grown artificial crop varieties in agro-biodiversity, “because [artificial crop varieties] cannot fulfil the full range of societal values that native biodiversity does.”¹⁵⁵ Such an understanding provides a convenient policy framework to appropriately deal with the challenges agro-biodiversity faces, and serves as a basis to implement the most preferred strategy of *in situ* conservation.¹⁵⁶

While recognizing agro-biodiversity in the context of genetic diversity within and between crops, the analysis in the thesis focuses on agro-biodiversity in the second context. The thesis adopts the narrower dimension of agro-biodiversity whenever it refers to the term, because the inquiry is primarily concerned with understanding the role of GIs in the cultural and ecological contexts of products of agricultural practices. Intrinsic to

¹⁵⁴ Agro-biodiversity includes three main categories of biological and non-biological resources. Included in the first category are: “harvested crop varieties, livestock breeds, fish species and non domesticated (wild) resources within field, forest, and rangeland including tree products, wild animals hunted for food and in aquatic ecosystems.” The second category includes species that play “life support function” in food provision. This refers to soil organisms in cultivated areas, insects and fungi that promote good production, such as pollinator bees, butterflies, and greenflies. Finally, agro-biodiversity includes other “organisms which have no direct role in agricultural production but are part of the agro-ecosystem” (such as pasture birds, insects, and characteristic elements of agricultural landscapes). See *supra* note 152; *supra* note 153 at 324.

¹⁵⁵ See Paul L. Angermeier, “Does Biodiversity Include Artificial Diversity?” (1994) 8 Conservation Biology 600 at 600.

¹⁵⁶ For example, the CBD incorporates both *in-situ* and *ex-situ* conservation, but it emphasizes *in-situ* measures. *In-situ* conservation focuses on conserving genes, species and ecosystems in their natural surroundings, for example by establishing protected areas, rehabilitating degraded ecosystems, and adopting legislation to protect threatened species. While prioritizing *in-situ* conservation, the CBD recognizes the contribution that *ex-situ* facilities and measures, such as gene banks and botanic gardens, can make to the conservation and sustainable use of biodiversity. See UNDP, “Convention on Biological Diversity” Frameworks for Action online: [undp.org <http://www.undp.org/biodiversity/biodiversitycd/frameCBD.htm>](http://www.undp.org/biodiversity/biodiversitycd/frameCBD.htm); CBD, *supra* note 1 at preamble, Art. 8.

this approach to agro-biodiversity is cultural and local knowledge of biodiversity and management, which forms the basis for exploitation of biological resources.¹⁵⁷

The intrinsicness of knowledge to agro-biodiversity attests to the embeddedness of socio-cultural factors and processes in agro-biodiversity, and vice versa. Agro-biodiversity can, therefore, be distinguished from varied types of biological resources in the category of plant genetic resources for food and agriculture (PGRFA), a term most often used in international legal and policy discussion and negotiations related to agriculture.

2.5 PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE, CULTIVARS AND GENETICALLY MODIFIED ORGANISMS

The term PGRFA is commonly understood as a generic expression for materials that grow both in traditional and industrial agricultural fields.¹⁵⁸ The use of the term encompasses such crops as cultivars, crops in national or international gene banks, GMOs, landraces, wild species, and farmers' varieties.¹⁵⁹ In this description of crops, PGRFA describes similar but biologically diverse populations that contrast in terms of their histories and agricultural habitats

Cultivar refers to a plant variety "that had been selected for a particular attribute or combination of attributes and that is clearly distinct, uniform, and stable in its characteristics and that, when propagated by appropriate means, retains those

¹⁵⁷ *Supra* note 148 at 2.

¹⁵⁸ See Detlef Virchow, "A Market for Genetically Coded Information as an Efficient Exchange Mechanism for Genetic Resources? Some Conceptual Considerations," in William H. Lesser, ed, *Transitions in Agbiotech: Economics of Strategy and Policy Proceedings of NE-165 Conference* (Washington, D.C.: Food Marketing Policy Center, 2000).

¹⁵⁹ See, *supra* note 148 at nn. 4.

characteristics.”¹⁶⁰ Sometimes called “high-yielding varieties” (HYVs) or “hybrids,” cultivars are distinguished from other varieties by their “distinctive properties for which [they are] uniform and breed true.”¹⁶¹ They are usually developed by professional plant breeders who work in private companies or in publicly funded research institutes through a formal breeding program (sometimes referred to as “scientific breeding”),¹⁶² and they “typically have a high degree of genetic uniformity.”¹⁶³ Distinguished from cultivars are genetically modified organisms (GMOs), which are organisms that have undergone advanced procedures of “selective transfer of genes from another organism (even another natural species)” (in contradistinction to the technologically supported procedures of breeding through cross-fertilization).¹⁶⁴

PGRFA does not allow for use in legal and policy analysis concerning problems of genetic erosion, conservation of biodiversity and farming communities’ control of resources due to the general inclusivity of the terminology. Thus, the term TKBAPs is adopted as a reference for analysis in this thesis to specifically refer to biodiversity

¹⁶⁰ A.C. Zeven, “Landraces: A Review of Definitions and Classifications” (1998) 104 *Euphytica* 127 at 129; the term “cultivar” is defined in the International Code of Nomenclature for Cultivated Plants as denoting: “An assemblage of cultivated individuals which is distinguished by any characters (morphological, physiological, cytological, chemical or others) significant for the purposes of agriculture, forestry or horticulture and which when reproduced (sexually or asexually), retains its distinguishing features.” See International Union of Biological Sciences International Commission for the Nomenclature of Cultivated Plants, *International Code of Nomenclature for Cultivated Plants* (Leuven: International Society for Horticultural Science, 2009), Art. 5.

¹⁶¹ Trygve Berg, “Landraces and Folk Varieties: A Conceptual Reappraisal of Terminology” (2009) 166 *Euphytica* 423 at 424.

¹⁶² *Ibid.*

¹⁶³ See FAO, *The State of the World’s Plant Genetic Resources for Food and Agriculture* (Rome: FAO, 1998) at 18.

¹⁶⁴ Susana Borrás, “Legitimate Governance of Risk at the EU Level? The Case of Genetically Modified Organisms” (2006) 73 *Technological Forecasting and Social Change* 61 at 68.

resources for food and agriculture. The term also refers to products derived from biodiversity that relate to informal agricultural activities of ILCs.

2.6 TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS

TK is a contextual system of knowledge, meanings, values, and practices that are deeply embedded in the cultures of ILCs.¹⁶⁵ Although TK encompasses intangible assets of information in the main part, it is mostly embedded in tangible resources that result from the practising of the knowledge in the daily lives of many ILCs. Indeed, Yu points out that “intangible cultural heritage is [often] manifested in tangible forms.”¹⁶⁶ Because the intangible product is separated from its intangible element with no attention to the latter, products of TK are mostly considered as mere commodities devoid of intangible values to warrant legal protection.¹⁶⁷

A reference to the information element of TK with little attention to tangible products that arise from the practice of the knowledge in the context of biodiversity would artificially separate the knowledge from the resources to which it is integrated. Treating

¹⁶⁵ Note 89, Chapter 1 at 7.

¹⁶⁶ *Ibid.* at 9 quoting Wim van Zanten, “Constructing New Terminology for Intangible Cultural Heritage” (2004) 56 *Museum Int’L* 36 at 39.

¹⁶⁷ Highlighting this point, Scafidi points out that “[a] cultural product reduced to the state of a mere commodity by the destruction of its intangible value is unlikely to be restored to the source community.” Susan Scafidi, *Who Owns Culture?: Appropriation and Authenticity in American Law* (New Jersey: Rutgers University Press, 2005) at 51 quoted in Yu, *supra* note 35.

biodiversity separately from TK this way may result in increased incidence of biopiracy through the establishment of IPRs over the products of ILCs' intellectual efforts.¹⁶⁸

Legal and policy initiatives to protect TK among ILCs should therefore maintain integrity between their knowledge and the tangible manifestations thereof. Consistent with this observation, I use the phrase TK-based agricultural products (TKBAPs) to refer to a range of tangible products in the agricultural field that emanate from a part or the totality of agricultural knowledge and practices held by ILCs. As such, ethnographic and metaphysical aspects of TK as well as their tangible expressions that are not essentially related to agricultural products, are not within the ambit of this project.

The term “agricultural products” has various shades of meaning the scope of which differs according to the domestic legislation of each country. In the standard definition found in regional and international legal frameworks, agricultural products are understood as “products of the soil, of stock-farming and of fisheries and products of first-stage processing directly related to these products.”¹⁶⁹ This definition stands fairly well to the

¹⁶⁸ The reverse is also true. As pointed out in the previous section, a distinction between the material and its intangible aspect of TK deliberately puts traditional knowledge out of the ambit of knowledge protection tools because, in contrast to the idea imparted, traditional knowledge does not directly yield “innovation” in the customary sense of the term. *Supra* note 130 at 54; See also Chapter 3 Section 3.2.2.1 below, for discussion about biopiracy.

¹⁶⁹ See for example, *Treaty Establishing the European Economic Community* (EEC) (Rome, 1957), entered into force on 1 January 1958, Art. 38.1. This definition is more or less consistent with the definition of “agricultural products” in Article 2 and Annex I of the WTO Agreement on Agriculture which defines “agricultural products” as products in Chapters 01 to 24 of the Harmonized System, less fish and fish products (Chapter 3), together with certain products in Chapters 29, 33, 35, 38, 41, 43, 50, 51, 52 and 53. *The Agreement on Agriculture*, 15 April 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, Legal Instruments—Results of the Uruguay Round vol. 31 online: WTO <http://wto.org/english/docs_e/legal_e/legal_e.htm>; The “Harmonized System” is the international standard which was created and is administered by the Brussels-based World Customs Organization. It is a numeric language for reporting goods to customs and other government agencies that is used by more than 180 countries worldwide, and almost 100% of international trade. See world Customs Organization website: <<http://www.wcoomd.org/home.htm>>.

use of the term in relation to products of most ILCs that engage in agricultural production. It includes not only primary agricultural products, but also processed products derived from them. Components of primary products include, in the main part, landraces, wild species, and farmer varieties. The scope of “products of first-stage processing directly related to these products” includes, on the other hand, handicrafts and food products such as cheese, wine, yogurt, sauerkraut etc. To offer a better understanding of the features and potentials that can be preserved through possible use of GIs as a protective regime, the following sub-section provides detailed descriptions of primary products in the TKBAPs category. In addition, a short overview of “handicrafts” is warranted due to the peculiar significance they have to most indigenous peoples, as distinguished from other products of “first-stage processing,” namely, food products.

2.6.1 PRIMARY PRODUCTS: LANDRACES, WILD SPECIES, AND FARMERS’ VARIETIES

The term “landrace” generally refers to seeds adapted to local growing conditions through natural adaptation, usually with no formal selection.¹⁷⁰ The term has been adopted as a generic one to refer to all farmers’ varieties, including those that are “bred and maintained through active seed selection on-farm.”¹⁷¹ In general, landraces may be characterised as farmer-developed varieties of crop plants which are heterogeneous, adapted to local environment conditions, have their own local names, and have not been

¹⁷⁰ See Tania Carolina Camacho Villa et al, “Defining and Identifying Crop Landraces” (2005) 3 Plant Genetic Resources 373.

¹⁷¹ See *Ibid.*

improved by formal breeding programs.¹⁷² In most cases, landraces are conserved and maintained as “a part of the cultural heritage of a region or country.”¹⁷³

Landraces constitute an element of TKBAPs due to the peculiar attributes that distinguish them from other primary agricultural products. These include their historical origin, recognizable identity, genetic diversity, adaptability, and absence of formal or artificial selection. The historical attribute of landraces refers to “temporal and spatial components of where a landrace was first developed.”¹⁷⁴ Unlike modern varieties which are characterised by an ephemeral life span, landraces have a relatively long history of human use. They are generally “associated with one specific geographical location” that is mostly attributed as “autochthonous or endemic,” and they often are named after the location.¹⁷⁵ This description applies to most agricultural products that have a rich tradition behind them, such as Basmati rice and Roquefort Cheese, produced in the Indian region of Punjab and the French district of Roquefort, respectively.

The second attribute of landraces relates to their recognizable identity: That they are “recognizable morphologically, farmers have names for them and different landraces are understood to differ in adaptation to soil type, time of seed, date of maturity, height,

¹⁷² E. Friis-Hansen & B. Sthapit, *Participatory Approaches to the Conservation and use of Plant Genetic Resources* (Rome: International Plant Genetic Resources Institute, 2000) at 199.

¹⁷³ *Supra* note 162 at 129.

¹⁷⁴ *Supra* note 172 at 375.

¹⁷⁵ Modern varieties are, rather, “bred remotely, trialled in several locations and subsequently cultivated in diverse locations.” See *supra* note 162 at 375; also, see M. Halewood et al, “Farmers, Landraces, and Intellectual Property Rights: Challenges to Allocating *Sui Generis* Intellectual Property Rights to Communities over their Varieties” in Susette Biber-Klemm & Thomas Cottier, eds, *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (Wallingford: CABI, 2006) at 174.

nutritive value, use and other properties.”¹⁷⁶ In most cases, landraces are recognized for particular qualitative traits from which they derive their names (in other times, names may be determined by other factors, such as “use or origin”).¹⁷⁷

Thirdly, landraces are characterised by “lack of *formal* genetic improvement.”¹⁷⁸ In contrast to modern varieties which result from a formal crop improvement process, landraces have undergone “different forms of selection” by farmers.¹⁷⁹ In landraces, continuous selection by farmers for “desired characters,” mostly intuitive, replaces “scientific selection” by industry in the case of modern varieties.¹⁸⁰

Fourth, as FAO notes, landraces are characterised by “high levels of genetic diversity.”¹⁸¹ The diversity of landraces may have two dimensions: Diversity between species, and within species. Diversity between species results from “heterogeneity in space and reproductive isolation,” while diversity within species often results from “short-term variations between seasons and ... longer-term climatic, biological, and socio-economic changes” in the practice of traditional agricultural activity.¹⁸² Thus,

¹⁷⁶ Sanjeev Saxena & Anurudh K. Singh, “Revisit to Definitions and Need for Inventorization or Registration of Landrace, Folk, Farmers’ and Traditional Varieties” (2006) 91 *Current Science* 1451.

¹⁷⁷ *Supra* note 172 at 376.

¹⁷⁸ *Ibid.* at 377 [*emphasis added*].

¹⁷⁹ *Ibid.*

¹⁸⁰ AC Zeven, “Traditional Maintenance Breeding of Landraces: 1. Data by Crop” (2000) 116 *Euphytica* 65 at 67.

¹⁸¹ *Supra* note 166 at 19.

¹⁸² *Supra* note 172 at 378.

landraces are balanced populations – “variable, in equilibrium with both environment and pathogens and genetically dynamic.”¹⁸³

In addition, landraces are distinguishable by their genetic adaptability to “local environmental and agro-ecosystem conditions and practices.”¹⁸⁴ The continued cycles of “local planting, harvesting and farmer selection” of landraces has made them, “not only adapted to their environment, both natural and man-made but ...also... to each other.”¹⁸⁵ Related to landraces’ attribute of adaptability is their ability of “yield stability” in marginal environmental conditions.¹⁸⁶

Finally, their unique association with traditional farming systems identifies landraces. As Villa, et al, put it, “traditional farming systems involve traditional cultivation, storage, and use practices, and integrated with these practical skills is incorporated TK about landrace identification, cultivation, storage and uses.”¹⁸⁷ Although earlier conception of landraces was that qualities of particular landraces are the result of natural factors, at present, it is understood that they resulted from an evolutionary process over a period in

¹⁸³ *Supra* note 178.

¹⁸⁴ *Supra* note 172.

¹⁸⁵ See Harlan JR, “Our Vanishing Genetic Resources” (1975) 188 *Science* 618; *supra* note 171; See also OH Frankel, “Natural Variation and its Conservation” in Muhammed A et al, eds, *Genetic Diversity in Plants* (New York: Plenum Press, 1977) at 29 (holding that landraces have the ability “to accumulate resistance genes to limiting factors in the physical and biological environment—drought, cold, diseases, pests”).

¹⁸⁶ “Yield stability” refers to “a genotype’s ability to perform consistently, whether at high or low yield levels, across a wide range of environments.” See A. A. Alsadon & M.A. Wahb-allah, “Yield Stability for Tomato Cultivars and Their Hybrids under Arid Conditions” (2007) 760 *Acta Hort* at 249. M. Halewood, et al, state two ways in which yield stability arises: “First, wide adaptability, as represented by genetic heterogeneity, will enable a population to yield under a wide range of environmental conditions. Secondly, environmental conditions that fluctuate from year to year will tend to favour different genotypes in different years.” *Supra* note 42 at 175.

¹⁸⁷ *Supra* note 172 at 379.

which “one or more human communities are involved.”¹⁸⁸ Farmers’ practice of sowing, harvesting and selecting seeds, through which landraces are developed and maintained, contrast with “modern agricultural techniques” characterised by large scale production and intensive agro-chemical inputs.¹⁸⁹

Usually lumped together under “landrace” are such specific categories of crops as wild species and farmers’ variety,” also referred to as “folk variety.” Such a broad categorization precludes clear-cut definitions, making it difficult to describe farmers’ seeds with sufficient accuracy for purposes of adopting legal and policy measures for their protection. Therefore, it is worth noting that landraces relate to, but are distinct from, a number of other crop products, namely, wild species and farmers’ varieties. Wild species are agro-biodiversity resources that are “used by humans in their wild state – such as timber, medicinal plants and rattans taken from the forest – or which are removed from the wild but kept in a genetically unaltered state.”¹⁹⁰ The term “wild” should not imply absence of human influence and management of these resources. Though considered to be wild, they are “actually carefully nurtured by people,” albeit less intensively than those cultivated in their fields.¹⁹¹

¹⁸⁸ *Supra* note 42 at 185.

¹⁸⁹ *Supra* note 172 at 379. Fernandez lists examples of particular farming practices frequented by most indigenous people and local communities, such as planting mixtures, blending, sowing wild relatives, conscious hybridizing and the allowance of clones to flower that would lead to a change in the genetic constitution of the populations. See Pamela G. Fernandez, “Seed Systems, Indigenous Knowledge Systems and Genetic Diversity” in J. Schneider, ed, *Indigenous Knowledge in Conservation of Crop Genetic Resource* (Proceedings of an International Workshop, Cisarua, Bogor, 30 January–3 February).

¹⁹⁰ Lyle Glowka et al, *A Guide to the Convention on Biological Diversity* (Geneva: IUCN, 1994) at 20.

¹⁹¹ *Supra* note 165 at 18; also, see Arturo Gómez-Pompa & Andrea Kaus, “Taming the Wilderness Myth” (1992) 42 *BioScience* 271 at 272 (holding that “much wilderness has long been influenced by human activities”).

Farmers' variety is often (and mistakenly) used to refer to "landrace," and vice-versa.¹⁹² In its technical use, "farmers' variety" refers to those "cultigens that are comparatively homogeneous and stable for specific trait(s) for which they have been evolved by the farmers/communities."¹⁹³ Unlike landraces, therefore, farmers' varieties may fulfil the pre-requisites of uniformity, stability, and distinctness. The basic difference between "farmers' varieties" and "landraces" is that "farmers' varieties" are specialized groups of landraces developed by innovative farmers or communities who have, "in their acumen, selected or genetically manipulated" the crops through intervention for specific qualities or characters.¹⁹⁴ In this sense, they resemble cultivars. Unlike cultivars, however, farmers' varieties are developed through an informal way of continued use of farmers' knowledge over many generations.¹⁹⁵

2.6.2 HANDICRAFTS

The technical definition of "agricultural products," as seen above, includes products derived from primary agricultural products. Among other agricultural products, GIs are credited with the protection of different kinds of handicrafts.¹⁹⁶ The term handicraft refers

¹⁹² See for example, the Indian Protection of Plant Varieties and Farmers' Right (PPVFR) Act which defines "Farmers' variety" as a variety which "...is a wild relative or landrace of a variety about which the farmers possess the common knowledge." Also, FAO refers to "farmers' varieties," as being "otherwise known as landraces or traditional varieties." See *ibid.* at 19.

¹⁹³ *Supra* note 178 at 1452.

¹⁹⁴ *Ibid.*

¹⁹⁵ See discussion of "cultivars," above, Section 2.5.

¹⁹⁶ See, for example, T.C James, "Protection of Geographical Indications: The Indian Experience" (2009) 13 Bridges, online: ICTSD < <http://ictsd.org/i/news/bridges/54279/#respond>>; John Satish K., "75 Handicrafts to Get Geographical Indication" Business Standard (14 August 2006) online: Business Standard Limited < <http://www.business-standard.com/india/news/75-handicrafts-to-get-geographical-indication/255337/>>;

to hand-made articles, mostly derived from primary agricultural products which are produced by craftsmen with or without tools, simple instruments or implements operated by the craftsman by hand.¹⁹⁷ As one study observes:

One general problem that we face in studying this [handicraft] sector is the fact that there is really no separate product classification for handicrafts... Because there is no universally accepted definition of the term 'handicraft', it has been used to refer to a very wide range of items, including a broad spectrum of 'gift items,' house ware, home furnishings, products of craft industries, and fashion accessories.¹⁹⁸

Not all kinds of handicrafts are traditional in nature. Traditional handicrafts are distinguished from "industrial handicrafts" in that the former is ingrained in cultural roots. According to the Indian Task Force on Handicrafts, "handicrafts are items made by hand, often with the use of simple tools, and are generally artistic and/or traditional in nature."¹⁹⁹ Garg, et al, provide a conventional list of items that may be included in the category of handicrafts: "[S]uch products as woodwork, jewellery, baskets, needlework, textiles, glassware, carpets, costumes, beadwork, leatherwork, and the use of local herbs and plants for traditional medicine and cosmetics."²⁰⁰

¹⁹⁷ See Ajay K. Garg et al, "A Study of Quality Management in Indian Handicraft Units" (2005) 6 Global Business Review 189 at 190.

¹⁹⁸ Ang R P & Teo J C, "Philippine Export Promotion Policies and their Responsiveness to European Market Conditions: A Case Study of Philippine Handicraft Exports to Belgium and Germany" (ASEAN Business Case Studies No 3, September 1995) at 4.

¹⁹⁹ See Indian Ministry of Textile, "Report of Task Force on Handicrafts Fora" (1989) 674 ODC.

²⁰⁰ See *supra* note 199 at 190. The International symposium on "crafts and the international market" also defined "artisanal products" as:

[T]hose produced by artisans, either completely by hand, or with the help of hand-tools or even mechanical means, as long as the direct manual contribution of the artisan remains the most substantial component of the finished product....The special nature of artisanal products

According to this list and the description that preceded it, traditional handicrafts may lie within the scope of a particular category of TK identified as TCEs.²⁰¹ Some traditional handicrafts have, in the eyes of their makers, exclusive spiritual and cultural significance. Others (such as leather quilts, textiles) may primarily have economic functions.

While it is clear that TKBAPs, like traditional handicrafts, are associated with the cultural and spiritual well-being of most ILCs, the thesis addresses TKBAPs in their significance as a means of supporting the livelihood of these communities, essentially an economic aspect of cultural life. Traditional handicrafts remain cultural expressions, and thus, fall outside of the scope of inquiry in this thesis, as long as – in the eyes of ILCs – they serve the sole purpose of cultural expression or spiritual invocations.

2.7 GEOGRAPHICAL INDICATIONS DEFINED

The term “geographical indications” (GIs) is relatively new. It emerged on the international scene as the center of three highly debated subjects in international negotiations: IP, international trade and agricultural policy. In its ordinary use, the term refers to signs that are deployed in connection with goods to indicate their geographical

derives from their distinctive features, which can be utilitarian, aesthetic, artistic, creative, culturally attached, decorative, functional, traditional, religiously and socially symbolic and significant.

UNESCO/ITC, *International Symposium on Crafts and the International Market: Trade and Customs Codification* (Manila, October 1997) CLT/CONF/604/7.

²⁰¹ As previously indicated, the definition of TCEs is sufficiently broad to encompass handicrafts. See above Section 2.2.1.

origin.²⁰² Typical examples of wellknown GIs from industrialized countries include Roquefort cheese, Idaho potatoes, Champagne, and Port wine. Widely known GIs from developing countries include Basmati rice, Aranyik knives, Darjeeling tea, and Pisco liquor.

Beyond illustrative listing of relevant products, it seems difficult to find an all-inclusive definition for GIs. The use of GIs in the literature reflects differences in the understanding of their nature. Various terms are used to refer to GIs, whereas the use of “geographical indications” itself tends to be ubiquitous. Reflecting on the diverse use of terms in relation to GIs, WIPO remarks that “there is probably no category of intellectual property law where there exists such a variety of concepts of protection as in the field of geographical indications.”²⁰³ A clear understanding of GIs can be established through a study of some of these concepts along with a clarification of the status of GIs in the current IPRs regime. The latter involves a description of the features and nature of GIs, as compared to the conventional forms of IPRs.

In regard to terminology, the discussion in this Section begins with an overview of two interrelated concepts recognized in the earliest international treaties: “appellations of origin” (AO), and “indications of source.”²⁰⁴ The Paris Convention for the Protection of

²⁰² David Vivas Eugui & Christoph Spennemann, “The Treatment of Geographical Indications in Recent Regional and Bilateral Free Trade Agreements” in Meir Perez Pugatch, *The Intellectual Property Debate: Perspectives From Law, Economics and Political Economy* (Cheltenham: Edward Elgar Publishing, 2006) at 305.

²⁰³ WIPO, *Intellectual Property Handbook: Policy, Law and Use* (Geneva: World Intellectual Property Organization, 2004) at 120.

²⁰⁴ The Paris Convention for the Protection of Industrial Property first introduced the term “appellations of origin.” See *The Paris Convention for the Protection of Industrial Property*, 1883, as revised in Stockholm on July 14, 1967, reprinted in 21 U.S.T. 1583, 828 U.N.T.S. 305 [Hereinafter, “Paris Convention”]; see Chapter 5 Section 5.3, below, for discussion of the history of GIs in international law.

Industrial Property, the first international treaty on IP, uses the term “appellations of origin” without providing a formal definition.²⁰⁵ Art. 2 of the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration, however, defines Appellation of Origin (AO) as: “...geographical name of a country, region, or locality, which serves to designate a good originating therein, the quality and characteristics of which are due exclusively or essentially to the geographical environment, including natural and human factors.”²⁰⁶ The Lisbon Agreement also defines “country of origin” as “the country whose name or the country in which is situated the region or locality whose name constitutes the appellation of origin which has given the good its reputation for the quality and characteristic.”²⁰⁷

Thus, an AO is always a name that designates a country, region, or locality. In addition, goods bearing the name should exhibit quality and characteristics attributable to the designated area of geographical origin, such as Champagne wine and Roquefort Cheese, produced in the French districts of Champagne and Roquefort (known for their sparkling and nutritive qualities respectively).

“Indications of source” are mostly utilized to comply with customs regulations. They are covered under the 1891 Madrid Agreement for the Repression of False or Deceptive

²⁰⁵ *Ibid.*

²⁰⁶ Lisbon Agreement, note 128, Chapter 1.

²⁰⁷ *Ibid.* at Art. 2 (2).

Indications of Source of Goods.²⁰⁸ Although the Agreement provides no definition, Article 1(1) clarifies the notion, stating:

[A]ll goods bearing a false or deceptive indication by which one of the countries to which this Agreement applies, or a place situated therein, is directly or indirectly indicated as being the country or place of origin shall be seized on importation into any of the said countries.²⁰⁹

The language used in this provision illustrates, first, a clear emphasis on the link between the “indication” and the “geographical origin” of the product, which may be a certain country or a place in a country.²¹⁰ In addition, the indication in “indications of source” need not necessarily be a geographical name. Words or phrases that directly indicate geographical origin or phrases, symbols or iconic emblems indirectly associated with the area of geographical origin may constitute an indication of source.²¹¹ Third, unlike AO, an indication of source need not represent a particular distinctive or renowned quality associated with the product’s origin.²¹² Therefore, indications of source simply designate the geographical place of origin of a product.²¹³

²⁰⁸ “Paris Convention”, *supra* note 204 also, see *The Madrid Agreement for the Repression of False or Deceptive Indications of Source of Goods*, 14 Apr. 1891, 828 U.N.T.S. 389, online: WIPO <<http://www.wipo.int/treaties/en/ip/madrid/index.html>> at Art. 1 (1) [Madrid Agreement].

²⁰⁹ *Ibid.*

²¹⁰ Dwijen Rangnekar, *Geographical Indications: A Review of Proposals at the TRIPS Council*, UNCTAD/ICTSD Capacity Building Project on Intellectual Property Rights and Sustainable Development, June 2002, at 9 [Rangnekar, “Review”].

²¹¹ *Ibid.*

²¹² The term “indications of source,” therefore, simply refers to signs or expressions that link a product to “a country, a region or a specific place” as exemplified by most commonly used labels, such as “Made in Germany,” “Imported from Japan.” See Lori E. Simon, “Appellations of Origins: The Continuing Controversy” (1983-1984) 5 *Nw J Int’l L & Bus* 132, at 132; “Paris Convention”, *supra* note 204; see

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), is the first to make use of the term “geographical indications” in a binding treaty.²¹⁴ Art. 22.1 of the Agreement provides the most extensive definition of GIs. It states that for its purpose, GIs are “... indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin.” This definition mimics that offered by WIPO, as it encompasses pre-existing notions of “indications of source” and of “appellations of origin.”²¹⁵

The inclusion of GIs in the TRIPS Agreement raises the question whether GIs are part of the conventional IPRs regime. As a primary international agreement setting out minimum standards for “trade-related” intellectual property rights,²¹⁶ the TRIPS Agreement declares that IPRs are private rights.²¹⁷ In its “general provisions and basic

WIPO, *Model Law for Developing Countries on Appellations of Origin and Indications of Source* (Geneva: WIPO, 1975).

²¹³ WIPO defines indications of source as “any name, designation, sign or other indication which refers to a given country or to a place located therein, which has the effect of conveying the notion that the goods bearing the indication originate in that country or place.” WIPO, *Introduction to Intellectual Property: Theory and Practice* (London: Kluwer Law International, 1997) at 18.145.

²¹⁴ The TRIPS Agreement is the first multilateral text to deal with “geographical indications” in a groundbreaking manner. See Daniel Gervais, *The TRIPS Agreement, Drafting History and Analysis*, 2nd ed., (London: Sweet and Maxwell, 2003) at 293. [Gervais, “Drafting History”]

²¹⁵ See Chapter 5 Section 5.3, below, for discussion of the concept of “geographical indications” in the WIPO context; see also WIPO International Bureau, “WIPO Introductory Seminar on Intellectual Property: General Introduction to Intellectual Property Rights” (Paper Presented at a conference organized by the WIPO in cooperation with the Ministry of Commerce and Industry and the Sultan Qaboos University (SQU), Muscat, Oman, April 19, 2004) WIPO/IP/MCT/APR/04/2, para. 5.

²¹⁶ See Chapter 4 Section 4.3.1 below, for discussion on the status of the TRIPS Agreement as a global instrument of intellectual property rights.

²¹⁷ The preamble to the TRIPS Agreement emphasises that “intellectual property rights are private rights” available to legal persons, implying that such rights are generally owned by individuals or corporations, and not by communities, states or nations. See TRIPS Agreement, note 13, Chapter 1, preamble; S. K.

principles,” the TRIPS Agreement also confirms that “intellectual property” refers to all categories of intellectual property.²¹⁸ Given that Section 3 of the Agreement addresses GIs, they are *ipso facto* considered part of IPRs. Therefore, the TRIPS Agreement considers GIs private property rights in the same way as other IPRs.²¹⁹

In spite of the TRIPS Agreement’s categorization of GIs as “private rights,” GIs seem a poor fit with conventional private property rights for a number of reasons.²²⁰ In this regard, it is important to distinguish GIs from trademarks, a category of conventional IPRs that are most similar to GIs in function.²²¹ Trademarks primarily identify individual commercial actors that offer goods and services in the market.²²² Due to the primary recognition of individual persons as rights holders, trademarks bear the hallmarks of IPRs as private property.²²³

Sreedharan, “Reconciling TRIPS with the Convention on Biological Diversity – Indian Perspective” (2004) 2 Business Briefing at 1.

²¹⁸ See TRIPS Agreement, note 13, Chapter 1, Art. 1 (2) (stating that “For the purposes of this Agreement, the term ‘intellectual property’ refers to all categories of intellectual property that are the subject of Sections 1 through 7 of Part II”).

²¹⁹ It is notable that the TRIPS Agreement qualifies its general statement on the private nature of IPRs as being “for the purposes of this Agreement.” See TRIPS Agreement, *ibid.*

²²⁰ See Chapter 3 Section 3.2.2.2 and Chapter 5 Section 5.8 below, for discussion of the defining characteristics of conventional IPRs vis-à-vis GIs.

²²¹ See Chapter 5 Sections 5.5 & 5.6, below, for distinction between trademarks and geographical indications; also see Burkhardt Goebel, “Geographical Indications and Trademarks: The Road from Doha” (2003) 93 TMR 964.

²²² There are circumstances in which trademarks may be used to identify a geographical area of production of the products to which they are applied. However, the use of geographical names as trademarks occurs in exceptional circumstances, whereby the name has acquired a “secondary meaning.” See Chapter 5 Section 5.5.1, below; see also Dev Gangjee, “Quibbling Siblings: Conflicts between Trade Marks and GIs” (2007) 82 Chicago-Kent L Rev 1253.

²²³ This feature of trademarks does not change even in circumstances of collective marks and certification marks because, in both cases, rights holders are necessarily required to form a juridical person. In certification marks, the rights holder is a collective organization which certifies that individual traders that

On the other hand, the “substance of the concept” of GIs is that they are “used to demonstrate a link between the origin of the product to which it is applied and a given quality, reputation or other characteristic.”²²⁴ In this respect, GIs mainly designate products originating from places, towns, regions or countries, instead of from specific private individuals.²²⁵ The place-based nature of GIs rights allows ILCs to establish collective rights over traditional resources in a defined geographical area, without a need to identify particular rights holders. The amenability of GIs to the tradition of collective production and collective decision-making is an important factor that does not allow for the categorization of GIs as private property rights.²²⁶

Second, rights holders do not own GIs in the same context that they own trademarks. In the protection of GIs, “ownership” mainly relates to protection based on a spatial tie that allows for the exercise of TK-based systems and practice in a collective and participatory process in a geographical area.²²⁷ In trademarks, and in most other IPRs,²²⁸

use the mark meet specified standards. In collective marks, the rights holder is usually an association or a cooperative which owns the mark on behalf of its members. In both cases, ownership of the marks or indications is attached to individuals that must be incorporated to form a legal person. See Chapter Section 5.5 & 5.6, below; also see Daniel J. Gervais, “The Internationalization of Intellectual Property: New Challenges from the Very Old and the Very New” (2002) 12 *Fordham Intell Prop Media & Ent LJ* 929 at 953 [Gervais, “Internationalization”]; Elisabeth Barham, “Localization within Globalisation: Better Protecting Geographical Indications to Favour Sustainable Development” (Comments offered for the 2004 Annual WTO Public Symposium ORIGIN Round Table on Geographical Indications, Geneva, 27 May 2004) [Barham, “Localization”].

²²⁴ WIPO, *The Definition of Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Ninth Session, Geneva, November 11 to 15, 2002) SCT/9/4, para. 3.

²²⁵ See Chapter 5 Section 5.5.1, below, for more discussion on this.

²²⁶ See text accompanying *infra* note 193, Chapter 5.

²²⁷ See *ibid*, for discussion of the collective dimension of GIs.

²²⁸ See GRAIN, “The TRIPS Review at A Turning Point?” (2003): online: <<http://www.grain.org/es/article/entries/104-the-trips-review-at-a-turning-point>>

however, “protection” means enforcing private and exclusive economic control in order to prevent others from using or reproducing the mark in relation to products.²²⁹ The protection of GIs does not necessarily exclude other persons or groups from the use of the GIs. Rather, all producers in the area to which the GI refers have the right to use the indication for products that originate from the area (subject to relevant standards of production).²³⁰ Therefore, “property” in the context of GIs is construed in a strict sense of “rights to something rather than to the thing that is ‘owned’” (and thus always exclusionary, in a private property context).²³¹

²²⁹ For discussion of the common characteristics of the rights known as intellectual property rights, see Gervais, “Internationalization”, *supra* note 223 at 953. In light of the characterization of IPRs as private rights, it is important to note that this thesis makes a technical distinction in the use of the terms IP and IPRs. IPR is a bundle of legal rights recognized for creations and innovations that receive a measure of legal protection. IPRs may, therefore, refer to only aspects of knowledge that fulfill the requirements of existing IP law including, in the context of this thesis, the TRIPS Agreement’s description of IPRs as “private rights” that have individuals as rights holders. In general, IP can be considered as referring to “anything coming from the working of the human brain,” irrespective of the identity of the knowledge holder.

In clarifying IP as a legal concept in a comment on WIPO’s FFMs, the Future Harvest Centres, supported by the Consultative Group on International Agricultural Research (CGIAR) remark that “IP is a set of tools, a means by which we attempt to achieve certain objectives.” The Future Harvest Centres identify societal, environmental and cultural objectives that may be achieved through an IP system for protecting TK. Similarly, the thesis assesses the “instrumentality” of IP for protecting TK and TKBAPs. See description of “intellectual property” in international treaties *infra* note 244; WIPO, *Intellectual Property Needs and Expectations of Traditional Knowledge Holders: WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999)* (Geneva: World Intellectual Property Organization, 2001) at 209. See technical distinction between the use of the terms IP and IPRs in Nicola Lucchi, “Intellectual Property Rights in Digital Media: A Comparative Analysis of Legal Protection, Technological Measures, and New Business Models under EU and US Law” (2005) 53 *Buff L Rev* 1111 at nn.4; Ian J Lloyd, *Information Technology Law*, 4th ed, (Oxford: Oxford University Press, 2004) at 282.

²³⁰ See Chapter 6 Section 6.4.1 below, for discussion of conditions for the protection of GIs; also see Chapter 5 Sections 5.5 & 5.6, below, for distinction between trademarks and geographical indications; also see Burkhart Goebel, “Geographical Indications and Trademarks: The Road from Doha” (2003) 93 *TMR* 964.

²³¹ Darrell Addison Posey & Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities* (Ottawa: IDRC, 1996).

Third, GIs differ from trademarks and other conventional IPRs in that they are not freely transferable. The non-transferability of GIs is a fundamental distinguishing feature because the justification for most forms of conventional IPRs lies in the subject matter being freely transferable with minimum transaction costs.²³² As opposed to most IPRs, GIs are not transferrable through assignment, mortgage or licensing, even if similar goods are manufactured outside the area that the GI designates.²³³

As the above discussion shows, GIs lack the defining attributes of most IPRs. In addition, GIs have unique features that distinguish them from the conventional forms of IPRs.²³⁴ In their evolution in national jurisdictions, GIs have historically been considered a special form of IP that have relevance for public policy objectives in agricultural development.²³⁵ GIs are conceptualized as “publicly-oriented” rights that have particular

²³² See William M. Landes & Richard A. Posner, “Trademark Law: An Economic Perspective” (1987) 30 J L & ECON 265 at 281 ff.; William M. Landes & Richard A. Posner, *The Economic Structure of Intellectual Property Law* (Cambridge: Harvard University Press, 2003) at 317.

²³³ Irene Calboli, *Expanding the Protection of Geographical Indications of Origin under TRIPS: Old Debate or New Opportunity?* Marquette University Law School Legal Studies Research Paper NO. 06-19 (2006) at 187.

²³⁴ Most of these features accommodate the defining characteristics of TK. See Section 2.2.4, above, for discussion of essential characteristics of TK; also see Chapter 5 Section 5.8, below, for discussion of the interface between GIs and TK.

²³⁵ See discussion in Chapter 5 Section 5.5.2. In the aforementioned AIPPI study, the report reveals that “a number of Group Reports (Belgium, Brazil, France, Latvia, Luxembourg, Portugal, Russia, Slovenia, Spain, Thailand) state that a GI is best seen as a public good or a collective right. The Slovenian Group speaks of a collective property right, the French Group of a sui generis right. A number of Groups (Belgium, Bulgaria, Croatia, Germany, Luxembourg, Malaysia, New Zealand, Norway, Russia, Spain, Sweden, Switzerland, UK) point out that anyone may use a GI so long as the goods in respect of which the GI is used meet the specific geographic and quality requirements set forth by the law. The Group Reports from Mexico, Peru and Venezuela note that the GI right belongs to the state and the state may authorize the use of such right. AIPPI Working Committee, *Summary Report on Question Q191: Relationship Between Trademarks and Geographical Indications 3* (2006) online: AIPPI <<https://www.aippi.org/download/committees/191/SR191English.pdf>>.

relevance for preserving cultural heritage and conserving agricultural systems for multiple benefits.²³⁶

As the discussion in Chapter Five regarding GIs in the EU shows, the “public property” nature of GIs relates to their use for protecting the collective interest of tradition-based agricultural producers, preserving cultural heritage, and conserving agricultural systems for multiple benefits.²³⁷ On these grounds, public authorities play active role in efforts to enforce and defend GIs rights, beyond their traditional role of setting up legislative, regulatory and institutional frameworks.²³⁸

²³⁶ See Daniele Giovannucci, et al, *Guide to Geographical Indications: Linking Products and their Origins* (Geneva: International Trade Centre, 2009) at 20, 15-16 & 36; FAO and SINGER-GI, *Linking People, Places and Products: A Guide for Promoting Quality Linked to Geographical Origin and Sustainable Geographical Indications* (Rome: FAO, 2009) at 185; Barham, “Localization”, *supra* note 223; also see Chapter 6 Sections 6.5, 6.6, 6.7 & 6.8. For opposing views on the public aspect of GIs, see Jim Chen, “A Sober Second Look at Appellations of Origin: How the United States Will Crash France’s Wine and Cheese Party” (1996) 5 Minn J Global Trade 29; Amy P. Cotton, “123 Years at the Negotiating Table and Still No Dessert? The Case in Support of TRIPS Geographical Indication Protections” (2007) 82 Chi-Kent L Rev 1295; Antoine Vialard, “Regulating Quality Wines in European and French Law” (1999) 19 N Ill U L Rev 234 (stating that the French AOs system is “a legal governmental institution consisting of a distinctive, recognized symbol, controlled and protected by laws in the public interest. This distinctive symbol is inalienable and indefeasible from the land. It defines precise geographic areas for production as well as quality factors tied to those areas, which are under state control.”); also see Louis Lorvellec, “You’ve Got to Fight for Your Right to Party: A Response to Professor Jim Chen” (1996) 5 Minn J Global Trade at 69 (noting, AOs “can never be privately owned, and this is where [AOs] law differs from intellectual property law”); see *supra* note 222 (observing, “[t]here is an argument to be made that the appellation sub-species of a GI, as conceived in European law, may be a qualified type of collective or communal property”) at nn. 10 quoting Walter J. Derenberg, “The Influence of the French Code Civil on the Modern Law of Unfair Competition, (1955) 4 Am J Comp L 1 at 16; also see Chapter 5 Section 5.5.2, below, for discussion GIs in the context of European countries’ context.

²³⁷ See discussion in Chapter 5 Section 5.5.2.; see also Bernard O’Connor, *The Law of Geographical Indications* (London: Cameron May, 2004) at 311 [O’Connor, “Law of GIs”]; Lisa P Lukose, “Rationale and Prospects of the Protection of Geographical Indication: An Inquiry” (2007) 12 Journal of Intellectual Property Rights 212-223; B. Sylvander, “Quality of Life and Management of Living Resources: Key Action n° 5 Sustainable agriculture, fisheries and forestry, and integrated development of rural areas including mountain areas” (WP 7 Final Report Synthesis and Recommendations, 2004) at 8.

²³⁸ See Chapter 5 Section 5.5 below, for discussion of the role of public agencies in the protection of GIs in the EU context; also see FAO, *Creating Conditions for the Development of GIs: The Role of Public Policies*, online: FAO <<http://www.fao.org/docrep/012/i1057e/i1057e07.pdf>>.

The “public property” nature of GIs is reiterated in a survey of national laws undertaken by the International Association for the Protection of Intellectual Property (AIPPI). The majority of countries that participated in this study confirmed that GIs are not generally associated with private ownership.²³⁹ The “public property” nature of GIs seems to be recognized in the US as well, at least as far as domestic GIs for wines are concerned.²⁴⁰ In view of the foregoing discussion, the categorization of GIs as private property rights seems to reflect the disagreement generated during the negotiation for the inclusion of GIs in the TRIPS Agreement.²⁴¹

²³⁹ The summary of responses from the study indicates that “the majority of Group Reports (Australia, Belgium, Brazil, Estonia, Germany, Latvia, Luxembourg, Malaysia, Peru, Portugal, Republic of Korea, Singapore, Switzerland, and UK) note that the registration of a GI does not confer a property right [and that] there is generally no individual ‘proprietor’ or ‘right holder.’” AIPPI Working Committee, *Summary Report on Question Q191: Relationship between Trademarks and Geographical Indications 3* (2006) online: AIPPI < <https://www.aippi.org/download/committees/191/SR191English.pdf>>; also see *supra* note 222.

²⁴⁰ The California Court of Appeals considered whether GIs for US wines with brand names “Napa Ridge,” “Rutherford Vintners,” and “Napa Creek Winery” are private property for the purposes of the American takings jurisprudence. In dismissing Bronco Wine Co.’s claim that the State’s prohibition of the use of the brand names with the word “Napa” unless at least 75 percent of the grapes used to make the wine are from Napa County deprived the Co. of a proprietary interest without compensation, the Court stated that the labels are highly regulated by state and possessed only a part of the traditional hallmarks of private property. See *Bronco Wine Co. v. Jolly*, 29 CalRptr 3d 462 at 493-496 (3rd Appellate Dist 2005).

²⁴¹ In the negotiation process for the TRIPS Agreement, the US prepared a text that does not include specific provisions for GIs, arguing that the provisions of the TRIPS Agreement on trademarks provide sufficient and necessary protection for GIs. However, the European Commission prepared a text that includes a Section specifically devoted to GIs that reflect its regional legal framework for GIs in *sui generis* form. The Dunkel Draft, aimed at concluding the Uruguay Round of negotiations, introduced “a take it or leave it final draft of the TRIPS Agreement” as a compromise between the two approaches. While recognizing the US position which treats geographical indications, like trademarks, as private rights, the Dunkel Draft specifically addressed GIs in Section 3. See Chapter 5 Section 5.3 below, for discussion of the negotiation history of GIs in the Uruguay Round; also see Carlos María Correa, *Research Handbook on the Protection of Intellectual Property under WTO Rules* (Cheltenham: Edward Elgar Publishing, 2010) at 149; Gervais, “Drafting History” *supra* note 214 at 293; Peter-Tobias Stoll et al, *WTO - Trade-Related Aspects of Intellectual Property Rights* (Boston: Martinus Nijhoff Publishers, 2009) at 380.

Despite their inclusion as a category of IP in the TRIPS Agreement, some express doubts regarding the status of GIs as a form of IP.²⁴² In the absence of authoritative definitions in international treaties for what constitutes “intellectual property,” the involvement of “intellectual input” is a common denominator in a list of the subject matters protected by IP law.²⁴³ As such, whether GIs are a form of IP is often determined based on the question whether human factors of production (i.e. skills and knowledge in the process of production) contribute to the “given quality, reputation, or other characteristic” of a product that is the subject matter of GIs protection.²⁴⁴ It is sometimes argued that the subject matters of GIs, TKBAPs in most cases, lack the “intellectual process” that is prerequisite for IP protection.²⁴⁵ Focusing on the *geographic* aspect of GIs, some believe that GIs do not accommodate “human innovation” in the making of relevant products to justify the recognition of GIs as a form of IP.²⁴⁶

²⁴² See Stephen Stern, “Are GIs IP?” (2007) 29 EIPR 39 at 40; Raustiala & Munzer, note 18, Chapter 1; Jim Chen, “A Sober Second Look at Appellations of Origin: How the United States Will Crash France's Wine and Cheese Party” (1996) 5 Minn J Global Trade 29.

²⁴³ In general, international treaties do not seek to define “intellectual property.” They provide a list of subject matters protected by intellectual property rights, most of which emphasize that the items are products of “intellectual activity.” See *Convention Establishing the World Intellectual Property Organization*, 26 April 1970, 21 UST 1770; 828 UNTS 3, Art. 2 (VIII) (providing that “‘intellectual property’ shall include . . . rights resulting from intellectual activity . . .”); also see WIPO, *supra* note 215, para. 1 (stating that objects of IP are “creations of the human mind, the human *intellect*”); WIPO, *Introduction to Intellectual Property: Theory and Practice* (London: Kluwer Law International, 1997) at 3 (stating “intellectual property means the legal rights which result from intellectual activity”); WIPO, *What is Intellectual Property?* online WIPO: <<http://www.wipo.int/about-ip/en/>> (affirming that “Intellectual property (IP) refers to creations of the mind”).

²⁴⁴ See Dwijen Rangnekar, “The Intellectual Properties of Geography” (2009) 31 European Intellectual Property Review 537 at 537 [Rangnekar, “Intellectual Properties”].

²⁴⁵ See Stern, *supra* note 242 at 40; Debabrata Basu & Rupak Goswam, “Scientific and Traditional Knowledge: the Agenda for ‘Mutual Validation’” in R.M. Sarkar, eds, *Indigenous Knowledge in Traditional Folk Panorama: Genesis, Development and Applications* (New Delhi: Serials Publications, 2011).

²⁴⁶ Raustiala & Munzer, note 18, Chapter 1; also see Lee Bendekgey & Caroline H. Mead, “International Protection of Appellations of Origin and Other Geographic Indications” (1992) 82 Trademark Rep 781.

Other parts of this thesis address the recognition of the “traditional knowledge” element of most TKBAPs as “intellectual inputs” in the protection of IP in general, and of GIs in particular.²⁴⁷ Suffice to say in this Section that the recognition of indications of source and AOs in IP treaties administered by WIPO shows that GIs have acquired the status of a distinct form of IP.²⁴⁸ WIPO initially adopted the term “geographical indications” to describe the subject matter of a new treaty for the international protection of IP concepts represented by indications of source, and AO.²⁴⁹ Although the TRIPS Agreement characterizes all IPRs as “private property,” Art. 22 of the Agreement

²⁴⁷ See Section 2.8, below, for discussion of traditional knowledge as an element of the subject matter of GIs; Chapter 4 Section 4.7, below; Chapter 5 Section 5.10, below, for discussion of normative justifications for the recognition of TK as embedded and embodied in TKBAPs.

²⁴⁸ In a pre-TRIPS era, three multilateral treaties administered by WIPO contain provisions for the protection of geographical indications. These are the Paris Convention for the Protection of Industrial Property, the Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods, and the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration. See Chapter 5 Section 5.3 below, for discussion of the evolution of GIs in international regimes; see Madrid Agreement, *supra* note 209; “Paris Convention”, *supra* note 204; Lisbon Agreement, note 128, Chapter 1. The EU officially recognizes GIs as “a type of intellectual property.” See European Commission, “Geographical Indications” online: European Commission: Trade <<http://ec.europa.eu/trade/creating-opportunities/trade-topics/intellectual-property/geographical-indications/>>. Although Canada protects GIs through a trademark-based protection, the Agriculture and Agri-Food Canada recognizes GIs as “a distinct form of intellectual property,” and acknowledges that they are “a type of intellectual property, as are patents, trade-marks and copyright.” See Agriculture and Agri-Food Canada, “Means of Protection of Geographical Indications in Canada” online: Agriculture and Agri-Food Canada <<http://www.agr.gc.ca/itpd-dpci/to-su/4945-eng.htm>>. Also see FAO and SINGER-GI, *supra* note 236 at 185 (concluding that “[a]s an intellectual property right, a *geographical indication* can be considered a collective or *public good*”); Rangnekar, “Intellectual Properties” *supra* note 244; Dwijen Rangnekar, *Geographical Indications and Localization: A Case Study of Feni*, CSGR Report (2009) online: <www.esrc.ac.uk/my-esrc/.../4feff116-d65b-4ed1-8540-9e10c2dfcca9>[Rangnekar, “Feni”]; Barham, “Localization”, *supra* note 223; Eleanor Meltzer, *Geographical Indications: Point of View of Governments* (Worldwide Symposium on Geographical Indications, Organized by the World Intellectual Property Organization & the United States Patent and Trademark Office, San Francisco, California, July 9 to 11, 2003) WIPO/GEO/SFO/03/3 at para 5; Laurence Bérard, Marie Cegarra & Marcel Djama, *Biodiversity and Local Ecological Knowledge in France* (Nancy: Editions Quae, 2006) at 231; Alberto Francisco Ribeiro De Almeida, “Key Differences between Trade Marks and Geographical Indications” (2008) 30 *European Intellectual Property Review* 406 at 411 (noting that “after the TRIPS Agreement, geographical indications can live with autonomy inside the intellectual property law”).

²⁴⁹ WIPO, *supra* note 203 at 18.

recognizes GIs in the same context as that developed in the WIPO process.²⁵⁰ For definitional purposes, therefore, it is essential to clarify the scope of GIs in reference to AOs and indications of source.

GIs are similar to AOs in that both associate the quality of a good to a geographical location that an indication identifies. Whereas Art. 2 of the Lisbon Agreement defines AOs as “the geographical name ... which serves to designate a product ...,” Art. 22.1 of the TRIPS Agreement defines GIs as “indications which identify a good ...” The definition of GIs may include indirect references to geographical locations, such as pictorial symbols – as long as they can identify a good with “a given quality, reputation or other characteristic” as originating in a territory, region or locality in the territory. Thus, in terms of scope, GIs are wider than “appellations of origin” because GIs are not restricted to the name of geographical locations. The “territory” requirement in GIs may also be fulfilled using terms that are suggestive of a geographical origin but are not in themselves place names.²⁵¹ These are sometimes referred to as “indirect geographical indications.”²⁵²

²⁵⁰ See Chapter 5 Section 5.3 & 5.4, below, for discussion of the negotiation context in which the concept of GIs was developed in the WIPO and was included in the TRIPS Agreement. In his article-by-article analysis of the negotiating history of the TRIPS Agreement, Professor Gervais — a former legal officer at the GATT/WTO — confirms that the TRIPS Agreement adopted the concept of “geographical indications” developed in the WIPO process and later adopted by the EC. See Gervais, “Drafting History”, *supra* note 214 at 293. Also see Carlos M. Correa, *Trade Related Aspects of Intellectual Property Rights: A Commentary on the TRIPS Agreement* (Oxford: Oxford University Press, 2007) at 209. Professor Gervais describes the definition of GIs under the TRIPS Agreement as a “groundbreaking nature,” and asserts that the TRIPS Agreement adopts GIs as a more general concept than AOs and indications of source. See Daniel J. Gervais, “Legislative Comment – The TRIPS Agreement: Interpretation and Implementation” (1999) 21 *European Intellectual Property Review* 156 at 159.

²⁵¹ For example, GIs may include the use of Mozart's face to represent chocolates from Salzburg. Attesting to this, recent decision by the European Court of Justice (ECJ) indicated that GIs need not be geographic names, or, even need not be “geographic” indication *per se*. The ECJ upheld the legality of GIs registration of “Feta”, holding that white cheese soaked in brine and called “Feta” must originate from specific area in

Unlike AO, GIs are not restricted to products that have a quality and characteristics due to natural and human factors associated with the geographical environment of their place of origin. They may include goods that have a given quality, reputation or other characteristic, which is essentially attributable to its geographical origin. The alternative listing of “quality, reputation or other characteristic,” as opposed to cumulative and restrictive requirement of “quality and characteristics” for AOs in the Lisbon Agreement, indicates that in GIs, each one of the factors – “quality,” “reputation” or “characteristic” – is on its own an adequate condition for the grant of protection. In AOs, a combination of natural *and* human factors forms the basis for the requirement of the product’s distinctive quality *and* characteristics.²⁵³

The determination of “quality” is a subjective notion, which depends on individuals’ appreciation. It is difficult to find an exhaustive list of criteria that takes into account the cultural diversity of the international community to determine a universally acceptable quality. Accordingly, domestic authorities determine “quality,” taking into account

Greece. The name “Feta” derives from Italian, and it means “slice” or “piece.” See ECJ, Kingdom of Denmark and Federal Republic of Germany v. Commission of European Communities (‘Feta II’) C-465/02 and C-466/02, [2005] online: <<http://www.curia.eu.int/>>.) In a questioner for a study sponsored by the WTO, Australia stated that geographical indications indirectly linked to a specific region may, either expressly or impliedly, be included in the Australian Food Standards Code Spirit Standard. The same study indicates that the EC system for the protection of GIs for agricultural products and foodstuffs provides that certain traditional non-geographical names designating an agricultural product or a foodstuff originating in a region or a specific place can also be considered as designations of origin. Also, according to the study, the common Andean regime contained in Decision 344 includes within its definition of “appellation of origin” names which, without being that of a specific country, region or place, relates to a specific geographical area. See Council for Trade-Related Aspects of Intellectual Property Rights, *Review under Article 24.2 of the Application of the Provisions of the Section of the TRIPS Agreement on Geographical Indications: Summary of the Responses to the Checklist of Questions*, IP/C/W/253, (4 April 2001), para. 34.

²⁵² Council for Trade-related Aspects of Intellectual Property Rights, *Ibid.*

²⁵³ See WIPO, *The Definition of Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Ninth Session, Geneva, November 11 to 15, 2002) SCT/9/4, para. 21 [*emphasis added*].

specific factual circumstances of the good. As WIPO confirms, the term “quality” appears less to imply a certain quality of the product – qualitative criterion – than a characteristic – legal criterion, which allows the distinguishing of the product because of its geographical origin.²⁵⁴ In this respect, a precise description of the product or of the method for obtaining it may determine “quality.”²⁵⁵

GIs are not restricted to products having quality. They also apply to products that enjoy a given reputation. As Rangnekar notes, the separate reference to “reputation” allows for the possibility of protecting reputable goods that may not have a particular quality or characteristics and, thus, may not have qualified for the protection of an appellation of origin.²⁵⁶ These factors must contribute to the distinctiveness of the product, i.e., its capacity to distinguish itself from other products, and the reputation must be assessed, *inter alia*, from the consumer’s perception of the indication.²⁵⁷ The next Section discusses the significance of “reputation” in GIs to protect TKBAPs.

²⁵⁴ WIPO, *Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Tenth Session, Geneva, April 28 – May 2, 2003) SCT/10/4 at 10[WIPO, “Geographical Indications”].

²⁵⁵ WIPO suggests that description of the product may/should include:

[T]he raw material, the main physical (Q2 value7, pH, shape, weight, appearance, consistency), chemical (presence/absence of additives, residues and so on), microbiological (use of such and such ferments, presence of germs) and/or organoleptic (smell, taste, texture, color, visual and sensory ... profile) characteristics of the product...the actual presentation of the product (fresh, frozen, preserved).

Ibid. para. 20.

²⁵⁶ Dwigen Rangnekar, *Demanding Stronger Protection for Geographical Indications — The Relationship between Local Knowledge Information and Reputation*, United Nations University Discussion paper series 2004/11(2004) at 11 [Rangnekar, “Demanding”].

²⁵⁷ WIPO, “Geographical Indications,” *supra* note 253, paras 23-25.

It is important to note that both AOs and GIs involve the protection of a reputation.²⁵⁸ In case of AOs, the reputation is a consequence of the “quality and characteristic” that the product exhibits by virtue of its geographical origin and the consumer preference associated with it, as represented by the common law conception of “goodwill.”²⁵⁹ In GIs, however, reputation may not necessarily relate to the “quality” of the product. Reputation is protectable subject matter in GIs, independently of the “quality” of a product.

It is pointed out that the specific inclusion of “reputation” in Art. 22.1 of TRIPS did not exist in the first draft presented to the Brussels Ministerial Conference in December 1990; rather, the wording is found in the consolidated text that became the basis for the final agreement.²⁶⁰ The wording of the TRIPS Agreement in this regard is influenced by the negotiating agenda of the European Council, which advocated for wide inclusion of GIs in the TRIPS, and closely resembles the definition of GIs in the European Council’s Regulation on Geographical Indications of 1992.²⁶¹

²⁵⁸ Though the definition of AO does not include “reputation” as a distinct protectable subject matter, Art. 1(2) of the Lisbon Agreement makes a reference to “reputation.” See Lisbon Agreement, note 128, Chapter 1.

²⁵⁹ Most in the common law jurisdiction protect AO through the law of passing off, which incorporates the element of shared goodwill. See Daniel R. Bereskin, “Legal Protection of Geographical Indications in Canada” (Paper Presented at the Intellectual Property Institute of Canada’s Annual Meeting, Halifax, September 18, 2003).

²⁶⁰ See Rangnekar, “Review”, *supra* note 210 citing MTN.GG/NG11/W/76; reprinted in Gervais, “Drafting History”, *supra* note 214. It is to be noted that the wording of the TRIPS Agreement in this regard is consistent with and closely resembles the definition of GIs in the EC’s 1992’s Regulation on Geographical Indications. See EU, Council Regulation (EC) 2081/92 of 14 July 1992 On the Protection of Geographical Indications and Designations of Origin for Agricultural Goods and Foodstuffs, [1992] O.J. L/ 208; also see Stoll et al, *supra* note 241 at 380.

²⁶¹ EU, Council Regulation 2081/92, *ibid.*, Art. 5–6.

GIs protect some “other characteristic” of the good even when the characteristic does not relate to the “quality” or “reputation” of the product. “Other characteristic” refers to any element that contributes to the typicality of the product. As WIPO affirms, the most frequently cited factors that contribute to the products’ typicality include natural and human factors.²⁶² The natural factors are the physical attributes of the soil, weather, geographical location, and the like. The combination of TK-based practices with these attributes result in specificity to a particular area, represented by the French conception of “*terroir*.”²⁶³ The recognition of the human factors in areas that GIs designate – as the discussion in the following Section indicates – makes it possible to protect products whose unique characteristic derives from TK-based practices in a defined territory.²⁶⁴

In both AOs and GIs, attributes of the product should be linked to a geographical origin, somehow. The Lisbon Agreement provides that to qualify for protection, the “quality and characteristics” of the product should be “due exclusively or essentially to the geographical environment, with its inherent natural and human factors.”²⁶⁵ Under TRIPS too, the dual requirements that “indications identify a good as originating in the territory,” and that the “quality, reputation or other characteristic of the good is essentially attributable to its geographical origin,” suggest a qualitative link between the product and the geographical environment in which it is found. The difference in the degree of the

²⁶² WIPO, “Geographical Indications,” *supra* note 253 at para 27-30.

²⁶³ See Chapter 5 Section 5.5.2, for discussion of “*terroir*.”

²⁶⁴ Matthijs Geuze, “Protection of Geographical Indications – International Legal Framework” (Presentation at National Roving Seminars on Geographical Indications, Chennai, January 29-30, 2009) at 14 online: WIPO <www.wipo.int/edocs/mdocs/geoind/en/wipo_geo_in_09/wipo_geo_in_09_geuze.ppt>.

²⁶⁵ Lisbon Agreement, note 128, Chapter 1.

products' attachment to the geographical origin – in AOs, “due exclusively or essentially to” and in GIs, “essentially attributable to” – demonstrates that the requirement in GIs is less restrictive.

The foregoing discussion shows that at the international level, the TRIPS Agreement provides the most extensive definition of GIs as a field of protection distinguished from trademark. Despite this recognition, the Agreement does not require WTO Members to provide a uniform means of protection of GIs at the national level.²⁶⁶ The TRIPS Agreement allows WTO Members to choose the means of protection which, in most cases, can be either trade mark-based or *sui generis* form.²⁶⁷ According to the needs and specific circumstances that necessitate the recognition of GIs rights, domestic authorities may choose to implement GIs either in their *sui generis* form or in a trademark-based model.²⁶⁸ In GIs implementation necessitated by the “publicly-oriented” goals of TK-based agricultural policy, the *sui generis* form of GIs protection best captures the

²⁶⁶ The distinction between GIs as a concept and the means for their protection reflects the manner in which the negotiations for GIs were conducted in the WTO. As a compromise between the US, which opposed the inclusion of a specific provision for GIs protection, and the EC, which demanded the inclusion of comprehensive GIs rules on the methods for their protection, The TRIPS Agreement recognized GIs at two levels of protection under Art 22 (1). In Art. 22 (2), the Agreement left the means of protection of GIs to the exclusive jurisdiction of Member states. See TRIPS Agreement, note 13, Chapter 1, Art 22. Also see Gervais, “Drafting History”, *supra* note 214 at 293; Sergio Escudero, *International Protection of Geographical Indications and Developing Countries*, South Centre Trade Working Paper No. 10, (2001) at 23.

²⁶⁷ See Chapter 5 Section 5.5, below, for discussion of the protection of GIs in national and regional jurisdictions; also see WIPO, *supra* note 203 at 120 (noting that “[w]ith the exception of design law, there is probably no category of intellectual property law where there exists such a variety of concepts of protection as in the field of geographical indications.”)

²⁶⁸ See *ibid*; also, see section on “Protection of Geographical Indications on the National Level” in WIPO, *Introduction to Intellectual Property: Theory and Practice* (Geneva: World Intellectual Property Organization, 1997) at 233ff.

essentials that accommodate the subject matter of GIs as currently recognized under Art. 22 of the TRIPS Agreement.²⁶⁹

The broad scope of the concept of GIs is relevant to the primary inquiry in this thesis in that it makes it possible for GIs systems to accommodate the traditional practice of communities who, due to their intergenerational occupancy, are identified with a particular territory.²⁷⁰ A wider understanding of GIs accommodates the diversity of “creativity” that is abundant in the realm of TK systems.

The literature on relevant international agreements often uses the term “geographical indications” to refer to “appellations of origin,” and “indications of source” and vice-versa. The rights and obligations flowing from those instruments exist only in relation to the category of “geographical indication” to which the instrument in question refers.²⁷¹

²⁶⁹ See Irina Kireeva & Bernard O’Connor, “Geographical Indications and the TRIPS Agreement: What Protection is Provided to Geographical Indications in WTO Members?” (2010) 13 J World Intell Prop 275 at 293; also see Section 2.8, below; Chapter 6 Section 6.5, 6.6, 6.7 & 6.8; also see Chapter 7 Section 7.2.

²⁷⁰ See discussion of the territorial feature of TK, above, Section 2.2.4; See WIPO, *The Definition of Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Ninth Session, Geneva, November 11 to 15, 2002) SCT/9/4, para. 7. In a final note on the difference between AOs and GIs, it can readily be observed that Article 22.1 of the TRIPS Agreement applies to “goods”, whereas Article 2 of the Lisbon applies to “products.” It is argued that the use of the term “goods,” rather than “products” – a correction made while preparing the Brussels negotiating draft – suggests that services are excluded from the scope of GI protection. Beyond this, however, the words “product” and “good” are interchangeably used in the vocabulary of economic theory and, thus, the distinction between the two does not carry weight for the purpose of the thesis. A close study of the Uruguay Rounds proposals for the TRIPS Agreement finds that the initial term of preference was “good.” See Art. 19 of the EC proposal of March 29, 1990 (MTN.GNG.NG11/W/68) and Art. 9 of the proposal of 14 May 1990 by Argentina and others (MTN.NGN.NG11/W/71). However, the words “product” and “good” are often used interchangeably in the vocabulary of economic theory; see discussion in Rangnekar, “Review”, *supra* note 210 at 3.

²⁷¹ WIPO, *Geographical Indications: Historical Background, Nature of Rights, Existing Systems for Protection and Obtaining Effective Protection in Other Countries* (Standing committee on the Law of Trademarks, Industrial Designs and Geographical Indications, 6th session, March 12-16, 2001) SCT/6/3, para. 8 [WIPO, “Historical Background”].

This thesis adopts the understanding of GIs within the wider meaning that the TRIPS Agreement accords to them under Art. 22.

2.8 THE LINK BETWEEN GEOGRAPHICAL INDICATIONS AND TRADITIONAL KNOWLEDGE

At this juncture, it is appropriate to ask why it is necessary to focus on GIs as likely candidates to protect TKBAPs. The second part of the thesis will examine unique aspects of the relationship between GIs and TK. This section briefly elucidates the definitional aspects of GIs that have relevance to the analyses on the applicability of GIs to TKBAPs.

A fundamental definitional issue of GIs that has bearing in discussion concerning TK involves the role of GIs in accommodating TK embedded in agricultural practices associated with a geographic location. As an indication, a GI directly identifies the product's origin, but the identification also points to "quality, reputation or other characteristics" attributable to the product. The capability of GIs in this respect can be illustrated by reference to the linguistic, and consequently, juristic distinction between denotation and connotation of signs that GIs signify. Before the introduction of GIs to the international discourse on IP, Ladas pointed to a distinction between "indication" and "appellation." In his words, these are not "grammatically, as well as juristically...identical."²⁷² Noting that "appellation, in French as well as in English, means a name given to a person or thing," he outlines the legal consequence of the distinction: "[Appellation] evokes the idea of susceptibility of appropriation or the idea of

²⁷² See Stephen Pericles Ladas, *Patents, Trademarks, and Related Rights: National and International Protection, Volume III* (Cambridge: Harvard University Press, 1975) at 1574.

a property right;” whereas, “indication” refers to “what serves to indicate or point at something, or informs.”²⁷³

Building on this, Taubman suggests that the definition of GIs under the TRIPS Agreement seems both to “name” a product (signified by the term “identifies”), and to convey information about it (indicated by the use of the term “as originating in” a certain location).²⁷⁴ This seems consistent with the expanded definition of GIs under the TRIPS Agreement, which enables GIs to be an indication as well as a name (and thus, a fit subject of property). Denoting a product’s origin, a GI connotes additional properties. The denotation protected by the law relates to the physical geographic location – “the sign the product points to in the eyes of the consumer” – while the connotation refers to “the penumbra of associations and qualities [i.e., in the words of the TRIPS Agreement, “qualities, reputation or other characteristics] that ...[could be] ‘usurped’, ‘appropriated’, ‘diluted’ or ‘imitated.’”²⁷⁵

The International Bureau for the Protection of Intellectual Property (IBPI) acknowledged the distinction between the rights included in “indications” and those in “appellation” as early as 1958. The IBPI pointed out that the bundles of rights protected by the term “indications” existed “primarily for the benefit of consumers, to prevent their deception with regard to the geographic origin of the product concerned.”²⁷⁶ On the other hand, protection of rights under “appellations” is concerned with “the class of producers

²⁷³ *Ibid.*

²⁷⁴ Taubman, note 127, Chapter 1 at 238.

²⁷⁵ *Ibid.*

²⁷⁶ 60 *Actes de Lisbonne (1963)* cited in *supra* note 272 at 1574.

or manufacturers of such products” and therefore, IBPIP noted, protection is sought “in their [(producers’)] interest...against the improper use of such appellations by persons not entitled to their use.”²⁷⁷ The benefit for consumers relates to the minimization of the “search costs” of consumers who would “identify” the product due to the sign the GI signifies. The producers’ benefits relate to proprietary interests derived from the inherent characteristics of the product connoted by the GI.

As a primary focus of assessing GIs’ utility to protect TKBAPs, this thesis explores both dimensions of GIs because of expected multifunctionality of a protection regime to satisfy the needs and desires of ILCs. A particular emphasis is put on the “connotation” dimension because the content of the rights in this respect exhibits “many of the hallmarks of a property right” that may be of key importance to serve the needs of ILCs as producers of distinct agricultural products.²⁷⁸

On the link between GIs and TK, this thesis proceeds from the hypothesis that TKBAPs can be subject matters of “connotation” and “denotation” in GIs. The relationship between GIs and TK in the sense of GIs’ instrumentality to protect TKBAPs, in this manner, emanates from the wide definitional scope of GIs under the TRIPS Agreement, which provides for consideration of the following relevant factors.

²⁷⁷ *Ibid.*

²⁷⁸ William Albert Van Caenegem, “Registered Geographical Indications: Between Intellectual Property and Rural Policy, Part I” (2003) 6 J World Intell Prop 699 at 702. See the significance of the distinction between “denotation” and “connotation” in terms of utilizing GIs to protect TK in below Chapter 5 Section 5.5.3.

First is the specific inclusion of “reputation” as an independent protectable subject in the TRIPS Agreement.²⁷⁹ Maskus points out that “reputation” in the protection of GIs may not necessarily arise from “physical characteristics emanating from climate or soil quality” of the product, but other factors in the geographical origin such as “local inventiveness.”²⁸⁰ The WIPO also indicates that “reputation” with respect to GIs mainly relates to “the history and historical origin of the product” – an attribute more attuned to products of TK.²⁸¹

Among the criteria considered in delimiting a geographical origin for GIs protection, the aforementioned WTO survey lists human features such as “choice of varieties and methods of production; historical and traditional factors; the technical skill of the makers or processors; methods of production, preparation and processing.”²⁸² Although assessment of the reputation based on these factors may differ according to the systems and the products, and can be made on a local, national, or international basis, WIPO suggests that a local reputation be sufficient for protection to be granted.²⁸³ This highlights the unique aspects of GIs that enable local ILCs to reject globalized methods of production for the sake of production methods suited to their traditions and adapted to local context.

²⁷⁹ Rangnekar, “Review”, *supra* note 210.

²⁸⁰ Keith E. Maskus, “Observations on the Development Potential of Geographical Indications” (Paper Prepared for the U.N. Millenium Project Task Force on Trade, March 2003), online: <www.ycsg.yale.edu/documents/papers/Maskus.doc> at 1[Maskus, “Observation”].

²⁸¹ WIPO, “Geographical Indications,” *supra* note 253, para. 24.

²⁸² *Ibid.*, para. 35 and notes 78 to 98.

²⁸³ *Ibid.*, para. 26.

The increased acceptance – in the protection of GIs – of products’ “reputation or other characteristics” has earned GIs a recognition as “unique expression[s] of local agro-ecological and cultural characteristics,” and “not exclusively commercial or legal instruments.”²⁸⁴ The Secretariat of WIPO’s Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) recognizes GIs as instruments that protect human factors pertaining to agricultural products – beyond physical factors specific to a geographical location – in its observation that:

Geographical indications, as defined by Article 22.1 of the TRIPS Agreement ... rely not only on their geographical connotation but also, essentially, on human and/or natural factors (which may have generated a given quality, reputation or other characteristic of the good). In practice, human and/or natural factors are the result of traditional, standard techniques, which local communities have developed and incorporated into production. Goods designated and differentiated by geographical indications, be they wines, spirits, cheese, handicrafts, watches, silverware, and others, are as much expressions of local cultural and community identification as other elements of traditional knowledge can be. Additionally, the geographical reference of a geographical indication or appellation of origin is an indirect means of appropriation of traditional techniques that otherwise might be in the public domain.²⁸⁵

For those reasons, current approaches in IP and development view GIs broadly as: “[A]n integral form of rural development that [offer] a valuable framework for powerfully advancing commercial and economic interests while potentially integrating local needs that are anchored in cultural tradition, environment, and broad levels of participation.”²⁸⁶

²⁸⁴ See Giovannucci, et al, *supra* note 236 at 5; See also discussion in below Chapter 6 Section 6.6 & 6.8.

²⁸⁵ See WIPO, “Geographical Indications,” *supra* note 253, para. 40.

²⁸⁶ See Giovannucci, et al, *supra* note 236 at 5.

These observations serve as a basis to examine the applicability of GIs as legal mechanisms for protecting TKBAPs.

It is important to point out that the concept of “protection” has various contexts of application in legal scholarship in general, and in the discourse on TK in particular. The next section provides a brief explanation of the concept of “protection” as deployed in this thesis.

2.9 WHAT IS “PROTECTION?”

The WIPO IGC recognizes that when used in relation to TK, the term “protection” takes on many different meanings.²⁸⁷ WIPO distinguishes between “protection” in the context of IP, on the one hand, and the “safeguarding” or “preservation” of cultural heritage, on the other.²⁸⁸ The latter generally refers to “the identification, documentation, transmission, revitalization, and promotion of tangible or intangible cultural heritage in order to ensure its maintenance or viability.”²⁸⁹ This involves mobilizing resources to ensure the continued survival and perpetuation of cultural heritage which may include, for example, the physical protection of cultural items from degradation or loss. In this context, “protection” has a wider scope that includes objectives and activities that can be realized through non-IP laws and programs.

²⁸⁷ WIPO, *Draft: Gap Analysis on the Protection of Traditional Knowledge* (May 30, 2008) online: <http://www.wipo.int/export/sites/www/tk/en/igc/pdf/tk_gap_analysis.pdf>, para. 7.

²⁸⁸ *Ibid.*, para.22.

²⁸⁹ *Ibid.*, para.22.

Protection in the context of IP refers to the establishment of “legal measures that limit the potential use of the protected material by third parties.”²⁹⁰ Such limitation may be accomplished either through the grant of rights to prevent their use altogether (exclusive rights), or through the setting out of conditions for their permitted use (such as subjecting it to equitable compensation or a right of acknowledgement). The analysis in this thesis of the instrumentality of GIs to “protect” TKBAPs employs legalistic and IP-context of the use of the term.

In discussion regarding the policy implication of the use of GIs, however, the meaning of “protection” definitely lies out of the context of IP. In analysing the contribution of GIs to protect biodiversity, for example, “protection” applies to “safeguarding” or “preserving.” In other words, protection of TKBAPs in the second context implies protecting the social, economic, cultural and biodiversity context of TK so that the knowledge continues to guide and sustain the life of ILCs.²⁹¹ Thus, the term “protection” should be understood in this thesis in both contexts and, where necessary, a distinction should be made to identify the applicable context.

In the legalistic sense of “protection” of TK, the modes of protection may take the following two forms: Either the protection for exploitation of TK with new-fangled or extant IP regimes, or the protection against exploitation of this knowledge by preventing

²⁹⁰ *Ibid.*, para. 7.

²⁹¹ GRAIN, *supra* note 228.

its misappropriation with similar IP regimes.²⁹² The former is referred to as positive protection, while the latter is deemed defensive protection.²⁹³

The positive protection of TK mainly responds to the interest of ILCs to benefit from the commercialization of their knowledge. This system aspires to create “an entitlement system” through mechanisms such as *sui generis* legislation, contractual agreements and/or the use of existing IP systems of protection that enable ILCs to protect and promote their knowledge.²⁹⁴

The defensive protection of TK, however, mainly responds to the needs of ILCs who may want the preservation of TK as an end in itself.²⁹⁵ These groups and communities are more concerned with the cultural, social, and psychological harm caused by the unauthorized use of their TK by outsiders than its economic implication.²⁹⁶

The “positive” and “defensive” aspects of “protection” are mainly distinguished based on the policy guidance under which “protection” is pursued. The distinction between the defensive and positive dimensions of “protection” is not quite clear; the two are not necessarily mutually exclusive. Although IP protection does not necessarily comprise the grant of property rights, when property rights exist, protection “enable[s] the rights holder either positively to exercise the rights himself, to authorize others to do so (i.e., the right

²⁹² Visser, note 4, Chapter 1, at 212.

²⁹³ *Ibid.*

²⁹⁴ See Arezzo, *supra* note 114.

²⁹⁵ See Graham Dutfield, “TRIPS-related Aspects of Traditional Knowledge” (2001) 33 Case Western Reserve Journal of International Law 233 at 240.

²⁹⁶ Arezzo, *supra* note 114 at 212.

can be licensed), and/or to prevent others from doing so.”²⁹⁷ The distinction between the two appears insignificant, as the protection of TKBAPs through IP for the purposes of exploitation by its holders may also entail the protection of such knowledge against misappropriation by “outsiders.”²⁹⁸ With the recognition of this fact, the use of the term “protection” in relation to GIs in the thesis focuses on the “positive” dimension.

2.10 THE GLOBAL ECONOMY

Finally, the inquiry in this thesis is conducted in the framework of the global economy. The term “global economy” represents an interdisciplinary concept which, according to Gereffi, “no single academic field can encompass ... nor can any afford to ignore.”²⁹⁹ Because of the vast scope of the concept, he observes, “those pundits who focus on the global economy are likely to be classified as academic interlopers; they run the risk of being too simplistic if they advance forceful hypotheses and too eclectic if they try to capture the full complexity of their topic.”³⁰⁰ There is no need to indulge in the difficult venture of identifying and drawing the analytic construct of the “global economy.” Defining the term is important, however, to clarify and delimit the scope and level of analysis in this thesis.

²⁹⁷ See WIPO, *Draft: Gap Analysis on the Protection of Traditional Knowledge* (May 30, 2008) online: <http://www.wipo.int/export/sites/www/tk/en/igc/pdf/tk_gap_analysis.pdf>, para. 15. For example, it is rightly pointed out that moral rights under copyright as well as compulsory (non-voluntary) licenses in copyright do not regulate whether the work may be used or not in the traditional “property rights” sense.

²⁹⁸ Arezzo, *supra* note 114 at 212.

²⁹⁹ Gary Gereffi, “The Global Economy: Organization, Governance, and Development” in Neil J. Smelser & Richard Swedberg, eds. *The Handbook of Economic Sociology* (Chechester: Princeton University Press and Russell Sage Foundation, 2005) at 160.

³⁰⁰ *Ibid.*

In his seminal article, Stuart Hart identifies “three different, overlapping economies” as being constituents of the global economy.³⁰¹ The first part of the global economy is what he identifies as “the market economy,” namely, “the familiar world of commerce comprising both the developed nations and the emerging economies.”³⁰² This is the part of the economy where one-sixth of the world’s population lives, and is characterized by massive consumption and waste -- accounting for “ more than 75% of the world’s energy and resource consumption and ... the bulk of industrial, toxic, and consumer waste.”³⁰³ Hart describes the second economy as “the survival economy,” and says it refers to “the traditional, village-based way of life found in the rural parts of most developing countries.”³⁰⁴ This economy is composed of a large segment of the world’s population, “mainly Africans, Indians, and Chinese who are subsistence oriented and meet their basic needs directly from nature.”³⁰⁵ The third part of the economy is “nature’s economy, which consists of the natural systems and resources that support the market and the survival economies.”³⁰⁶ According to Hart, the three economic spheres have, beyond the realm of interdependence, now become “worlds in collision, creating the major social

³⁰¹ Stuart L. Hart, “Beyond Greening: Strategies for a Sustainable World” (1996) Harvard Business Review 66 at 69.

³⁰² *Ibid.*

³⁰³ *Ibid.*

³⁰⁴ *Ibid.*

³⁰⁵ Hart, *ibid.*

³⁰⁶ *Ibid.*

and environmental challenges facing the planet: climate change, pollution, resource depletion, poverty, and inequality.”³⁰⁷

The classification of the constituents of the global economy in the manner Hart outlines coincides, more or less, with the current socio-economic setting in the global sphere. However, the three classifications do not necessarily exist in geographic isolation from each other. Segments of the “survival economy” can be found in the villages of the “market economy,” such as the indigenous peoples of the Western World and the millions of poor people living in the urban centers of the “market economy.” Likewise, manifestations of the “market economy” can also be seen in the geographic terrains of the “survival economy,” especially in the economies of highly developing countries.³⁰⁸

In terms of clarifying the interactions between states and global actors, and the ways the three constituents of the global economy operate –which the thesis is devoted to analyzing – the global economy can be looked at from different levels: Macro-level, mid-level, and micro-level.³⁰⁹ At the macro-level, “international organizations and regimes that establish rules and norms for the global community” define the parameters of the global economy.³¹⁰ These include international regimes that consider various aspects of

³⁰⁷ *Ibid.*

³⁰⁸ For the reason stated in this paragraph, no distinction is intended in this thesis between indigenous peoples and local communities in developing countries and those in developed countries, unless the context indicates otherwise.

³⁰⁹ See *supra* note 299 at 160.

³¹⁰ *Ibid.*

law and policy on IP.³¹¹ These regimes include, in the context of this thesis, the WTO, the WIPO, the FAO, the CBD, and similar international and regional organizations.

At the mid-level are found “countries and firms” for whom the global economy is “the arena in which countries compete in different product markets.”³¹² Those groups that are characterised by their growing “resistance to globalization: ... consumer groups, activists, and transnational social movements” dominate the micro-level.³¹³

The focus of inquiry in this study delves into the role of a wide range of stakeholders such as farmer and producer groups, different levels of national governments, inter-governmental organizations, non-governmental organizations, and beyond. For this reason, the analysis in the thesis addresses issues germane to the constituents of the global economy across the three levels as described above.

³¹¹ The term “international regime” is derived from the discourse on regimes theory developed by political scientists in the early 1980s regarding international relations. According to Helfer, the regime theory describes the situations in which self-interested states create international regimes to derive benefits from cooperating under conditions of relative anarchy in international law. See Laurence R. Helfer, “Mediating Interactions in An Expanding International Intellectual Property Regime” (2004) 36 Case W Res J Int’l L 123 at 124. The thesis consistently adopts the phrase “international regimes” to refer to both international regimes, consisting of substantive, procedural, and compliance components of rules and norms in an area, and international organizations which monitor, manage, and modify the operation of the regimes. The organizations are, for ease of use, occasionally referred to as “forums” in this thesis. In addition, the phrases “legislative framework” and “legal framework” are also used interchangeably to refer to not only legislation but all legal instruments through which GIs, TK, and TKBAPs are protected. For a clear exposition on international norms and international organizations, see Oran R. Young, “Regime Dynamics: The Rise and Fall of International Regimes” (1982) 36 International Organization 277-297; Robert E. Breckinridge, “Reassessing Regimes: The International Regime Aspects of the European Union” (1997) 35 Journal of Common Market Studies 173-185.

³¹² *Ibid.*

³¹³ *Ibid.*

2.11 CONCLUSION

The purpose of this Chapter is twofold. The first has been to outline the boundaries and meanings of fundamental concepts and terms employed in the thesis. In the course of accomplishing this task, this Chapter also delineates the conceptual framework within which to assess the applicability of GIs to protect TKBAPs.

The Chapter explored the manifold ways in which TK is conceived, and the modalities through which the complex subject of TK may be understood. The discussion about biodiversity and its derivative, agro-biodiversity, revealed the closeness and interconnectedness of ILCs with their surrounding physical environments. The discussion indicated that TK and TK-based practices are associated with diverse and varied components of biodiversity, of which TKBAPs are a part.

As a modality of the legal protection of rights, the instrumentality of GIs in the protection of TKBAPs depends on the scope and nature of protection they offer to the rights holders. The discussion in this Chapter has highlighted the juristic features of GIs that serve as bases for analysis in Chapters Five and Six in relation to the protection of TKBAPs. Those features of GIs will be weighed in assessing the effectiveness of GIs to protect TK, and will be used to compare GIs with other instruments of legal protection for TK identified in Chapter Four.

Before proceeding further in the analysis of the protection of TK, it is pertinent to ask why, after all, we see the need for the protection of TK and TKBAPs. There has been enormous interest in, and tremendous amount of energy currently being devoted to the protection of TK in the international arena. As Coombe observes, thousands of books,

articles, commentaries, research studies, databases, declarations, and resolutions deal with the protection of TK.³¹⁴

The drive to protect TK arose from the realization, in recent times, of the relevance of TK in several policy contexts. In light of the multifarious ways in which protection for TK is currently being sought, the next Chapter explores the justifications, goals, and motivations behind the quest for a comprehensive and system-wide protection of TK in the contemporary global legal order. In the context of the impacts and implications of global economic conditions for ILCs, the thesis also outlines the objectives that a protection system of GIs must serve.

³¹⁴ See Rosemary J. Coombe, “The Recognition of Indigenous Peoples’ and Community TK in International Law” (2001) 14 *St. Thomas L Rev* 275 at 279 [Coombe, “Recognition”].

CHAPTER 3 PROTECTING TRADITIONAL KNOWLEDGE: IMPERATIVES AND CHALLENGES

3.1 INTRODUCTION

This Chapter provides context for understanding the initiatives to protect TK and TKBAPs, and elucidates the conditions that justify such efforts. The discussion also outlines fundamental issues that are relevant for understanding the role and expectations regarding the potentials of GIs to protect TKBAPs.

Based on the different experiences of ILCs in various jurisdictions, different rationales may be advanced to justify the legal protection of TK. To demonstrate the need for the international protection of TK and TKBAPs, the discussion in this Chapter focuses on common aspects of the global economic pressures that justify the need for a protection regime for TK systems in general, and TKBAPs in particular. The discussion highlights the importance and multi-dimensional role of TK in different spheres of economic activity, and outlines threats and challenges that ILCs encounter in multiple settings due to a lack of protection for their knowledge systems and their derivative production outputs.

The Chapter contains six Sections. Section 3.2 discusses general trends and specific problems that underlie demands to protect TK at the international level. To this end, the importance of TK systems is discussed in socio-economic, environmental and cultural contexts. This Section also identifies problematic areas that a protection system for TK needs to address, namely, the problems of biopiracy and misappropriation of TK.

Section 3.3 spells out the circumstances under which the demands for the protection of TK may be understood in the specific context of TKBAPs. This Section outlines the impacts of technology-led transformations of agricultural production on the political economy of ILCs that depend on traditional agricultural practices.¹ Thus, Section 3.3 focuses on the impact of global economic factors on agricultural production at the local level in the domains of economic and biodiversity policy. Also examined are the impacts of transformations of agricultural production in other policy contexts, such as achievement of food security, and preservation of cultural identity. Section 3.4 turns attention to a range of factors that affect traditional agricultural producers in global markets. Together, the analyses in the Sections 3.3 and 3.4 provide bases to evaluate – in subsequent Chapters – the role of GIs to address economical, biodiversity, cultural and food security challenges that ILCs expect to address in their efforts to secure protection for their TKBAPs.

Taking into account contemporary trends in global economic integration, Section 3.5 highlights the need for mechanisms to recognize and to protect the value of TKBAPs. Section 3.6 summarizes attempts to recognize and to capture the value of TKBAPs through widely accepted strategies of product differentiation. In their nature, these strategies are non-legal, but they are similar to GIs in their goal to improve the socio-economic condition of traditional agricultural communities. Section 3.7 examines the implementation of these strategies to address economic difficulties among traditional

¹ The phrase “technology-led transformation of agriculture,” used in the thesis interchangeably with “high-tech-driven transformation,” refers to modern agricultural production that is facilitated through advancements in molecular genetics. See discussion below Section 3.3.

agricultural communities. The discussion in this Section generates lessons that may be relevant for appraising the implementation of GIs to protect TKBAPs.

3.2 JUSTIFYING THE PROTECTION OF TRADITIONAL KNOWLEDGE

It is easy to assume that it is necessary to protect TK.² A working document of WIPO lists a number of objectives that the international protection of TK would serve.³ However, detailed interrogation of the justifications for protecting TK helps to establish clear grounds as to why TK should be protected. An analysis that goes beyond a listing of general purposes and objectives helps to explain the scope, nature, and modality of TK protection with a degree of certainty.⁴

The protection of TK is justified because of the value and importance that TK offers to ILCs and to the world population at large. In addition, TK protection is required in

² See Shubha Ghosh, “Reflections on the Traditional Knowledge Debate” (2003) 11 *Cardozo J Int’l & Comp L* 497; Srividhya Ragavan, “Protection of Traditional Knowledge” (2001) 2 *Minn Intell Prop Rev* 1.

³ These objectives include:

- (i) Recognize value; (ii) Promote respect; (iii) Meet the actual needs of traditional knowledge holders; (iv) Promote conservation and preservation of traditional knowledge; (v) Empower holders of traditional knowledge and acknowledge the distinctive nature of traditional knowledge systems; (vi) Support traditional knowledge systems; (vii) Contribute to safeguarding traditional knowledge; (viii) Repress unfair and inequitable uses; (ix) Concord with relevant international agreements and processes; (x) Promote innovation and creativity; (xi) Ensure prior informed consent and exchanges based on mutually agreed terms; (xii) Promote equitable benefit-sharing; (xiii) Promote community development and legitimate trading activities, (xiv) Preclude the grant of improper intellectual property rights to unauthorized parties; (xv) Enhance transparency and mutual confidence; (xvi) Complement protection of traditional cultural expressions.

See WIPO, *The Protection of Traditional Knowledge: Draft Objectives and Principles* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Tenth Session Geneva, November 30 to December 8, 2006) WIPO/GRTKF/IC/10/5 at 3-5.

⁴ See Catherine Bell & Robert K. Paterson, *Protection of First Nations Cultural Heritage: Laws, Policy, and Reform* (Vancouver: UBC Press, 2009) at 230.

response to the threats and challenges posed to TK systems from global environmental, social, and economic pressures. As part of the broader theme of inquiry in this thesis, the examination of justifications for the protection of TK provides insight into the nature, scope, and form of protection required. The discussion that follows examines the protection of TK according to the aforementioned two scenarios.

3.2.1 THE VALUE AND IMPORTANCE OF TRADITIONAL KNOWLEDGE

A primary idea in the protection of TK is that the immense value TK has to its owners and to the rest of humankind necessitates its protection.⁵ In other words, since TK has played – and still plays – a vital role in the livelihood of millions of people in the world,⁶ its recognition and protection would serve diverse cultural, biodiversity, socio-economic, and scientific purposes.⁷

3.2.1.1 *Cultural Significance*

A key justification to protect TK relates to the cultural significance that it has for ILCs.⁸ TK is important to its holders as an integral part of their cultural heritage.⁹ Many

⁵ See Coombe, “Recognition”, note 314, Chapter 2, at 280 ff.

⁶ Fikret Berkes, Carl Folke & Madhav Gadgil, “Traditional Ecological Knowledge, Biodiversity, Resilience and Sustainability” in C.A. Perrings et al, eds, *Biodiversity Conservation* (Amsterdam: Kluwer, 1995) 281-299; Daniel J. Gervais, “Spiritual but not Intellectual? The Protection of Sacred Intangible Traditional Knowledge” (2003) 11 *Cardozo J Int’l & Comp L* 467-495 [Gervais, “Spiritual”].

⁷ Note 4, Chapter 2 at 6.

⁸ See Howell, note 14, Chapter 2, at 8.

⁹ *Ibid.* at 2.

ILCs consider TK a source of social cohesion, and TK offers a basis for their survival as a community.¹⁰

The demand of ILCs for the prohibition of the misappropriation of TK is, therefore, part of their demand to protect their cultural identity.¹¹ For this reason, the protection of TK is considered part of the implementation of indigenous peoples' rights to maintain and to take part in cultural life as recognized in international human rights instruments.¹² The UN Declaration on the Rights of Indigenous Peoples has recently confirmed that indigenous peoples have the right to “maintain, control, protect and develop” their knowledge.¹³

Indigenous peoples seek the protection of TK as an element of their right to cultural self-determination. In this respect, the protection of TK allows them to thrive in our changing world in ways consistent with their own values and interests.¹⁴ The content of the right to self-determination of ILCs in relation to TK includes:

[T]he right to control land and territory; ii) the right to sacred places; iii) the right to own, determine the use of, and receive accreditation, protection and compensation for, knowledge; iv) the right of access to traditional resources;

¹⁰ Graham Dutfield & Uma Suthersanen, *Global Intellectual Property Law: Commentary and Materials* (Cheltenham: Edward Elgar Publishing, 2008) at 327.

¹¹ See WIPO, “Diverse,” note 82, Chapter 1.

¹² See, for example, *Universal Declaration of Human Rights*, GA Res. 217(III), UN GAOR, 3rd Sess., Supp. No.13, UN Doc. A/810(1948) at Art. 27; *International Covenant on Economic, Social and Cultural Rights*, 19 December 1966, 993 U.N.T.S. 3, Can TS 1976 No. 46, 6 I.L.M. 360, Art.15; CBD, note 1, Chapter 2 at Art. 8(j); *International Labour Organization Convention No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries*, 7 June 1989, reprinted in (1989) 28 I.L.M.1382 at Art. 15(1).

¹³ See note 105, Chapter 2, Art. 31.

¹⁴ See WIPO, “Diverse,” note 82, Chapter 1 at 1.

v) the right to preserve and protect local language, symbols and modes of expression, and vi) the right to self-definition.¹⁵

In sum, the protection of TK would result in concrete realization of the rights of indigenous peoples to preserve their cultural and spiritual identity.¹⁶

3.2.1.2 Contribution to Biological Diversity and Ecological Integrity

In the present time, the prominent ground on which to justify the protection of TK relates to its importance in the maintenance of biological diversity and ecological integrity. In 1987, a United Nations Committee on the Environment and Development report noted the inability of modern science to provide guidelines for managing natural resources. It called for the “recognition of and greater respect for the wisdom inherent in traditional knowledge systems” in this respect.¹⁷ Consequently, TK has received prominent attention in international efforts to protect the environment and to conserve

¹⁵ See “Principles for ‘Equitable Partnerships’ Established by the International Society for Ethnobiology” in Earthmodal, *Dialogue, Advocacy and Community Building for Peace and Sustainability* (08 July 2006) online: < <http://earthmodal.net/em/subs/Dialogue.html>>.

¹⁶ See Stephen B. Brush, “Whose Knowledge, Whose Genes, Whose Rights?” in S.B. Brush & D. Stabinsky, eds, *Valuing Local Knowledge: Indigenous peoples and Intellectual Property* (Washington: Island Press, 1996) at 3.

¹⁷ The report notes:

Their very survival has depended upon their ecological awareness and adaptation... These communities are the repositories of vast accumulations of traditional knowledge and experience that links humanity with its ancient origins. Their disappearance is a loss for the larger society, which could learn a great deal from their traditional skills in sustainably managing very complex ecological systems. It is a terrible irony that as formal development reaches more deeply into rainforests, deserts, and other isolated environments, it tends to destroy the only cultures that have proved able to thrive in these environments.

Quoted in note 127, Chapter 2 at 72.

biodiversity in the aftermath of the Rio Earth Summit.¹⁸ Principle 22 of Agenda 21, which reflects the environmental focus of the summit, recognizes the vital role of ILCs in environmental management and sustainable development because of the alternative answers and solutions they offer in the form of TK.¹⁹

The enormous value of TK in the conservation of biological diversity and in the maintenance of ecological integrity arises from its special characteristics. These characteristics include its existence as “a combination of accumulative knowledge” in peoples’ relationship with nature and its “potential for innovation and adaptation.”²⁰ TK mainly comprises of resource management systems regarding the use of bio-resources as sources of medicine, foodstuffs, and other needs in a manner that, often, has relatively low impacts on the environment.

The practices of ILCs in carrying out economic activities cause minimal impact on biodiversity because most ILCs utilize diverse species in small agricultural units.²¹ With a view to “increase the variety of resources at their disposal,” and to reduce “risks of fluctuations in the abundance” of certain species, ILCs engage in practices aimed at

¹⁸ The “Rio Earth Summit” refers to the 1992 United Nations Summit on Environment and Development which produced five separate agreements, including the Convention on Biological Diversity (CBD). These agreements, as well as subsequent agreements have widely recognized the importance of traditional knowledge to environmental protection and the conservation of biological diversity. See Chapter 4 Section 4.3.3, below.

¹⁹ See Marion Panizzon, *Traditional Knowledge and Geographical Indications: Foundations, Interests and Negotiating Positions*, Working Paper No. 2005/01 (2006) at 12.

²⁰ CBD Secretariat, *Knowledge, Innovations and Practices of ILCs* (Subsidiary Body on Scientific, Technical and Technological Advice, Second Meeting Montreal, 2 to 6 September 1996) UNEP/CBD/SBSTTA/2/7 online: <www.cbd.int/doc/meetings/sbstta/sbstta-02/official/sbstta-02-07-en.doc>, para. 80 [CBD, “Practices”].

²¹ See Russel Lawrence Barsh, “Indigenous Knowledge and Biodiversity” in note 127, Chapter 2, at 75.

increasing species diversity in their territories.²² As the discussion in Section 3.3 below indicates, such practices contrast with biotechnology-led agricultural practices which, essentially, change the “structure of ecosystems” by focusing on the large scale production and collection of “fewer species.”²³ For these reasons, international environmental agreements, such as the CBD, expressly recognize the interdependence between TK and biodiversity, and seek to preserve the latter by affording protection to the former.²⁴

As far as the conservation of biodiversity is concerned, TK provides, in the words of the CBD Secretariat, “unquantifiable, but probably substantial, opportunities for identifying improved techniques for conservation and sustainable use of biological diversity.”²⁵ Thus, it is clear that the protection of TK closely relates to the protection of the environment and living resources, as the content of TK is mostly embedded in the biological resources and ecosystems themselves.²⁶

3.2.1.3 Contribution to Scientific Discovery and Biotechnology Development

So far, we have seen that the protection of TK is important to ILCs in the context of their cultural and custodial obligations. The protection of TK is also important to

²² *Ibid.*

²³ *Ibid.*

²⁴ See CBD, note 1, Chapter 2, preamble, Art. 8 (j).

²⁵ CBD, “Practices,” *supra* note 20, para. 80.

²⁶ Erica Daes, “Protection of the Heritage of Indigenous peoples” cited in David R. Downes & Sarah A. Laird, *Innovative Mechanisms for Sharing Benefits of Biodiversity and Related Knowledge: Case Studies on Geographical Indications and Trademarks* (Paper Prepared for UNCTAD Biotrade Initiative, 1999) at 4.

humankind in general because biodiversity resources and their underlying TK systems contribute to scientific discovery and biotechnology development.²⁷

Technological advancement in genetic engineering since the 1980s has allowed researchers to find and to move genetic sequences responsible for particular traits in a plant, or even to move traits from one species to another.²⁸ Referred to as rDNA genetic engineering, this system of genetic manipulation at the molecular level has opened a new era of technological adventure in biological resources, a transformation unmatched by the technique of hybridization, which has been the most prevalent practice in the agricultural sector in earlier times.

TK plays a crucial role in providing important leads for the development of processes that result in modern plant breeding and biotechnology. Screening a huge quantity of molecules that have potential for agricultural and pharmaceutical success through processes of biotechnology is prohibitively expensive in terms of both time and financial resources, because drastic uncertainty of potential traits requires the screening of all plants.²⁹ The valuable leads provided by TK save time, money, and investment for the biotech industry as to any research and product development in the areas of specialty food

²⁷ See William D. Coleman & Melissa Gable, "Agricultural Biotechnology and Regime Formation: A Constructivist Assessment of the Prospects" (2002) 46 *International Studies Quarterly* 451–595; David R. Downes, "New Diplomacy for the Biodiversity Trade: Biodiversity, Biotechnology, and Intellectual Property in the Convention on Biological Diversity" (1993) 4 *Touro J Transnat'l L* 1; Charles R. McManis, "The Interface between International Intellectual Property and Environmental Protection: Biodiversity and Biotechnology" (1998) 76 *Wash U L Q* 255 [Mcmanis, "Interface"].

²⁸ See Keith Aoki, "Seeds of Dispute: Intellectual Property Rights and Agricultural Biodiversity" (2009) 3 *Golden Gate U Env'tl LJ* 79 at 137.

²⁹ Arezzo, note 115, Chapter 2, at 373.

and beverage, pharmacy, agriculture, horticulture, personal care, and cosmetics.³⁰ For example, a study reveals that one-quarter of all currently available prescription drugs are derived from plants and more than half are developed from natural compounds; yet, less than one percent of all of the plants have been tested for medicinal properties.³¹

WIPO recognizes the enormous contribution of TK in this regard, noting; “TK often provides researchers with a lead to isolate valuable active compounds within biological resources.”³² Had it not been for TK, the impact of biotechnological advances in molecular genetics would have been limited due to high costs or, in the alternative, vast biological resources might remain unexplored.³³ It is in the best interest of the scientific community, therefore, to acknowledge the need to protect TK, although it might not be in line with the short-term and profit-oriented plan of most in the industry.³⁴

3.2.1.4 Improving and Preserving Socio-economic Conditions

The protection of TK is also justified in view of significant benefits in broad economic terms. In terms of achieving socio-economic ends, WIPO notes that the protection of TK involves three major stakeholders in the global economy: “[ILCs] that

³⁰ O’Connor, note 8, Chapter 1, at 679.

³¹ Rainer Fischer & Neil Emans, “Molecular Farming of Pharmaceutical Proteins” (2000) 9 *Transgenic Research* 279 at 299 (noting that close to one quarter of prescription drugs are still of plant origin); William D. Coleman & Melissa Gabler, “Agricultural Biotechnology and Regime Formation: A Constructivist Assessment of the Prospects” (2002) 46 *International Studies Quarterly* 451–595; see also Noah Zerbe “Biodiversity, Ownership, and Indigenous Knowledge: Exploring Legal Frameworks for Community, Farmers, and Intellectual Property Rights in Africa” (2005) 53 *Ecological Economics* 493 at 500.

³² WIPO, “Diverse,” note 82, Chapter 1 at 7.

³³ See *Ibid.*

³⁴ For this line of justification to protect TK, see Coombe, “Recognition”, note 314, Chapter 2 at 281.

generate the knowledge; national governments that have recognized its value for development and the national economy; and local, national, and transnational commercial interests seeking access to it.”³⁵

In the first instance, the protection of TK fulfills the socio-economic goal of preserving the basic means of survival for a large sector of the world’s population in satisfying their needs for medicine, food, and health. In many developing and in the least-developed countries, traditional medicines provide the only affordable treatment available to the economically disadvantaged.³⁶ The world’s poor satisfy eighty-five per cent of their needs for food, fuel, shelter, and medicine from TK-based biodiversity resources.³⁷ Similarly, half of the world population relies on TK and crops for their food supply, while approximately 1.4 billion rural people need farm-saved seeds and local agricultural knowledge just to continue to eat.³⁸ In this regard, the protection of TK addresses concerns about fairness and equity in international economic relations.³⁹ It responds to the sense of perplexity aroused by the “moral gap”⁴⁰ in global governance whereby over 1.2 billion people live on less than a dollar a day; forty-six per cent of the world’s population

³⁵ See WIPO, “Diverse,” note 82, Chapter 1 at 7.

³⁶ According to the World Health Organization (WHO) Fact sheet, up to 80 percent of the population in developing countries depends on traditional medicines to help meet their healthcare needs while 70 per cent-80 per cent of the population in many developed countries has used some form of alternative or complementary medicine. See WHO, *Fact Sheet N°134: Traditional Medicine* (December 2008), online: <<http://www.who.int/mediacentre/factsheets/fs134/en/>>.

³⁷ Coombe, *supra* note 5.

³⁸ *Ibid.*

³⁹ Cottier & Panizzon, note 151, Chapter 1, at 371.

⁴⁰ David Held, “Cosmopolitanism: Globalisation Tamed?” (2003) 29:4 *Review of International Studies* 465 at 468.

live on less than two dollars a day; and twenty per cent of the world's population enjoy over eighty per cent of the global wealth.⁴¹

The significance of TK as a means of achieving socio-economic objectives is not limited to developing countries. Even in industrialized countries, traditional medicine serves as an alternative or complementary medical resource to a large sector of the population. Posey reports that:

Americans spend more on complementary approaches than on hospitalization, while Australians pay out more on alternative medicines than pharmaceuticals. In Britain, the Department of Health reported in 1995 that 40 percent of General Practice partnerships in England provide access to complementary medicine for their National Health Service (NHS) patients, and 24.6 percent actually make NHS referrals for complementary medicine.⁴²

At the macro-economic level, TK holds enormous commercial potential for biodiversity-rich countries on the cusp of development.⁴³ With the increase in the commercial applicability of TK in pharmaceutical and agricultural biotechnology, researchers continue to claim rights on the use of genetic resources and the accompanying TK as a basis for commercial production of agricultural, health care, and cosmetic products.⁴⁴ The lack of protection of TK has prompted “the unregulated and unmonitored

⁴¹ David Held & Anthony G. McGrew, *The Global Transformations Reader: An Introduction to The Globalization Debate* (Cambridge: Wiley-Blackwell, 2003) at 40.

⁴² Note 127, Chapter 2, at 11; see also Timothy M. Swanson, *Intellectual Property Rights and Biodiversity Conservation: An Interdisciplinary Analysis of the Values of Medicinal Plants* (Cambridge: Cambridge University, 1998).

⁴³ Some 80 per cent of the world's biological diversity, of which only 1 per cent of 250,000 known species of tropical plant have been tested, lie in the tropical and sub-tropical regions. See Velasquez G. & Boulet P, “Essential Drugs in the New International Economic Environment” (1999) 77 Bulletin of the World Health Organization.

⁴⁴ See Note 54, Chapter 1. 56 per cent of the top 150 prescribed drugs in the United States (US) are based on chemicals derived from plants while 40 per cent of Western pharmaceutical products are found to

taking of biodiversity [through] an ever expanding intellectual property regime.”⁴⁵ As a result, developing countries suffer from significant economic losses in two respects.

First, developing countries lose significant incomes, as their constituents are deprived of the opportunity to benefit from economic exchanges in several ways.⁴⁶ Many find it difficult to quantify the enormous economic value of TK in terms of marketability and commercial use. For example, the use of Indian landraces adds, on a global scale, a value of about US\$400 million per year, while the estimate for handicrafts alone for the year 2000 was up to US\$2 billion in export and \$1 billion in national markets.⁴⁷ In addition, developing countries lose about US\$5 billion each year in unpaid royalties from the use of TK.⁴⁸ In the pharmaceutical and agricultural sectors also, a rare quantitative estimate of the economic value of TK provides:

More than two-thirds of the world’s plant species (of which at least 35,000 are estimated to have medicinal value) come from developing countries. At least 7, 000 medicinal compounds used in Western medicine are derived from plants, and the value of germplasm from developing countries to the pharmaceutical industry in the early 1990s was estimated to be at least US\$

contain Asian plant extracts alone. See “Biopirates Patent Traditional Wisdom” *Inter Press Service*, (8 October 1998) online: <<http://www.ips.org>>.

⁴⁵ Coombe, “Recognition”, note 314, Chapter 2, at 315; also, see O’Connor, “Law of GIs”, note 239, Chapter 2, at 373.

⁴⁶ See O’Connor, *ibid.* at 373.

⁴⁷ *Ibid.* at 16; Sunder, “Invention”, note 4, Chapter 1; Graham Dutfield, “Legal and Economic Aspects of Traditional Knowledge” in Keith E. Maskus & Jerome H. Reichman, eds, *International Public Goods and Transfer of Technology Under A Globalized Intellectual Property Regime* (Cambridge: Cambridge University Press, 2005) 504-05 quoted in *Ibid.* at nn.71.

⁴⁸ Visser, note 4, Chapter 1 at 28; see also David Conforto “Traditional and Modern-Day Biopiracy: Redefining the Biopiracy Debate” (2004) 19 *J Envtl L & Litig* 357 at 359-361.

32 billion per year. Yet developing countries were paid only a fraction of this amount for the raw materials and knowledge they contribute.⁴⁹

In the US alone, genetic resources from developing countries contribute to 15 major crops, which are valued at US\$50 billion in annual sales.⁵⁰ The protection of TK would ensure that the originators of TK gain economic benefits through fair participation in international trade over their products, and through fair sharing of benefits from inventions that utilize their TK.

The second way in which the lack of protection affects the socio-economic situation of communities relates to foreign patent claims based on TK and biodiversity.⁵¹ As individuals and corporations backed by a strong IP regime that is suited to their interests continue to claim patent rights over TK and its accompanying biodiversity, ILCs may even find themselves unable to use their own knowledge unless they pay royalties to others.⁵² Once outsiders establish IP rights on some biological resources and their underlying TK, ILCs, or individuals acting in their behalf or in agreement with them might not be able to control and benefit from the use of those resources.⁵³

⁴⁹ See Kok Peng Khor & Martin Khor, *Intellectual Property, Biodiversity, and Sustainable Development: Resolving the Difficult Issues* (London: Zed Books, 2002) at 17.

⁵⁰ See Martin Khor, *IPRs and Biodiversity: Stop the Theft of Indigenous Knowledge* (TWN Briefings for WSSD No.6) online: TWN < <http://www.twinside.org.sg/title/jb6.htm>>.

⁵¹ James Boyle, *Shamans, Software and Spleens: Law and the Construction of the Information Society* (Cambridge: Harvard University Press, 1996) cited in Arezzo, note 115, Chapter 2.

⁵² This may occur in the circumstances when the registered patent utilized a knowledge or practice of the indigenous peoples in the territory where the patent is protected. See Arezzo, note 115, Chapter 2, at 213.

⁵³ See Section 3.2.2.2, below, for discussion of the relationship between IP and TK.

To conclude, the protection of TK is justified, as shown in this Section, through its importance and value, broadly in cultural, biodiversity, socio-economic, scientific, and technological areas of endeavour. The protection of TK is warranted, not only to ensure that owners of TK acquire a share of benefits from its use, but also to recognize and preserve its multifunctional potential in areas of particular interest to public policy.⁵⁴

The motivation to protect TK is not limited to the value and potential importance that it holds. The need to protect TK has also become apparent in light of widespread challenges and threats to ILCs in the current global economic system. One way in which the need to protect TK is demonstrated is in the context of efforts to prevent third parties' misappropriation and misuse of TK for commercial use. The discussion that follows examines the urgency for legal protection of TK arising from ongoing transition to a knowledge-based global economy.

3.2.2 THREATS AND CHALLENGES TO TRADITIONAL KNOWLEDGE

TK systems face significant challenges and threats in this era of a global knowledge economy (GKE).⁵⁵ The threats and challenges to TK and TKBAPs arise from two major phenomena that are intrinsically linked: Rampant cases of biopiracy, and high-tech driven transformation of agriculture.

⁵⁴ Note 21, Chapter 1 at 261.

⁵⁵ See Chapter 1 Section 1.2.2 above, for discussion of the dynamics of the global knowledge economy.

3.2.2.1 Biopiracy

As indicated in the previous Chapter, biopiracy is a prevalent trend in the age of GKE. It arises from frequent incidents of technologically and institutionally led “appropriation and monopolisation of long-held medicinal and agricultural knowledge” by individuals and corporations.⁵⁶ Fundamentally, the problem of biopiracy relates to IPRs because IPRs play a key role in providing the means by which individuals and corporations exploit the value of biological resources and the accompanying TK. The biopiracy discourse illustrates inequities in the utilization of genetic resources and their underlying TK through the instrumentality of the IP regime under the TRIPS Agreement.⁵⁷

Claims of appropriation of genetic resources and the underlying TK have increased in the wake of the conclusion of the TRIPS Agreement. The Agreement provides minimum standards for the protection of patents, trademarks, copyrights, industrial designs, and geographical indications under the institutional setting of the World Trade Organization.⁵⁸

⁵⁶ Robinson, note 78, Chapter 1, at 39. Biopiracy is distinguished from the relatively innocuous term “bioprospecting,” which refers to the legitimate discovery of useful biological resources and the attendant knowledge for commercial applications, The Compact Oxford English Dictionary defines bioprospecting as “the search for plant and animal species from which medicinal drugs and other commercially valuable compounds can be obtained.” Shiva defines bioprospecting in a similar fashion as “the exploration of commercially valuable genetic and biochemical resources.” While bioprospecting refers to the identification of biological resources and TK with commercial potential, biopiracy refers to the appropriation aspect of these resources and knowledge without the consent or acknowledgement of ILCs. See Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge* (London: Zed books, 1997) at 4. For discussion of “bioprospecting,” see John R. Adair, “The Bioprospecting Question: Should the United States Charge Biotechnology Companies for the Commercial Use of Public Wild Genetic Resources” (1997) 24 *Ecology L Q* 131; Stephen B. Brush, “Bioprospecting the Public Domain” (1999) 14 *Cultural Anthropology* 535; Cori Hayden, *When Nature Goes Public: the Making and Unmaking of Bioprospecting in Mexico* (Princeton: Princeton University Press, 2003); Shane P. Mulligan, “For Whose Benefit? Limits to Sharing in the Bioprospecting ‘Regime’” (1999) 8 *Environmental Politics* 35.

⁵⁷ See Mgbeoji, “Global Biopiracy,” note 22, Chapter 1 at 13.

⁵⁸ TRIPS Agreement, note 13, Chapter 1; also see Chapter 4 Section 4.3.1, below, for discussion of the evolution of the TRIPS Agreement in the negotiations for the establishment of the World Trade Organization.

The TRIPS Agreement requires all members of the WTO to enforce those knowledge protection tools, of which the patent system stands as pivotal to the GKE.⁵⁹ As Mgbeoji notes, the role of the patent system in the appropriation of genetic resources and associated TK can be understood by situating the patent system in its historical and current contexts.⁶⁰

In the current context, the problem of biopiracy arises, in part, from the TRIPS Agreement's requirement for the protection of plant varieties by "patents."⁶¹ In addition, the TRIPS Agreement gives WTO members the option to exclude from patentability "plants and animals other than microorganisms" and the "essentially biological processes for the production of plants or animals other than non-biological and microbiological processes."⁶² By way of exception, therefore, this provision obliges countries to recognize patents on microbiological life forms.

⁵⁹ Most developing countries are members of the WTO. As such, they are required to comply with the provisions of the Agreement on Trade-Related Aspects of Intellectual Property Rights. Least Developed Countries who are TRIPS signatories are required to implement the TRIPS rules by 2013. See Council for Trade-Related Aspects of Intellectual Property Rights, *Extension of the Transition Period Under Article 66.1 for Least-Developed Country Members*, IP/C/40 (Nov.2005), online:<http://www.tripsagreement.net/documents/GATTdocs/Decision_of_the_Council_for_TRIPS_of_29_November_2005_E.doc>.

⁶⁰ See Mgbeoji, "Global Biopiracy," note 22, Chapter 1 at 13ff (suggesting several factors that should be taken into account in understanding biopiracy, including consideration of "the history of the patent system, the original scope of the concept of patentability, the Western biases of the patent concept itself, the circumstances in which the patenting of plants arose and gained global strength, the global imbalance in the distribution of plants, and, of course, the deliberate relaxation of the threshold for patentability of plant inventions and TKUP [TK of the Use of Plants]"; See also extensive discussion of the role of the patent system in biopiracy in Naomi Roht-Ariazza, "Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of ILCs" (1996) 17 Michigan Journal of International Law 919; Chris Hamilton, "Biodiversity, Biopiracy and Benefits: What Allegations of Biopiracy Tell Us About Intellectual Property" (2006) 3 Developing World Bioethics 158 – 173.

⁶¹ TRIPS Agreement, note 13, Chapter 1, Art. 27.3 (b).

⁶² *Ibid.*

The TRIPS Agreement also sets out the “minimum” requirements that inventions will have to meet in order to be patentable: That the subject matter must be new, must involve an inventive step, and should be capable of industrial application.⁶³ As will be indicated in the next Chapter in detail, multinational companies in industrialized countries lobbied their governments for the incorporation of these standards of patentability in the TRIPS Agreement.⁶⁴ As a result, the standards mirror prevalent patent norms in the industrialized country Members of the WTO.⁶⁵

Patent offices in industrialized countries easily determine the criteria of “novelty and inventive step” in a manner that enables biotechnology companies in the pharmaceutical and agricultural industries to establish patent rights on different life forms.⁶⁶ This opened the way for patent claims over genetic resources for different uses, which may include insights derived from TK.⁶⁷ The patent standards enable multinational companies to

⁶³ TRIPS Agreement, note 13, Chapter 1, Art. 27 (1).

⁶⁴ See Chapter 4 Section 4.3.1, below.

⁶⁵ Basis of patent eligibility in the US arises from Section 101 of Title 35, the pertinent part of which states “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 USC. §101 (1984); also see “specification of an invention” in Canadian patent law, Patent Act, R.S.C. 1985, c. P-4, ss. 27 (3); for detailed analysis, see Jasmine Chambers, “Patent Eligibility of Biotechnical Inventions in the United States, Europe, and Japan: How Much Patent Policy is Public Policy” (2002) 34 *Geo Wash Int’l L Rev* 223.

⁶⁶ The first animal patent to the transgenic mouse is issued by the US patent office see US Pat. No. 4,736,866 (12 April 1988). Also see *Diamond v. Chakrabarty*, 447 US 303, 305-06 (1980); *Monsanto Canada Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, 2004 SCC 34 [Monsanto cited to S.C.R.]. For criticism of the expansive scope of the patent system, see Allen, Chapter 1, note 52; also, see discussion of patents in life forms in Robert P. Merges, “Intellectual Property in Higher Life Forms: The Patent System and Controversial Technologies” (1987) 47 *Md L Rev* 1051

⁶⁷ See Emily Marden, “Neem Tree Patent: International Conflict over the Commodification of Life” (1999) 22 *B C Int’l & Comp L Rev* 279; Sabrina Safrin, “Hyperownership in a Time of Biotechnological Promise: The International Conflict to Control the Building Blocks of Life” (2004) 98 *American Journal of International Law* 641; Ikechi Mgbeoji, “Patents and TK of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Biopiracy?” (2001) 9 *Ind J Global Legal Stud* 163.

monopolize the market for “new” plant varieties and pharmaceutical products that are sometimes derived from existing genetic resources and TK through biotechnological processes.⁶⁸

In this respect, a major flaw in the patent system relates to the recognition of patent rights over “inventions” in naturally occurring genes, also called “gene patents.”⁶⁹ Gene patents are accomplished through acts of isolating and purifying genes outside an animal, plant, or microorganism.⁷⁰ These acts simply uncover something that already exists, and as such, the rationales for “gene patents” runs against the conventional justification of patents – that protection is needed to reward individuals who come up with innovations and creations that do not previously exist.⁷¹

Such patent rights are often justified on the significant financial resource expended in “refining the original material, scientific trials and chemical analysis,” although technological and digital advancement have simplified these technical processes.⁷²

⁶⁸ See Vandana Shiva, “War against Nature and the People of the South” in Sarah Denny Anderson, *Views from the South: The Effects of Globalization and the WTO On Third World Countries* (Chicago: Food First Books, 2000) at 116-118 [Shiva, “War”].

⁶⁹ See also Lee Ann Jackson “Agricultural Biotechnology and the Privatization of Genetic Information Implications for Innovation and Equity” (2000) 3 J World Intell Prop 825–848; also for discussion over other controversies, see Rebecca S. Eisenberg, “Why the Gene Patenting Controversy Persists” (2002) 77 *Academic Medicine* 1381-1387.

⁷⁰ See Nuno Pires de Carvalho, “The Problem of Gene Patents” (2004) 3 *Wash U Global Stud L Rev* 701; Rebecca S. Eisenberg, “Patenting the Human Genome” (1990) 39 *Emory L J* 721; Linda J. Demaine & Aaron Xavier Fellmeth, “Reinventing the Double Helix: A Novel and Nonobvious Reconceptualization of the Biotechnology Patent” (2002) 55 *Stanford Law Review* 303-462; Mark A. Chavez, “Gene Patenting: Do the Ends Justify the Means” (2003) 7 *Computer L Rev & Tech J* 255.

⁷¹ See Chapter 1 Section 1.2.1.1, above, for discussion of the justifications for the protection of intellectual property.

⁷² Gavin Stenton, “Biopiracy within the Pharmaceutical Industry: A Stark Illustration of Just how Abusive, Manipulative and Perverse the Patenting Process Can be Towards Countries of the South” (2003) 1 *Hertfordshire Law Journal* 30 at 36; see the technical process of genetic isolation and purification in Gary

Biological material that is just isolated and purified from its natural environment does not have the necessary amount of novelty to be patentable. As Drahos wonders, “how many people would think that the rock they pick up in the park becomes an invention of theirs after they have washed and polished it?”⁷³

Allegations of biopiracy have arisen in connection with applications of the patent system in the manner described above.⁷⁴ For example, Basmati rice is a landrace that has been grown and developed in the Punjab provinces of India and Pakistan, with export values worth \$350 million and \$250 million respectively.⁷⁵ Basmati is world-known for its long and slender grain, fragrant aroma, and distinctive taste, a courtesy of trans-generational knowledge and innovation by traditional farmers in the region.⁷⁶

In 1997, RiceTec — a Texas based multinational company – acquired patent rights to a basket of novel strains of rice, agricultural techniques of selecting and breeding

Stix, “Legal Circumvention: Molecular Switches Provide a Route around Existing Gene Patents” (2002) online: Scientific American <<http://www.scientificamerican.com/article.cfm?id=legal-circumvention>>.

⁷³ Peter Drahos, “Biotechnology Patents, Market and Morality” (1999) 21 European Intellectual Property Review 441 at 43.

⁷⁴ For different instances of patent-related disputes that involve claims of biopiracy, see “Narratives of Appropriation” in Olufunmilayo B. Arewa, “Biopiracy and Borrowing: Culture, Cultural Heritage and the Globalization of Intellectual Property” Case Research Paper Series in Legal Studies Working Paper 04-19 (March 2006) at 14 ff.

⁷⁵ For India and Pakistan, the name Basmati identifies the region of Punjab. This case is similar to the Reblochon cheese in France. There is not in the Savoie region a village called Reblochon. Nevertheless, Reblochon identifies a cheese originated in a particular region in the French Alps. See UNCTAD, *Commercial Diplomacy Program, Training Tools on the TRIPS Agreement: The Developing Countries’ Perspective* (January 2002) online: <http://www.unctad.org/en/docs/ditctnadmisc17_en.pdf> at 90.

⁷⁶ See H. V. Chandola, “Basmati Rice: Geographical Indication or Mis-Indication” (2006) 9 J of World Intell Prop at 167.

particular rice strains, as well as seeds and grains from any crosses.⁷⁷ This encountered strong opposition from India and Pakistan. Representatives of the two countries branded the patent claim as another attempt of biopiracy.⁷⁸ Though their opposition to the patent claims was unsuccessful, India and Pakistan argued that the name “Basmati” denotes specific qualities of the famous Basmati Rice from the Punjab provinces, and thus, RiceTec should not use the word “basmati” in association with its products.⁷⁹ Following India’s challenge, RiceTec agreed to withdraw its claim for an exclusive use of the term “Basmati,” and subsequently, the USPTO prohibited the patent holder from using the word “Basmati.”⁸⁰

Another instance where the patent and trademark regimes were employed to derive benefits from a plant resource that has significant traditional value was in regard to the Kava plant. Kava is a landrace that is native to the Pacific Islands. It has been in use for many ceremonial and social purposes among traditional communities for as many as 3000 years.⁸¹ Often cultivated in different particular ways depending upon its use, Kava is known for its relaxing and contemplative effects in a social context, analogues to coffee,

⁷⁷ See, USPTO, United States Patent 7,642,435 to Sarreal, , et al, *Rice hybrid XL729*, US 2009/0126035 A1, May 14, 2009; also, see S. K. Soam, “Analysis of Prospective Geographical Indications of India” (2005) 8 J World Intell Prop at 670.

⁷⁸ This incident witnessed an emotional outburst associated with Basmati rice in India under the sentiment, for example, that “patenting Basmati in the US is like snatching away our history and culture.” See Benny Joseph, *Environmental Studies* (New Delhi: Tata McGraw-Hill, 2009) at 102.

⁷⁹ See Kranti Mulik and John M. Cresp, “Geographical Indications and the Trade Related Intellectual Property Rights Agreement (TRIPS): A Case Study of Basmati Rice Exports” (2011) 9 Journal of Agricultural & Food Industrial Organization at 1.

⁸⁰ See *ibid.*

⁸¹ See Vincent Lebot, Mark Merlin & Lamont Lindstrom, *Kava: The Pacific Elixir: The Definitive Guide to Its Ethnobotany, History, and Chemistry* (Rochester: Inner Traditions International, 1997) at 36 & 37.

tea, and alcohol, and in some situations, it is also considered a spiritual and sacred drink.⁸² Besides, it has medicinal use in a range of conditions.⁸³ Although Kava is mainly consumed locally, it has significant commercial value in international trade.⁸⁴

Many European and US companies have taken the opportunity to register trademark rights over a number of terms related to kava, such as “Kava Pure” and “Kavatril.”⁸⁵ In addition, many companies have established patent rights on kava extracts and on active compounds of the product.⁸⁶ Traditional communities in the Pacific Islands receive neither acknowledgement nor compensation of any form for their role in developing and maintaining the medicinal properties of kava.

Due to sophisticated and successful marketing strategies, the demand for kava has increased. This prompted the communities to shift from traditional production

⁸² See Steven Ratuva, “Commodifying Cultural Knowledge: Corporatized Western Science and Pacific Indigenous Knowledge” (2010) 60 *International Social Science Journal* 153 at 159.

⁸³ See David R. Downes & Sarah A. Laird, “Innovative Mechanisms for Sharing Benefits of Biodiversity and Related Knowledge: Case Studies on Geographical Indications and Trademarks” (Paper Prepared for UNCTAD Biotrade Initiative, 1999) at 19; also Christopher Kilham, *Kava Medicine Hunting in Paradise: The Pursuit of a Natural Alternative to Anti-Anxiety Drugs and Sleeping Pills* (Rochester: Park Street Press, 1996).

⁸⁴ Kava constitutes a key commercial crop to most Pacific Island countries, such as Fiji. Also a study by Natrol, a US nutritional supplement company, reports that total kava production has a value of over US\$40 million per year. See Downes & Laird, *supra* note 83 at 18, citing Joseph B. Verrengia, “Root Effect of Kava: Stress-relieving Herb Poised for Therapeutic Stardom” *The Rocky Mountain News* (7 June 1998) at 54A.

⁸⁵ *Ibid.*

⁸⁶ Widely recognized Kava patents include: Gow, et.al, Kavalactone Product, US Patent 7,001,620, 2006; Gregg, Jr. & Fred B., Kava-Kava Root Composition and Associated Methods, US Patent 6,541,044, 2003; Bewicke Calverly M., Dietary Supplements Containing Kava Root Extract, Passion Flower, Chamomile Flowers, Hops, and Schizandra Fruit, U.S. Patent 5,770,207, 1998.

techniques.⁸⁷ The abundance of “mediocre and adulterated material” in the market due to patent-based production of Kava outside the Pacific Islands has resulted in low prices for Kava in international trade. This compels farmers and harvesters to satisfy the demand for kava through large-scale production by expanding cultivated land, resulting in habitat displacement.⁸⁸ Similar trends can be observed in relation to a number of products from developing countries that are becoming increasingly popular in international markets, such as Jasmati rice, Devil’s Claw, Rooibos, and Buchu.⁸⁹

Biopiracy poses a challenge to ILCs with far-reaching consequences, as it affects diverse social, economic, and cultural aspects of their life.⁹⁰ At the macro level, biopiracy facilitates the degradation of biological diversity, while threatening food security at large by allowing the monopolization of genetic resources. At the micro-level, it drastically affects the lifestyle of ILCs in many different ways.

First, biopiracy offends, largely, the spiritual and non-commercial values of indigenous peoples. Of course, economic reasons are not the sole justification for the calls to protect TK against rampant biopiracy. Robinson reports on a survey of a group of twenty-five key academics, NGOs, and government officials in Thailand, where a

⁸⁷ The increasing exploitation of Kava has provoked the neglect of the traditional techniques of “multicropping and a waiting period for the kava to reach a certain age and size” in favour of the harvesting of immature Kava which not only jeopardizes the quality of the medicinal product but also reduces its resource base. See Downes & Laird, *supra* note 83 at 18.

⁸⁸ See Zenobia Ismail & Tashil Fakir, “Trademarks or Trade Barriers? Indigenous Knowledge and the Flaws in the Global IPR System” (2004) 31 *International Journal of Social Economics* 173 at 178.

⁸⁹ See *ibid*; Gavin Stenton, “Biopiracy within the Pharmaceutical Industry: A Stark Illustration of Just How Abusive, Manipulative and Perverse the Patenting Process can be towards Countries of the South” (2003) 1 *Hertfordshire Law Journal* 30.

⁹⁰ For detailed analysis on biopiracy and its impacts, see the list in note 76, Chapter 1.

question was posed in regard to what would be the appropriate objective of TK protection.⁹¹ Most respondents said the appropriate form must be aimed “to prevent people from inappropriately taking advantage of TK and folklore.” The second most common view was for it to serve as “restoration and promotion of TK and folklore,” and the “preservation of TK and folklore for broader social benefit.”⁹²

At stake in some cases is the very existence of the knowledge itself, because the “cultural survival of communities is under threat” due to biopiracy.⁹³ Shiva summarizes three ways in which biopiracy affects developing countries:

[First]...it creates a false claim to novelty and invention, even though the knowledge has evolved since ancient times; [second,] it diverts scarce biological resources to monopoly control of corporations, depriving local communities and indigenous practitioners, [and third, biopiracy] creates market monopolies and excludes the original innovators from their rightful share of local, national, and international markets.⁹⁴

Despite the numerous manifestations of biopiracy, and the various critiques against the IP system as a result, protagonists of the IP establishment do not take the claim of biopiracy for granted. In fact, some refute the existence of biopiracy, scoffing at the “vagaries” of some carefully selected claims of biopiracy to conclude that biopiracy claims in general lack a legal basis.⁹⁵ These groups perceive the discourse of biopiracy as

⁹¹ Robinson, note 78, Chapter 1.

⁹² See *ibid.* at 50.

⁹³ See WIPO, “Diverse,” note 82, Chapter 1 at 7.

⁹⁴ Shiva, “War,” *supra* note 68 at 116-118.

⁹⁵ See Jim Chen, “There’s No Such Thing as Biopiracy ... And It’s a Good Thing Too” (2006) 37 *McGeorge Law Review* 1; Paul J. Heald, “Your Friend in the Rain Forest’: An Essay on the Rhetoric of Biopiracy”

a rhetorical strategy by which the global south wants to acquire a share of the wealth generated from the use of biodiversity, instead of viewing it as a counter-discourse to challenge the legitimacy of the expanded global IP norms, which it actually is.⁹⁶ As previously noted, the claims of biopiracy arise, in part, from flaws in the patent system which allows individuals to easily establish rights over genetic resources and their associated knowledge.

The problem of biopiracy manifests not only in the manner modern IPRs enable individuals and corporations to establish rights over TK and TK-related resources of indigenous peoples, but also in the manner in which the IPRs system excludes these resources from the realm of protection. Modern IPRs create asymmetric protective regime that allows individuals to establish rights over TK, while it simultaneously denies ILCs the opportunity to protect their TK. The following subsection examines this point in detail.

3.2.2.2 Intellectual Property Challenges to Traditional Knowledge

It is often noted that the widely recognized forms of IPRs are well suited to protect technological and biotechnological knowledge and skill.⁹⁷ The criteria of protection that IPRs incorporate are mostly alien to the knowledge systems of ILCs. The current forms of IPRs under the TRIPS Agreement are inadequate to protect TK and TK-related resources for a number of reasons.

(2001) 11 *Cardozo J Int'l & Comp* 519; Cynthia M. Ho, "Biopiracy and Beyond: A Consideration of Socio-Cultural Conflicts with Global Patent Policies" (2006) 39 *U Mich J L Ref* 433.

⁹⁶ See Chen, *ibid.* at 29 (arguing that "[t]he real point of the biopiracy narrative is that the global south wants its largest possible share of the world's wealth"); also see Robinson, note 78, Chapter 1, at 43.

⁹⁷ *Ibid* (arguing that IPRs fall short of satisfying the needs of ILCs in addressing the "wider social values associated with the flow of resources and information generated by biodiversity").

First, most forms of IPRs emphasize, to a large extent, individual intellectual achievements.⁹⁸ As a result, the legal identity of right-holders is inherently individualistic or corporeal. For ILCs, however, “innovations are cultural properties” in the sense that to a large degree, “they are the product and property of a group.”⁹⁹ In most cases, knowledge and innovations derived from TK systems and TK might not be attributed to an individual inventor.¹⁰⁰ TK is more “a means of developing and maintaining group identity and survival,” than of promoting individual gain.¹⁰¹ The modern IPRs do not, in most cases, take account of the collective nature of TK. IPRs are usually granted to a defined individual or group of individuals identified as inventors or creators, although they can be transferred to another by sale or gift.

Secondly, the subject matter of protection in some IPRs, such as in patents, is required to be “new.”¹⁰² Patents require that applications for protection describe specific acts of invention, and that the subject matter of protection must “involve an inventive step.”¹⁰³ As noted in the previous Chapter TK is rather “knowledge built up over time in an

⁹⁸ The preamble to the TRIPS Agreement emphasizes that “intellectual property rights are private rights” available to legal person, implying that such rights are generally owned by individuals or corporations, and not by communities, states or nations. See TRIPS Agreement, note 13, Chapter 1, preamble; also note 217, Chapter 2 at 1.

⁹⁹ *Ibid.*

¹⁰⁰ See Marsha A. Echols, “Geographical Indications for Foods” (2003) 47 *Journal of African Law* 199 at 201; D. A. Cleveland & S. C. Murray, “The World’s Crop Genetic Resources and the Rights of Indigenous Farmers” (1997) 37 *Current Anthropology* 477 at 483.

¹⁰¹ Tonina Simeone, “Indigenous TK and Intellectual Property Rights,” 17 March 2004, Political and Social Affairs Division, online: <[Http://Www.Parl.Gc.Ca/Information/Library/Prbpubs/Prb0338E.Htm#Limitation Stxt](http://www.parl.gc.ca/information/library/prbpubs/prb0338E.htm#LimitationStxt)>.

¹⁰² See for example, *Patent Cooperation Treaty*, June 19, 1970, 28 UST. 7645, 1160 U.N.T.S. 231 at Art. 5; TRIPS Agreement, note 13, Chapter 1, Art. 27 (1); 35 USC. 103 Conditions for patentability; non-obvious subject matter - Patent Laws

¹⁰³ *Ibid.*

incremental fashion.”¹⁰⁴ The focus of the extant IPRs on “new knowledge” through the criteria of novelty and originality puts TK out of the realm of protection because TK is built on knowledge accumulated over generations and continues to evolve in response to changing and emerging needs.

Thirdly, most forms of IP accord their owners a limited term of protection – based on the “contractarian or contract-based” rationale for IP which regulates the relation between the inventor and the society.¹⁰⁵ TK frequently shows continuity, and is marked by its evolution over time and its cross-generational nature. ILCs emphasize that their TK is a heritage that must be protected in perpetuity, for the lifetime of the culture, not merely for some fixed period.¹⁰⁶

Even in circumstances where TK may qualify for protection under IP regimes, certain challenges arise for the communities that want to benefit from the system. IPRs tend to favour corporeal and other non-indigenous interests, as they are mostly subject to economic power and manipulation.¹⁰⁷ The procedures for registering the rights are, in

¹⁰⁴ Oguamanam, “Localizing”, note 1, Chapter 1, at 143.

¹⁰⁵ According to the “contract-based” argument for the protection of IPRs, “the inventor notionally agrees to disclose her invention to the state, for example, by way of filing a patent specification in consideration or exchange for the exclusive right (monopoly) to exploit the invention for a fixed term. At the expiration of the term, the public is free to exploit the invention without the patent holder’s interference.” See Chidi Oguamanam, “Beyond Theories: Intellectual Property Dynamics in the Global Knowledge Economy” (2009) 9 *Wake Forest Intell Prop L J* 104 [Oguamanam, “Beyond Theories”] at 112.

¹⁰⁶ Erica Daes, *Protection of the Heritage of Indigenous Peoples* cited in David R. Downes & Sarah A. Laird, “Innovative Mechanisms for Sharing Benefits of Biodiversity and Related Knowledge: Case Studies on Geographical Indications and Trademarks” (Paper Prepared for UNCTAD Biotrade Initiative, 1999) at 4.

¹⁰⁷ See note 127, Chapter 2, at 11.

general, expensive, complicated, and time-consuming for most TK-holders.¹⁰⁸ Even though IPRs may be established over TK and TK-related resources, in some cases, the rights may be difficult to monitor and enforce.¹⁰⁹

In concluding the general theme of inquiry in this Section, it must be emphasized that TK needs protection because TK systems play a role in multiple areas of life. Yet, the existing system of IPRs does not acknowledge the role of TK. Multinational companies and individuals acquire expanded patent rights and benefits through IPRs protection, while TK is excluded from the scope of that protection. This situation fuels biopiracy in the post-TRIPS era, and thus, gives credence to calls to protect TK in different forms.

In relation to the specific topic of the thesis, (i.e., whether GIs can serve as a form of protection for TKBAPs) the fact that TK serves multifaceted purposes while it is also subject to various forms of biopiracy does not necessarily constitute sufficient ground for using GIs as models of protection. To establish the need to protect TKBAPs, and the yardsticks by which the potential of GIs to protect TKBAPs can be assessed, the following Section analyzes various impacts that technological transformation has brought to TK-based agricultural production.¹¹⁰ The need to protect TK and TKBAPs can be illustrated through the challenges that ILCs encounter in the face of high-tech driven transformation of agriculture. The discussion in the following Section elucidates the need to protect TKBAPs in the context of the transformation of agriculture from traditional

¹⁰⁸ *Agreed Interpretation of the International Undertaking*, Annex I (Resolution 4/89 of the Twenty-fifth Session of the FAO Conference, Rome, 11-29 November 1989) at 5.

¹⁰⁹ See note 127, Chapter 2, at 11.

¹¹⁰ See Chapter 6, below, for discussion of economic, biodiversity, cultural and social concerns as yardsticks to evaluate the potential of GIs in protecting TKBAPs.

subsistence farming to a modern and scientific one. In doing so, it sets the background for assessing the utility of GIs to address prevalent problems in the socio-economic conditions of rural communities.

Technological transformation of agriculture has its roots in the wide use of improved plant varieties and other inputs in the era of the “Green Revolution.”¹¹¹ IP-like rights, in the form of plant breeder’s rights, played key roles in the spread of high-yielding crop varieties during the Green Revolution.¹¹² In the GKE, patents have significant roles in the development of genetically modified plant varieties and other biotechnological products. The following discussion analyzes the impact of transformation in the socio-economic context of most ILCs in the agricultural sector.

3.3 TECHNOLOGY-DRIVEN TRANSFORMATION IN AGRICULTURE

In a traditional setting, agriculture is a means of subsistence that integrates economic, ecological, and cultural values in a holistic way.¹¹³ Traditional agriculture has been a basis of multi-dimensional functions in serving spiritual, cultural, ethical, and social purposes for ILCs.¹¹⁴ The most widely practised form of food production in developing countries (i.e. traditional agriculture) faces enormous challenges and pressures due to

¹¹¹ See text accompanying *infra* note 127, Chapter 4.

¹¹² See Chapter 4 Section 4.3.4, below, for discussion of the nature and regulation of plant breeder’s rights.

¹¹³ See Chidi Oguamanam, “Tension on the Farm Fields: The Death of Traditional Agriculture?” (2007) 27 *Bulletin of Science Technology Society* 260 at 261 [Oguamanam, “Tension”].

¹¹⁴ See Arun Agrawal, “Dismantling the Divide between Indigenous and Scientific Knowledge” (1995) 26 *Development and Change* 413–439; Rosemary J. Coombe, “Protecting Traditional Environmental Knowledge and New Social Movements in the Americas: Intellectual Property, Human Right, or Claims to an Alternative Form of Sustainable Development” (2005) 17 *Fla J Int’l L* 115.

major transformations in agricultural production in the global economy. These transformations relate to the rise of the Green Revolution in the mid-twentieth century and the introduction of advanced biotechnology products in the form of genetically modified organisms (GMOs) in late twentieth and early twenty-first centuries.

The advent of “specialized and “scientific” plant breeding” practices characterizes the dominant method of agricultural production in the Green Revolution era.¹¹⁵ The Green Revolution ushered in an era in which mechanised harvesting techniques of carefully selected hybrid crops replaced pre-existing traditional practices.¹¹⁶ Traditional agricultural practices involve the planting of open-pollinated seeds and their saving and sharing for future use. Given the inherently propagating nature of plant biological resources, traditional hybridisation techniques were not subject to proprietary claims, and as such, they were less attractive to commercial interest groups.¹¹⁷ Commercial agricultural production flourished, however, with the discovery of hybridisation techniques in laboratories, as opposed to that of open fields in traditional farming, and the subsequent establishment – in the 1960s – of *sui generis* forms of IP protection dubbed “plant breeder’s rights” (PBRs).¹¹⁸

¹¹⁵ The “Green revolution” was a technological transformation of “farming practice in many regions of the tropics and sub-tropics” which was characterised by the use of high-yielding crop varieties and other inputs, notably fertilizer, pesticides and irrigation See Peter B.R. Hazell & C. Ramasamy, eds, *The Green Revolution Reconsidered: The Impact of High-Yielding Rice Varieties in South India* (Baltimore: Johns Hopkins University Press, 1991).

¹¹⁶ See Kloppenburg, note 53, Chapter 1, at 132; see also Shiva, “War,” *supra* note 68 at 97.

¹¹⁷ See Jeremy de Beer, “Reconciling Property Rights in Plants” (2005) 8 J of World Intell Prop 5-31.

¹¹⁸ Plant Breeder’s Rights are patent-like rights with some missing attributes. Similar to Patents, they provide exclusive rights to the holder, reward an inventive process, and are protected for a limited period of time. Unlike patents which require that the subject matter of protection did not exist previously, however, the requirement of novelty in PBRs is satisfied if the plant variety has not been sold or otherwise disposed

Through advanced agricultural techniques and biotechnological breakthroughs in the 1980s, multinational crop companies are able to “create” trans-genetic plants with a built-in resistance to herbicides or pesticides that are mostly patent-protected and marketed by the same companies.¹¹⁹ The rapid pace of discovery and growth in molecular biology and genetic engineering has enabled the deployment of microorganisms towards diverse ends in agricultural food production.

In the past, improvement of crop varieties used to be accomplished through relatively simple techniques of hybridisation through selection, isolation, and emasculation of plants. In an era of high-tech-driven agricultural transformation, however, genetic engineering involves a set of techniques that allow researchers to isolate a gene (or DNA fragment), manipulate it, and put it into either the same host cell or other host cells. These processes provide the resulting crops with desired traits that will be retained in the form of

of to others, by or with the consent of the breeder, for the purpose of exploitation of the variety. See UPOV 1991, note 53, Chapter 1, Art. 6. Other criteria include: distinctness, stability and uniformity or homogeneousness. See UPOV 1991, note 53, Chapter 1, Arts. 7-8. Also see Borowiak, Craig. “Farmers’ Rights: Intellectual Property Regimes and the Struggle over Seeds” (2004) 32 *Politics & Society* 511 at 514.

¹¹⁹ See *ibid.* Blakeney illustrates this phenomena by citing the practice of the Crop Company Monsanto with regard to one of its agrochemicals:

Monsanto had made enormous profits from one of its patented agrochemicals, a glyphosate-based herbicide marketed under the name of Roundup, and was concerned to ensure that once the patent expired, it would not face too drastic a shortfall in revenues as competing producers of the same herbicide entered the market. Monsanto turned to biotechnology for a solution. The company developed and patented transgenic soybeans, canola, cotton and corn containing a gene providing resistance to its Roundup. Monsanto’s patents protect the gene for Roundup resistance and all plants containing it, and these have several more years to run. As farmers who buy these ‘Roundup Ready’ seeds are contractually obliged to purchase Monsanto’s patented herbicides, sales of the seeds are good for sales of the herbicides and vice versa.

See Blakeney, “Trends”, *supra* note 79 at 17.

germplasm for commercial ends.¹²⁰ The law, as stipulated in Art. 27.3 (b) of the TRIPS Agreement, affords patent rights protection to these processes and resulting products.

Thus, patents provide the incentives to develop seeds that will have large potential demand by responding to certain traits for commercial attraction. The establishment of IPRs over GMOs provides “juridical legitimization to the breeding of genetically uniform varieties” in place of a wide diversity of traditional local varieties.¹²¹ Although a form of IP protection over plant resources has been available on plant varieties in the form of PBRs, patents on living materials in the era of high-tech-driven agricultural transformation have attracted considerable attention on numerous grounds.¹²²

In the context of the foregoing discussion, the fundamental line of inquiry as to the instrumentality of GIs to protect TKBAPs arises from the serious impacts that high-tech-driven transformation of agriculture has on the socio-economic life of ILCs. The instrumentality of GIs in addressing the prevalent problems in traditional agricultural systems is best appreciated and understood through a close examination of these impacts.

¹²⁰ See Thomas Parmalee, *Genetic Engineering* (Edina: ABDO Group, 2008). Germplasm is “the hereditary material transmitted to the next generation through the germ cells.” See Robert C. King, William D. Stansfield & Pamela Khipple Mulligan, *A Dictionary of Genetics* (New York: Oxford University Press US, 2006) at 180.

¹²¹ D. Rangnekar, “R&D Appropriability and Planned Obsolescence: Empirical Evidence From Wheat Breeding in the UK (1960-1995)” (2000) 11 *Industrial and Corporate Change* 1011 [Rangnekar, “R&D”].

¹²² Stenson & Gray identify three reasons that unlike PBRs in the case of hybridization and plant breeding, patent-based genetic engineering has become controversial. First, genetic engineering in life forms is viewed as interfering in nature to an unprecedented, unwise and possibly unethical degree. Second, unlike PBRs, patents are available to all kinds of living matter, from genes to actual types of animals. Third, patents are more extensive in the control they give the proprietor than PBRs; for example, PBRs allow farmers to save seed from one harvest to the next, unlike patents. See Anthony J. Stenson & Tim S. Gray, *The Politics of Genetic Resource Control* (London: Macmillan Press Ltd. 1999) at 131; see also Gerhold K. Becker & James Porter Buchanan, *Changing Nature's Course: The Ethical Challenge of Biotechnology* (Hong Kong: Hong Kong University Press, 1996).

The following subsections examine these various impacts and challenges for ILCs in the economic, biodiversity, and cultural dimensions. An analysis of the extent to which GIs respond to these impacts, which is provided in Chapter Six, will enable us to assess the effectiveness of GIs in protecting TKBAPs.

3.3.1 ECONOMIC IMPACTS OF THE TRANSFORMATION OF AGRICULTURAL PRODUCTION

The major impact of high-tech driven transformation in agriculture lies on ILCs' economic life, which forms a basis for their cultural and social survival. In the economic activity of agricultural production, the high vulnerability of the plant varieties of the Green Revolution era to pest attack has meant that their success depended on the use of increased agricultural inputs in the form of pesticides, herbicides, and fertilizers.¹²³ Consequently, the cost of agricultural inputs in agricultural production has driven traditional agriculture to “capital intensive agriculture.”¹²⁴

In the modern economy, it was hoped that the use of GMOs in agricultural production would reduce the high demand for agricultural inputs. The adoption of GMOs in agricultural production has been widely advocated on the ground that their use would improve agricultural yield at reduced cost.¹²⁵ However, farmers' expenditure for seeds

¹²³ See *supra* note 28 at 128.

¹²⁴ *Ibid.* at 18.

¹²⁵ See Ronald Herring, *Transgenics and the Poor: Biotechnology in Development Studies* (Oxford: Routledge, 2008); Meredith T. Mariani, *The Intersection of International Law, Agricultural Biotechnology, and Infectious Disease* (Leiden: BRILL, 2007); Miguel A. Altieri, “The Ecological Impacts of Large-Scale Agrofuel Monoculture Production Systems in the Americas” (2009) 29 *Bulletin of Science Technology & Society* 236.

and chemicals has dramatically increased, as modern agricultural applications have now become necessarily complementary to patented seeds.¹²⁶

In addition, “vertical integration within the seed and chemical industries” has enabled oligopolistic companies to control prices for agricultural inputs.¹²⁷ Small-scale farmers face strong pressure from the big multinational companies which are able to shape the social and economic aspects of agriculture by merging chemical companies, biotechnology firms, and seed suppliers.¹²⁸ In large-scale economies, the expenditures of

¹²⁶ In a 1999 report referenced by Altieri, it is noted that:

In Illinois, the adoption of herbicide resistant crops makes for the most expensive soybean seed-plus-weed management system in modern history – between \$40.00 and \$60.00 per acre depending on rates, weed pressure, etc. Three years ago, the average seed-plus-weed control cost on an Illinois farm was \$26 per acre, and represented 23 per cent of variable costs; today [in 1999] they represent 35-40 per cent.

See Miguel A. Altieri, “Can Biotechnology End Hunger? No: Poor Farmers Won’t Reap the Benefits” (2000) 119 *Foreign Policy* 123-131 [“Poor Farmers”].

Shiva also points out that “expenditures on pesticide in the Indian district of Warangal went up from \$2.5 million for the entire decade of the 1980s to \$50 Million in 1997—a 2,000 percent increase.” See Shiva, “War,” *supra* note 68 at 123; also, trials of GMOs in India have shown a decrease in yields and an increase in the use of pesticides. See Vandana Shiva et al, “Globalization and the Threat to Seed Security: Case of Transgenic Cotton Trial in India” (1999) 34 *Economic and Political Weekly*.

¹²⁷ Ahmed notes that the top three agrochemical companies – Du Pont-Pioneer, Monsanto and Novartis – are also the top three seed controlling companies worldwide and the top three suppliers of the chemical inputs on which high-yielding seeds depend. See Mohsen Al Attar Ahmed, “Monocultures of the Law: Legal Sameness in Restructuring of Global Agriculture” (2006) 11 *Drake J Agric L* 139 at 150. Also see Genetic Resources Action International, *Turning the Paddy Gold: Com in Southeast Asia* (1999) online: Seedling <<http://www.grain.org/seedling/index.cfm?id=98>>.

¹²⁸ According to the CBD Ad Hoc Technical Expert Group on Genetic Use Restriction Technology, “smallholder farmers” are:

[T]hose farmers involved in systems that meet most of, but not limited to, the following characteristics: (i) low external input; (ii) limited resource-base; (iii) limited market access and orientation; (iv) high capacity for local innovation of technologies related to genetic resources; and (v) vulnerable to a range of external pressures as a result of the above criteria.

See CBD, *Ad Hoc Technical Expert Group Meeting in the Potential Impacts of Genetic Use Restriction Technologies on Smallholder Farmers, ILCs and Farmers’ Rights* (2006), referenced in Oguamanam, “Tension”, *supra* note 113 at nn. 4.

intensive agriculture can be minimised on account of accessibility of technologies and the availability of capital investment in large agricultural undertakings. In this way, technology-driven agricultural transformation has entrenched economic and class divisions, and solidified asymmetrical relations between traditional farmers on the one hand, and multinational agro-chemical companies on the other.

Traditional agricultural systems whose labour intensive feature has sustained the lives of many rural communities are now disintegrating.¹²⁹ Changes in agricultural economy have led to the participation of a small number of farmers in traditional agricultural practice.¹³⁰ These developments harm traditional farmers, as well as the environment, since traditional methods of production which are recognized for their environmental sustainability are largely overlooked.¹³¹ The shaping of social and economic policies through the forces of industrial agriculture, therefore, eventually affects other aspects of traditional agriculture namely, the biological and the cultural.

In the circumstances outlined above, it is pertinent to inquire how far GIs can serve as tools to address economic challenges in traditional agricultural systems. As a form of IP, GIs are much often used as economic tools to pursue sustainable agricultural development

¹²⁹ See Miguel A. Altieri, “10 Reasons Why Biotechnology Will Not Ensure Food Security, Protect the Environment and Reduce Poverty in the Developing World” *Third World Network* online: TWIN <<http://www.twinside.org.sg/title/miguel-cn.htm>>.

¹³⁰ See Shiva, “War,” *supra* note 68 at 103 (arguing that industrial agriculture has resulted in the participation of farmers “only as tractor drivers and pesticide sprayers. All other functions of farmers – as maintainers of biodiversity, stewards of soil and water, and seed breeders – are destroyed.”).

¹³¹ See Ahmed, *supra* note 127 at 151, quoting Klaus Bosselmann, “Plants and Politics: The International Legal Regime Concerning Biotechnology and Biodiversity” (1996) 7 *Colo J Int’l Env L & Pol’y* 129.

through improved income opportunities for traditional agricultural producers.¹³² In light of the imperatives for economic revitalization of traditional agricultural economies analysed in this Section, the discussion in Chapter Six considers the instrumentality of GIs for protecting TKBAPs through a close examination of the economic impact of their implementation. The following discussion deals with the impact of transformation of agriculture on biodiversity in traditional agricultural systems.

3.3.2 IMPACTS ON BIOLOGICAL DIVERSITY

In addition to the economic burden, the use of modern varieties encourages excessive use of chemicals. This affects biological diversity in a cultivated field.¹³³ Concerns about the increased application of agro-chemicals and the effect of such use on TK systems and biological diversity have grown with the introduction of GMOs.

It is claimed that use of GMOs allows farmers to spray less chemical on crops because GMOs resist insects, weeds, and plant diseases through their herbicide-tolerant varieties.¹³⁴ In the hope that the “biotechnology revolution ...will eventually transform a rather dirty agrochemical ... industry [in hybrid crop use] into a cleaner biology industry,” there is a strong push towards a wide use of genetically modified (GM) crops in place of

¹³² See Chapter 5 Section 5.5.2, below, for discussion of GIs as instruments of economic policy in the EU common agricultural policy.

¹³³ Nadia El-Hage Scialabba & Douglas Williamson, *Environment and Natural Resources Service Sustainable Development Department: The Scope of Organic Agriculture, Sustainable Forest Management and Eco-forestry in Protected Area* Working Paper No. 18, Rome (2004) at 38; also, see Preface, “Biodiversity in Agricultural Landscapes: Investing without Losing Interest” (2007) 121 *Agriculture, Ecosystems and Environment* 193 at 194.

¹³⁴ See David Pimentel, “Overview of the Use of Genetically Modified Organisms and Pesticides in Agriculture” (2001) 9 *Ind J Global Legal Stud* 51-64.

landraces and farmers' varieties.¹³⁵ This has resulted in the replacement of most TKBAPs with genetically engineered crop varieties.¹³⁶

The replacement of TK-based crop varieties with GM-crops is, by itself, considered “the main cause of the genetic erosion of crops,” including “the extinction of countless plant types” because TKBAPs are mostly known for their richness of diversity and for their depth of adaptability to ecological conditions.¹³⁷ Thus far, GM-crops have not been widely adopted among most ILCs. Experience from plant varieties of the Green Revolution, and an assessment of the likely effects of the structural composition of GMOs, allow for an analysis of their adverse effects on biological and cultural diversity. These effects arise from two major outcomes that directly relate to a widespread use of GM-crops in agriculture: Promotion of genetic uniformity, and the unintended consequences yielded by the in-built pesticides and herbicides.

3.3.2.1 Genetic Uniformity

Prevalence of agricultural biotechnology practices results in crop varieties that fit to particular commercial preferences. The single strain of GMOs is specifically tailored to meet the needs of commercial agriculture, such as high-yield production, resistance to certain common diseases, or conformity to a particular taste. As a result, GM-crops typically “show a high degree of genetic uniformity” suited to uniform environmental

¹³⁵ Philipp Aerni, “Agricultural Biotechnology and its Contribution to the Global Knowledge Economy” (2007) 107 *Adv Biochem Engin/Biotechnol* 69 at 84.

¹³⁶ Ahmed, *supra* note 117.

¹³⁷ See *ibid.* at 146. Blakeney cites a report by FAO that “only 20 per cent of the local Mexican maize varieties 1930 are now known, similarly, in China, wheat varieties have decreased by a factor of 10 between 1949 and 1970.” See Blakeney, “Trends”, *supra* note 79 at 16.

conditions.¹³⁸ Genetic uniformity is a situation in which many individual plants in a single crop share common parents and, as a result, demonstrate a very similar genetic composition.¹³⁹ The problem with a uniform genetic crop system in agriculture materialises in two ways.

First, the reduction of genetic diversity through a focus on limited crop varieties that have a narrow genetic make-up is, in and of itself, a cause for genetic erosion because such crops replace local varieties that contain “diverse genetic endowment” and “genes and gene complexes.”¹⁴⁰ According to a FAO report, 75 percent of plant genetic diversity has been lost since the 1900s as farmers worldwide adopt genetically uniform, high-yielding varieties instead of their multiple local varieties and landraces.¹⁴¹ Another study reveals that ninety-seven per cent of the vegetable varieties sold by commercial seed houses in the United States at the beginning of the century are now extinct, as are eighty-seven per cent of the pear and eighty-six per cent of the apple varieties.¹⁴² The reduction of genetic diversity is alarming, when seen in light of the overall trend of diminishing crop varieties:

¹³⁸ *Ibid.* at 14.

¹³⁹ See Klaus Bosselmann, “Plants and Politics: The International Legal Regime Concerning Biotechnology and Biodiversity” (1996) 7 *Colo J Int’l Env L & Pol’y*129.

¹⁴⁰ See FAO, *Agricultural Biodiversity, Multifunctional Character of Agriculture and Land Conference: Background Paper 1* (Maastricht: FAO, 1999) online: FAO <<ftp://ftp.fao.org/docrep/fao/007/y5609e/y5609e00.pdf>>.

¹⁴¹ FAO, “What is Agro-biodiversity?” online: FAO <<ftp://ftp.fao.org/docrep/fao/007/y5609e/y5609e00.pdf>>

¹⁴² Bruce H. Ziff & Pratima V. Rao, *Borrowed Power: Essays on Cultural Appropriation* (New Brunswick: Rutgers University Press, 1997) at 258.

On a worldwide scale, some 10, 000 plus food plants are consumed, yet a mere 103 account for 90 per cent of the world's food crops. In the US alone, between five and twenty percent (dependent on the crop) of varieties found in a 1904 inventory of crops are still grown commercially or held in collections. Similarly, China has experienced a 90 per cent loss in wheat varieties since World War II alone. In terms of natural varieties (as opposed to domesticated) ... one out of eight plants surveyed internationally (out of 240,000 “higher species” of plants), is potentially at risk, with extinction rates presently at 1000 species a year- the highest extinction rates of plants, is ironically, in the United States.¹⁴³

Thus, the expansion of GMOs threatens TKBAPs which, generally, are rich in their diversity.

The second problem with genetic uniformity in agriculture is that the narrow genetic makeup of GMO makes them “systematically vulnerable to diseases and pest infestations.”¹⁴⁴ Reliance on few uniform plant varieties due to a narrow genetic base results in the vulnerability of agriculture to widespread crop failures; in other words, “in a land where uniformity is sovereign, crops may be devastated by a single threat.”¹⁴⁵

¹⁴³ See Winona La Duke “Wild Rice: Maps, Genes and Patents” (2001) online: Save Wild Rice <<http://savewildrice.org/winona-article>>.

¹⁴⁴ *Supra* note 28 at 124.

¹⁴⁵ Ahmed, *supra* note 127 at nn. 22. For example, the California barley production that has been exposed to the lethal yellow dwarf virus as a result of its narrow genetic makeup was saved by a gene from a barley landrace found in Ethiopia. See Kenton Miller & Laura Tangle, *Trees of Life: Saving Tropical Forests and their Biological Wealth* (Boston: Beacon Press, 1991) at 189. Ahmed further illustrates this point by referring to the case of Ireland’s potato industry of 1845, which – due to its reliance on a very narrow number of potato types – was infected with an uncontrollable potato blight known as *Phytophthora infestans*. The result was one of the most severe famines that claimed the lives of millions of people. The broad genetic diversity of landraces, farmers’ varieties and wild species, on the other hand, “promotes the development of organic resistances to both diseases and pests, essentially strengthening [TKBAPS’] natural defences to predators and climactic hardships.” See Ahmed, *supra* note 127 at 44.

3.3.2.2 Unintended Consequences of Genetically Modified Organisms

Another potential risk of GM-plants against agro-biodiversity relates to the nature of traits that pesticide and herbicide-resistant transgenic plants introduce. First, the toxins that these GM-plant varieties produce, as a pesticide or herbicide, may kill plant and species other than the desired targets.¹⁴⁶

Second, GMOs “continuously produce a particular herbicide or pesticide in the entire growing season.”¹⁴⁷ Thus, the herbicide or pesticide will be present during the entire growing season, not just during periods of sprayed application, as has been the case with the mechanised agriculture of the Green Revolution.¹⁴⁸ In this situation, particular weeds and pests may develop enhanced resistance to pesticides or herbicides.¹⁴⁹ Once pests and weeds develop this resistance, the particular pesticide or herbicide becomes useless.

A more serious threat is that pollens of GM-plants may be dispersed via vectors or the wind that carries them. As a phenomenon of gene flow that occurs throughout the whole ecosystem, there are potentials for transfer of genes from GMOs to wild and semi-cultivated plants, including weeds that the herbicide from the GMO has targeted.¹⁵⁰ This could create herbicide resistant “super weeds” which would “render the herbicide

¹⁴⁶ For example, a study reveals that a genetically engineered plant virus that contains a scorpion-derived toxin gene, which was being field-tested in the UK, is intended to kill the cabbage white butterfly larva, but its host range is known to be wide, and includes rare and protected moth and butterfly species. Janet Bell, “Genetic Engineering and Biotechnology in Industry” in Miges Baumann et al, eds, *The Life Industry: Biodiversity, People and Profits* (London: WWF, 1996) online: <<http://nzdl.sadl.uleth.ca/cgi-bin/library>>.

¹⁴⁷ *Supra* note 28 at 143.

¹⁴⁸ See *Ibid.*

¹⁴⁹ *Ibid.*

¹⁵⁰ See Ahmed, *supra* note 127.

ineffective in the long term,” and may result in ecological distortions whose impact may be unpredictable.¹⁵¹

In some cases, the added characteristics of some GM-crops may render them weeds, if such characteristics give the crops a competitive advantage over neighbouring agrobiodiversity.¹⁵² The qualities those GM-crops are specifically designed for, such as resistance to cold, disease or herbicides, may enable them “to overcome obvious limits on population growth,” thereby, making it difficult to sustain balance in the ecosystem.¹⁵³

In light of the foregoing, it could be said that a protective model to protect TKBAPs should address technology-driven challenges to traditional agricultural systems. In proposing GIs as models for protecting TKBAPs, the relevant question investigated in this thesis is whether GIs are appropriate instruments to prevent or mitigate the negative effects of agricultural biotechnology on traditional agriculture and, if so, how. The second part of the thesis considers this question in the context of examining the potential of GIs to serve as legal instruments to protect TKBAPs.

The analysis in this Chapter also considers the impacts of technological transformation in agricultural production in other policy contexts, such as achievement of food security, and preservation of cultural identity. The issues of food security and cultural identity arise as manifestations of the global economic pressures agricultural

¹⁵¹ Blakeney, “Trends”, *supra* note 79 at 17 & 18.

¹⁵² *Ibid.* at 18.

¹⁵³ Thomas Anthony Shannon, *An Introduction to Bioethics* (Mahwah: Paulist Press, 1997) at 130; see also Gyorgy Scrinis, *Colonizing the Seed Genetic Engineering and Techno-Industrial Agriculture* (Melbourne: Friends of the Earth, 1995).

biotechnology facilitates. As such, these issues must be addressed in an analysis that proposes the use of GIs to protect TK and TKBAPs.

3.3.3 CHALLENGES TO FOOD SECURITY AND THE NEED FOR FOOD SOVEREIGNTY

Food security is an operational concept that has been used to analyse agri-food production since the Green Revolution. GMO-based crops have been promoted and their protection through IPRs has been justified on the ground that their protection and wide distribution would ensure “food security.”¹⁵⁴

As a concept, “food security” is imprecise and is used in various ways. Since its emergence in the literature in the 1960s and 1970s, the term has been defined in at least 200 ways, and it has been described through at least 450 indicators.¹⁵⁵ FAO acknowledges that the definitional problems surrounding “food security” relate to the operational complexities inherent in the application of the concept to a wide range of technical and policy contexts.¹⁵⁶ As a specialized agency that specifically deals with food and nutrition in all parts of the World, FAO conceptualises “food security” as concerned with the “availability of world supplies of basic food stuffs.”¹⁵⁷ This understanding of

¹⁵⁴ See K. H. Engel, Th. Frenzel & A. Miller, “Current and Future Benefits from the Use of GM Technology in Food Production” (2002) 127 *Toxicology Letters* 329–336.

¹⁵⁵ See Edward Page & M. R. Redclift, *Human Security and the Environment: International Comparisons* (Cheltenham: Edward Elgar Publishing, 2002) at 129.

¹⁵⁶ See Chidi Oguamanam, “Agro-Biodiversity and Food Security: Biotechnology and Traditional Agricultural Practices at the Periphery of International Intellectual Property Regime Complex” (2007) *Mich St L Rev* 215 at 231 [Oguamanam, “Food Security”] at 230; see also FAO, *Trade Reforms and Food Security: Conceptualizing the Linkages* (Rome: Food and Agricultural Organization of the United Nations, 2003) at 25.

¹⁵⁷ See Kerstin Mechlem, “The Right to Food, Food Security and Biodiversity Conservation” (Presentation at IUCN World Conservation Congress, 19 November 2004, Bangkok).

food security stands on the presumption – in the earlier times – that food scarcity is the cause for food insecurity.¹⁵⁸ As a result, the adoption of GM-crops and modern varieties was promoted under the banner of ensuring food security by increasing productivity.

Through evolutionary considerations, however, FAO adopted a reconstructed definition of food security, remarking that “[f]ood security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”¹⁵⁹ In 2001, FAO refined this definition, providing that “food security [is] a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”¹⁶⁰ This definition deviates from FAO’s earlier approach, which used to be concerned with addressing the single factor of food shortage in quantitative terms.

FAO’s current approach to food security is consistent with the works of contemporary academics in the study of food. For example, Ryerson University’s Centre for Studies in Food Security defines food security as “a condition in which all peoples at all times can acquire safe, nutritionally adequate, and personally acceptable foods that are accessible in

¹⁵⁸ See Lijbert Brussaard et al, “Reconciling Biodiversity Conservation and Food Security: Scientific Challenges for A New Agriculture” (2010) 2 *Current Opinion in Environmental Sustainability* 1.

¹⁵⁹ See FAO, *Rome Declaration on World Food Security and World Food Summit: Plan of Action* (World Food Summit, 13-17 November 1996, Rome).

¹⁶⁰ FAO, *The State of the World’s Plant Genetic Resources for Food and Agriculture* (Rome: FAO, 1998) at 18.

a manner that maintains human dignity.”¹⁶¹ This definition reflects multiple conceptions of food security in diverse communities. In clarifying the concept, the Centre has provided five components of the working definition of food security: Availability, Accessibility, Adequacy, Acceptability, and Agency.¹⁶²

The understanding of food security in terms of qualitative standards of acceptability, adequacy, and accessibility, instead of just the quantitative metrics of availability arose from a shift in the pre-existing view of the real causes of food insecurity. In contrast to previous perceptions, it is now widely accepted that food insecurity happens “not due to lack of food or even lack of productive capacity.”¹⁶³

Despite this wider understanding of the concept, concerns exist over the effectiveness of the methods that are widely adopted in international policy frameworks to achieve food security. In the contemporary global context, most development advocates promote neo-

¹⁶¹ See Oguamanam, “Food Security” *supra* note 156 at 231 quoting Canadian Dietetic Assoc., “Hunger and Food Security in Canada: Official Position of the Canadian Dietetic Association” (1994)11 Agric. & Hum. Values 97 at 97-98.

¹⁶² See Oguamanam, “Food Security”, *ibid*. The Centre has made clear the understanding of the concept in this manner by providing components of the working definition of food security:

- Availability - sufficient food for all people at all times
- Accessibility - physical and economic access to food for all at all times
- Adequacy - access to food that is nutritious and safe, and produced in environmentally sustainable ways
- Acceptability -access to culturally acceptable food, which is produced and obtained in ways that do not compromise people's dignity, self-respect or human rights
- Agency - the policies and processes that enable the achievement of food security

See Centre for Studies in Food Security at Ryerson University, “Food Security Defined” online: Ryerson University <<http://www.ryerson.ca/foodsecurity/>>.

¹⁶³ See Carmen G. Gonzalez, “Trade Liberalization, Food Security, and the Environment: The Neoliberal Threat to Sustainable Rural Development” (2004) 14 *Transnat'l L & Contemp Probs* 419 at 428.

liberal policies of “free-trade” as a means of achieving food security.¹⁶⁴ The neo-liberal logic of comparative advantage in international trade encourages developing countries and their constituents to produce agricultural “commodities for exports.”¹⁶⁵ Based on incomes derived from these exports, developing countries are expected to achieve food security by importing affordable food from industrialized countries, which, by the fact of their biotechnological success in the agri-food sector, have a “comparative advantage” to monopolise food production.¹⁶⁶ This tendency has resulted in export-led policies in developing countries that shift the focus of agricultural policy from “the production of traditional food crops to ‘commodities for exports.’”¹⁶⁷

The “cultivation of culturally appropriate staples” is, therefore, replaced with the production of few “luxury (high-profit) export-oriented commodities” which mainly includes cash crops such as coffee and cocoa beans, sugar, cotton, rubber, and tobacco.¹⁶⁸ By 1980/1981, for example, traditional tropical products accounted for around thirty-nine

¹⁶⁴ See Carmen G. Gonzalez, “Trade Liberalization, Food Security, and the Environment: The Neoliberal Threat to Sustainable Rural Development” (2004) 14 *Transnat’l L & Contemp Probs* 419-498; Vandana Shiva & Gitanjali Bedi, *Sustainable Agriculture and Food Security: The Impact of Globalisation* (Thousand Oaks: Sage Pub, 2002); Eugenio Diaz-Bonilla, *Food Security and Trade Negotiations in the World Trade Organization*, TMD Discussion Paper No. 59 (2000).

¹⁶⁵ Comparative advantage is a major theory used to illustrate gains from international trade in which each country specialises in occupations in which it is relatively efficient; each should export part of that production and take, in exchange, those goods in whose production it is, for whatever reason, at a comparative disadvantage. See AK Dixit & VD Norman, *Theory of International Trade: A Dual, General Equilibrium Approach* (Cambridge: Cambridge University Press, 1980).

¹⁶⁶ See *Ibid.*

¹⁶⁷ Shiva, “War,” *supra* note 68 at 98.

¹⁶⁸ See Benjamin R. Barber, “Jihad vs. Mcworld” (1992) 269 *The Atlantic Monthly* online: <<http://www.theatlantic.com/politics/foreign/barjiha.htm>> at 149.

per cent of all food exports from developing countries.¹⁶⁹ By the year 2000/2001, this had fallen to around nineteen per cent.¹⁷⁰ The increase in the share of non-traditional agricultural exports marks the shift from staple food crops to export-oriented commodities. The increase in the share of such non-traditional agricultural exports, particularly horticulture (fruit, vegetables and flowers), was from around fifteen to twenty-two per cent for the same period.¹⁷¹

The shift to export-oriented agriculture might not be a problem as such, as long as exports generate income sufficient to support food security through adequate exchange entitlements. However, extra costs due to the intensification of agriculture, as well as reduced prices in international markets because of competition from highly subsidised corporate farming, have caused costs to exceed earnings from the exports of developing countries.

The neo-liberal approach to international trade dictates to developing countries to achieve food security by importing food, instead of producing it. Massive imports of cheap foods at subsidised prices hijack local markets.¹⁷² Highly subsidised industrial food products from industrialized countries flood the domestic markets of developing countries.

¹⁶⁹ John Humphrey & Olga Memedovic, *Global Value Chains in the Agrifood Sector* (Vienna: United Nations Industrial Development Organization, 2006) at 1.

¹⁷⁰ *Ibid.*

¹⁷¹ *Ibid.*

¹⁷² See Shiva, "War," *supra* note 68 at 122.

Consequently, prices for TKBAPs drop by significant margins. This trend renders farming unprofitable, and pushes local farmers into debt.¹⁷³

In addition, emerging trends in global economic relations – addressed in the Section below – have compromised the prospect of international trade to contribute to food security in most developing countries.¹⁷⁴ These trends, combined with impacts of biotechnology on agriculture, threaten even the accessibility of food, let alone its acceptability and adequacy.

To ensure that food security, in terms of the acceptability, adequacy, and accessibility of food becomes reality, the goals and pillars of food security are currently promoted and discussed under the rubric of food sovereignty, rather than security.¹⁷⁵ The food sovereignty movement is founded on the notion that “feeding a nation’s people is an issue of national security – of sovereignty.”¹⁷⁶ “Food sovereignty” is considered to speak to the right of states to maintain and develop their own capacity to produce their basic foods respecting cultural and productive diversity. As well, the notion recognizes the rights of peoples to decide on the foods they wish to produce and consume.¹⁷⁷ Via Campesina, a global farmers’ movement, coined the term to describe its vision of participatory rural

¹⁷³ See *Ibid.*

¹⁷⁴ See discussion in Section 3.4 below.

¹⁷⁵ See Francisco Menezes, “Food Sovereignty: A Vital Requirement for Food Security in the Context of Globalization” (2001) 44 *Development* 29 at 33.

¹⁷⁶ See Peter Rosset, “Food Sovereignty Global Rallying Cry of Farmer Movements” (2003) 9 *Backgrounder* at 1.

¹⁷⁷ See Michael Windfuhr & Jennie Jonsén, *Food Sovereignty: Towards Democracy in Localised Food Systems* (Warwickshire: ITDG Publishing, 2005) at 1.

development policies at the national level.¹⁷⁸ In a position statement Via Campesina presented at the 1996 World Food Summit, it declares that food sovereignty is a logical precondition for the existence of food security:

Long-term food security depends on those who produce food and care for the natural environment. As the stewards of food producing resources we hold the following principles as the necessary foundation for achieving food security. ... Food is a basic human right. This right can only be realized in a system where food sovereignty is guaranteed.... Food sovereignty is a precondition to genuine food security.¹⁷⁹

A recent intergovernmental panel sponsored by the United Nations and the World Bank clarifies the framework of food sovereignty to include the rights of both States and peoples: “[T]he right of peoples and sovereign states to democratically determine their own agricultural and food policies.”¹⁸⁰

Fundamentally, the concept of food security is distinguished from food sovereignty in that the former is mostly associated with production models of industrial agribusinesses whereas the latter is represented by agroecological productions which enables localised control over food systems. As such, the operational models each incorporates distinguish the concepts of food security and food sovereignty. However, both food security and food sovereignty are generally concerned with how agricultural production ought to be

¹⁷⁸ Marilyn Borchardt, “Global Small-Scale Farmers’ Movement Developing New Trade Regimes” (2005) 28:97 *Food First News & Views* at 2.

¹⁷⁹ Via Campesina, “Food Sovereignty: A Future without Hunger” (1996) online: <http://www.voiceoftheturtle.org/library/1996_per_cent20Declaration_per_cent20of_per_cent20Food_per_cent20Sovereignty.pdf>

¹⁸⁰ See International Assessment of Agricultural Knowledge, Science and Technology for Development, *Global Report: Agriculture at Cross Roads* (Washington: IAASTD, 2008) at 10.

configured in order to address the plight of the large part of the world's population that is classified as "undernourished."¹⁸¹

The theme of this thesis, which is the creation of an appropriate legal framework for the protection of TKBAPs requires addressing the challenges of ensuring food security in the global economy. The viewpoint argued is that a protective regime for TK and TKBAPs should be designed under the framework of food sovereignty. The discussion in Chapter Six examines whether, and how, GIs – as legal instruments to protect TKBAPs – embrace the fundamental pillars of food sovereignty.¹⁸²

As noted earlier, the technological transformation of agricultural production has significant effect on the cultural identity of ILCs. Given that TK and TKBAPs are ingrained in culture, their protection and preservation is integrated with the protection and preservation of ILCs' cultural identity. The role of GIs as instruments of protection is, in this context, best understood by examining the extent to which they empower agricultural communities to exert control over emerging global economic pressures that interact with their cultural processes. Thus, it is pertinent to consider briefly factors that drive

¹⁸¹ FAO estimates that a total of 925 million people are undernourished in 2010. See FAO, *The State of Food Insecurity in the World: Addressing Food Insecurity in Protracted Crises* (Rome: Food and Agriculture Organization of the United Nations Rome, 2010) at 8; also, see Richard Lee, "Food Security and Food Sovereignty" Centre for Rural Economy Discussion Paper Series No. 11 (2007) at 13 (noting that both food security and food sovereignty are concepts concerned with how ... to best address the plight of 800 million people who are classified as undernourished).

¹⁸² See text accompanying note 264, Chapter 6.

contemporary global economic interactions toward a uniform socio-cultural orientation or “cultural homogenisation.”¹⁸³

3.3.4 THE THREAT OF CULTURAL HOMOGENIZATION

In addition to socio-economic and ecological impacts, technology-based agriculture poses challenges to ILCs’ cultural identity. The so-called “new globalization” creates pressure on “fragile local social and cultural structures,” in the process, empowering large “de-territorialised,” “transnational” food and agricultural processing and retailing corporations that play a big role in international agri-food production and distribution.¹⁸⁴ The expansion of technology-driven agricultural production in this manner, affects the lives of ILCs in two ways.

First, as market driven development strategies continue to streamline methods of agricultural production, the existence of a “variety of processes and narrative frameworks” of production in cultural and traditional practice is perceived as “economically wasteful.”¹⁸⁵ In a determination of an acceptable category of plants and

¹⁸³ Considered as “a central problem in today’s global interaction,” the term “cultural homogenisation” is used in theories about the relationship between local and global, and is often equated with terms like “cultural globalization,” “Westernisation” or “Americanisation.” Appadurai explains that “cultural homogenisation” refers to the “commoditization” of global cultural artefacts as a result of the economic and cultural domination of American consumerism in the global sphere. See Arjun Appadurai, *Modernity at Large: Cultural Dimensions of Globalization* (Minneapolis: University of Minnesota Press, 1996) at 32; see also Amresh Sinha, “Globalization: ‘Making Geography Irrelevant’” (2002) 24 *Review of Education, Pedagogy, and Cultural Studies* 181.

¹⁸⁴ Broude, note 138, Chapter 1 at 649. The term “new globalization” is used in the literature to distinguish the objectionable contemporary globalization phenomenon from the general concept of globalization that has contributed to the progress of the world for the past thousands of years. See Angela R. Riley, “Indigenous Peoples and the Promise of Globalization: An Essay on Rights and Responsibilities” (2000) 414 *Kan J L & Pub Pol’y* 155 at 156; Marie-Christine Renard, “The Interstices of Globalization: The Example of Fair Coffee” (1999) 39:4 *Sociologia Ruralis* 484 at 484.

¹⁸⁵ See Mgbeoji, “Patents and Plants”, note 31, Chapter 1 at 265.

supporting human cultures through technology-led market, therefore, “native grains, roots, fruits and other agricultural products” and their supporting traditions and cultures are neglected.¹⁸⁶ Economic pressures generated by technology-led selectivity of economically feasible agricultural practices, which often do not have consideration for cultural and social acceptability, often push TKBAPs to the point of extinction.¹⁸⁷

Second, homogenization appears through “new ways in which community can be *delinked* from place.”¹⁸⁸ Indigenous peoples maintain and update full empirical richness and detail of TK through direct observation of their territories. The adverse effects of technology-based transformation of agriculture result in social and environmental pressures that are expressed in the form of migration of rural population, opening-up of forestry for cultivation, and disruption of traditional ways of life. Global economic factors exert pressures that may result in the dislocation of ILCs from their land. This seriously impacts the maintenance of TK systems, as it “breaks the generation-to-generation cycle of empirical study of the ecosystem,” which is a means of transmitting and acquiring TK.¹⁸⁹ Brydon notes that “the delinking of community from place ... [is] usually attributed to globalization.”¹⁹⁰ Given that ILCs have “long maintained their autonomy

¹⁸⁶ *Ibid.*

¹⁸⁷ See Saharah Moon Chapotin & Jeffrey D. Wolt, “Genetically Modified Crops for the Bioeconomy: Meeting Public and Regulatory Expectations” (2007) 16 *Transgenic Res* 675–688.

¹⁸⁸ See Wendy Russell, “Globalism, Primitive Accumulation and Nishnawbe-Aski Territory: The Strategic Denial of Place-Based Community” in Diana Brydon & William D. Coleman, *Renegotiating Community: Interdisciplinary Perspectives, Global Contexts* (Vancouver: UBC Press, 2009) at 32[*emphasis added*].

¹⁸⁹ Russel Lawrence Barsh, “Indigenous Knowledge and Biodiversity” in note 127, Chapter 2, at 75.

¹⁹⁰ See Diana Brydon, “Globalization and Autonomy” online: <http://www.globalautonomy.ca/global1/glossary_pop.jsp?id=CO.0053>.

through ties to place,” delinking factors threaten their autonomy over their social and cultural lives.¹⁹¹

In this context, how far GIs would react to the threat of cultural homogenisation as tools to protect TKBAPs is central to the focus of this thesis. GIs are protected based on the strong association between agricultural products, territorial culture and the traditional practice of ILCs.¹⁹² The territorial attachment that GIs preserve as a basis of protection has significant implications for the rights of indigenous peoples to own, develop, control, and use the lands and territories which they have traditionally owned or otherwise occupied and used.¹⁹³

Thus far, this Chapter has shown that the major factors that affect ILCs on the production side of TKBAPs have global origins. Even so, their effects on traditional agricultural systems necessitate protection for TK and TKBAPs at the local level. As well, threats to TK and TKBAPs exist on the side of supply, distribution, and consumption of TKBAPs in global markets. Meanwhile, GIs operate in legal frameworks at local, national, and international levels of the global economy. Consequently, the instrumentality of GIs can better be understood in terms of serving as protection models for TKBAPs in light of the challenges ILCs face from the dynamics of globalisation. The following discussion therefore examines challenges and threats at the global level – challenges to the global market for TKBAPs.

¹⁹¹ *Supra* note 175 at 2.

¹⁹² See Chapter 5 Section 5.5.3, below.

¹⁹³ These rights are parts and parcels of the rights to self-determination and cultural integrity of indigenous people. See note 104, Chapter 2, Art. 26 (1).

3.4 TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS IN GLOBAL MARKETS

The term “globalisation” has a range of connotations; in its various definitions, the term has encompassed a wide range of economic, legal, and socio-political contexts.¹⁹⁴ This thesis adopts the broad and general view that perceives the phenomenon of globalisation as “an integratory process in which economic inputs, including, *inter alia*, capital, labour, production, and distribution are interrelated across borders to create global opportunities for commerce and industry.”¹⁹⁵ In this sense, the process of globalization cuts across borders “to achieve a degree of interdependence and/or inter-relatedness that increases transnational flows of goods, information ... and problems.”¹⁹⁶

Beyond the debates about the imprecise nature of the phenomenon, much controversy regarding globalisation centers on its effects on the different actors in the global economy. A growing chorus of critiques maintain that globalisation has merely accentuated global economic inequalities, making the “rich richer and the poor poorer.”¹⁹⁷ However, Amartya Sen reframes the debate by stating that “the proper question is not whether the poor are getting poorer, but whether they are sharing fairly in the riches and

¹⁹⁴ It goes beyond the purpose in the thesis to fully explore the mega issues raised by the term “globalisation.” For an extensive discussion in the intellectual property context, see Doris Estelle Long, “Globalization: A Future Trend or a Satisfying Mirage?” (2001) 49 J Copyright Society 313; Marie-Christine Renard, “The Interstices of Globalization: The Example of Fair Coffee” (1999) 39: 4 Sociologia Ruralis 484; Daniel Drezner, “Globalizers of the World, Unite!” (1998) 21 Washington Quarterly 209-226.

¹⁹⁵ See Doris Estelle Long, “Democratizing Globalization: Practicing the Policies of Cultural Inclusion” (2002) 10 Cardozo J of Int’l & Comp L 217 at nn. 25.

¹⁹⁶ *Ibid.*

¹⁹⁷ See Helen Stacy, “Relational Sovereignty” (2003) 55 Stan L Rev 2029 at 2040.

abundances of the new world.”¹⁹⁸ In this sense, and in the context of this thesis, globalisation can accurately be evaluated by assessing its impact on the ability of ILCs to participate in the market for their tradition-based agricultural products.

In international trade, agricultural products suffer from two phenomena that relate to globalisation: Volatility of international prices and consolidation of agricultural markets. The former refers to the diminishing of prices for TKBAPs, and the latter relates to the increasing globalisation of the markets for agri-food. The diverse impact of the two in the political economy of traditional farmers is far-reaching and, as a result, forms the subject of subsequent analysis in this Chapter.

3.4.1 THE CONSOLIDATION OF AGRICULTURAL MARKETS

Facilitated by advancements in the technological and digital world, globalisation in the agricultural sector has brought numerous challenges for ILCs. In the agricultural sector, “increased inter-linkage and concentration at almost all stages of the production and marketing chain” typically characterises globalization.¹⁹⁹ In the process of globalisation, the limited number of large-scale trade and retail agribusiness companies are “integrating backward to primary product handling and forward to retail distribution,” thereby taking the market power away from agricultural producers.²⁰⁰ Consonant with the

¹⁹⁸ Amartya Sen, *Address at Santa Clara University Institute on Globalization* (October 29, 2002) cited in Riley, *supra* note 184 at 178.

¹⁹⁹ Ina Horlings & Terry Marsden, “Towards the Real Green Revolution? Exploring the Conceptual Dimensions of a New Ecological Modernization of Agriculture that Could ‘Feed the World’” The Centre For Business Relationships, Accountability, Sustainability and Society Working Paper Series No. 54 (2010) at 13.

²⁰⁰ World Bank, *World Development Report: Agriculture for Development* (Washington DC: The International Bank for Reconstruction and Development / The World Bank, 2007) at 135.

concentration of the supply of agricultural inputs at the production line (pesticides, seeds, and crop genetic technologies), the consolidation across the chains of production, processing, and distribution has become a salient feature of the market side of agricultural products.

The consolidation of markets in the hands of a few corporations solidifies the power of transnational corporations over traditional agricultural producers, thereby reducing “the range of opportunities for producers, [and] their leverage.”²⁰¹ Because of the influence of globalisation in agricultural marketing and production, traditional agricultural producers find it difficult to participate equitably in the markets. As aggregate chains become increasingly globalised, “the dominant players downstream in the supply chain capture more value and ... increase entry barriers” to producers of TKBAPs.²⁰²

3.4.2 DIMINISHING INCOME IN INTERNATIONAL MARKET

Corporate control of agricultural markets has a significant impact on international prices for agricultural products in different ways. Current supply of agricultural products is mainly conducted through “a network of food-related business enterprises through which products move from production through consumption, including preproduction.”²⁰³ Referred to as the supply chain, these chains of networks include producer, processor,

²⁰¹ See Bryan Lewin et al, *Coffee Markets New Paradigms in Global Supply and Demand* (Washington, DC: The International Bank for Reconstruction and Development, 2004) at 34.

²⁰² *Ibid.*

²⁰³ Micheal D. Boehlje et al, “Value Chains in the Agricultural Industries,” Purdue University Staff Paper # 99-10, (1999) at 4.

distributor, wholesaler, retailer, and consumer.²⁰⁴ The availability of supply chains, which can be contained within a single firm or divided among different firms, goes in line with corporations' strategy of adding value at each stage of agricultural supply, while reducing costs at all stages of agricultural production and distribution. Corporations strategise on their marketing initiatives by adding values to each value chain in a manner that responds to increased specificity in consumer demand.²⁰⁵ Value-addition is "the contribution to final product value by each stage in the production, delivery, and marketing process."²⁰⁶

The price of agricultural products in global markets reflects only those values that are added when the final products enter external markets. The rules of the market do not allow the recognition of non-monetary values added to agricultural products in the course of traditional agricultural production, values that result in the specificity of TKBAPs.²⁰⁷ As a result, the income that farmers receive for their products continues to plummet while consumer prices for the same products rise.²⁰⁸ Biodiversity-rich communities cannot convert their resources into economic benefits in the market due to lack of mechanisms to assign value to TKBAPs.²⁰⁹

²⁰⁴ *Ibid.*

²⁰⁵ *Ibid.*

²⁰⁶ Cletos Mapiye, "Potential for Value-Addition of Nguni Cattle Products in the Communal Areas of South Africa: A Review" (2007) 2 *African Journal of Agricultural Research* 488 at 490. Typical value-addition activities include: "imparting desirable taste and improvement in hygienic quality, raising food safety by detoxification, use of additives and flavours, fortification with vitamin, fatty acids and amino acids, use of antioxidants..." see *ibid.* at 489.

²⁰⁷ *Ibid.*

²⁰⁸ Note 128, Chapter 2, at 12.

²⁰⁹ Peter K. Yu, "Currents and Crosscurrents in the International Intellectual Property Regime" (2004) 38 *Loy L A L Rev* 323 at 429–35.

TKBAPs are simply relegated to commodity chain markets as any other bulk products; processed agri-food products, on the other hand, enjoy premium price.²¹⁰ Consumer prices for agri-food production continue to soar in international markets because of value addition at the later stages of production. However, income for traditional farming communities has been in decline, because traditional agricultural products receive lower prices in commodity markets.²¹¹

In addition, producers of traditional agricultural products face a long-term downward trend in prices as biotechnology-supported global supply outpaces demand.²¹² The provision of economic subsidies by industrialized countries to large-scale agricultural producers results in overproduction of agricultural food products.²¹³ As a recent study notes:

[T]he progressive expansion of commercial-industrial relations in agriculture has put further strain on many small-scale farmers in developing countries who must also contend with direct competition from production systems that

²¹⁰ A “commodity chain” is defined as “a network of labour and production processes whose end result is a finished commodity.” Jennifer Bair, “From Commodity Chains to Value Chains and Back Again?” (Paper Presented at “Rethinking Marxism,” University of Massachusetts at Amherst, November 6-9, 2003). It is important to note that the concept of “commodity chain differs from value chain in that the latter carries valuable additions beyond first stage production of raw materials. Value chain is preferred to commodity chain because it “focuses on value creation and value capture across the full range of possible chain activities and products (goods and services), and because it avoids the limiting connotations of the word ‘commodity’.” See R Swedberg & NJ Smelser, *The Handbook of Economic Sociology* (Princeton: Princeton University Press, 1995) at 18.

²¹¹ Fafchamps, Marcel & Hil, Ruth Vargas, “Selling at the Farm-gate or Travelling to Market” Centre for the Study of African Economies (Paper Series No. 23 2004)

²¹² In a recent study, for example, it was revealed that traditional staple crop income has decreased from about 35 per cent in 1995 to only 15 per cent in 2007. Krystyna Swiderska et al, *Protecting Community Rights over TK: Implications of Customary Laws and Practices. Key Findings and Recommendations 2005-2009* (London: IIED, 2009) at 9.

²¹³ See L.E. Jackson *et. al*, “Utilizing and Conserving Agro-biodiversity in Agricultural Landscapes” (2007) 121 *Agriculture, Ecosystems and Environment* 196 at 199.

are highly subsidized and capital intensive and, thus, able to produce commodities that can be sold more cheaply.²¹⁴

Factors of large-scale production, subsidised farming, and technological intervention contribute to a large percentage of the global supply of agricultural products in international trade, thereby, contributing to low prices for commodity products. As a result, commodity prices for agricultural products in the global market “do not reflect the actual environmental and social costs of the products” on the side of ILCs.²¹⁵

In the context of this thesis, the issue turns on the role of IP in recognizing the local and cultural values embedded in TKBAPs; in other words, whether IP can be used to support efforts that enable ILCs to acquire a share in global markets for their products.²¹⁶ As a corollary, the role of GIs to provide mechanisms that empower ILCs to optimize value for their products becomes relevant. The instrumentality of GIs to serve this purpose depends on their potential to defend the interests of ILCs in the global knowledge economic order.

In anticipation of the examination of the role of GIs in recognising the value of TKBAPs in subsequent Chapters, the following Section explores issues relating to the use

²¹⁴ See *supra* note 199 at 7.

²¹⁵ Note 128, Chapter 2, at 12. The price for wholesale commodities in the central market system is mainly determined through the buying and selling companies in New York and London. The price fixed in the international level influences the local auction prices through which most TKBAPs are sold. See Awudu Abdulai, “Spatial Integration and Price Transmission in Agricultural Commodity Markets in Sub-Saharan Africa” in Alexander Sarris & David Hallam, *Agricultural Commodity Markets and Trade: New Approaches to Analyzing Market Structure and Instability* (Cheltenham: Edward Elgar Publishing, 2006); Randy Schnepf, “Price Determination in Agricultural Commodity Markets: A Primer” CRS Report for Congress, (2006).

²¹⁶ See, for example, Visser, note 4, Chapter 1; Rosemary J. Coombe, Steven Schnoor & Mohsen Ahmed, “Bearing Cultural Distinction: Informational Capitalism and New Expectations for Intellectual Property” (2007) 40 UC Davis L Rev 891.

of IP to recognize the value of TK. The discussion starts with a brief overview of the economic conditions that highlight the need to recognize the value of TKBAPs in the GKE.

3.5 RECOGNIZING THE VALUE OF TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS

In the GKE, the IP-based valuation of products in industrialized country markets has overtaken the physical value of products as the main source of income.²¹⁷ Major actors in the GKE produce and sell most IP-based products, while the economically disadvantaged countries depend on products identified as “raw products and commodities.”²¹⁸ Rural development strategies in developing countries continue to rely on boosting agricultural production in a bid to overcome intense competition with high-yield and technology-based agricultural producers for income from an ever-shrinking physical value of products.²¹⁹ Consequently, the economic policy of many developing countries has proven to be ecologically unsustainable.²²⁰ A United Nations Environmental Program study estimates that biodiversity is being lost at the rate of 50 to 100 times the natural average

²¹⁷ It is noted that in 1981, 62 per cent of the market value of Standard & Poor’s 500 companies could be attributed to tangible assets and 38 per cent to intangibles; by 1998, only 15 per cent of their assets were tangible, while 85 per cent were intangible. Light Years IP, “Distinctive values in African Exports: How Intellectual Property can raise export income and alleviate poverty” (2008) online:

< http://www.lightyearsip.net/downloads/Distinctive_values_in_African_exports.pdf > at 1.

²¹⁸ World Bank, *Trading on Your Intellect*, online: You Think Issues

< <http://youthink.worldbank.org/issues/trade/intellect.php> >.

²¹⁹ *Ibid.*

²²⁰ Charles R. Mcmanis, “Intellectual Property, Genetic Resources and TK Protection: Thinking Globally, Acting Locally” (2003) 11 *Cardozo J of Int’l & Comp L* 547 at 551 [Mcmanis, “Thinking Globally”].

loss, and that in the absence of appropriate policy measures, the rate could increase to 1000 to 10000 times in the next 25 years.²²¹

In the GKE, intangible assets in the form of “intellectual capital” play critical roles in economic development.²²² The World Bank reports that countries that have become richer over the last 30 years are those that mostly export IP-based products.²²³ However, from the beginning to the end of the 20th century, economists estimate that global trade in commodities shrank from about seventy per cent of world trade to about twenty per cent, mainly because commodities are cheaper than IP-based manufactured goods.²²⁴

For too long, agricultural products of ILCs have been wrongfully characterised as “the raw material of innovation – ancient, static, and *natural*.”²²⁵ In the agricultural economy of many traditional communities, land remains the key resource, while the biotechnology industry increasingly relies on knowledge that modern IPRs protect. The dominant actors in the agricultural market (i.e. multinational corporations), utilize IPRs as a mechanism of “valorising (i.e., adding value) to GR [genetic resources]-TK” at the final stage of the

²²¹ Robin Pellew, ed, *Global Biodiversity Assessment - United Nations Environment Program* (Cambridge: Cambridge University Press, 1995) at 2; also see Barbara T. Hoffman, *Art and Cultural Heritage: Law, Policy, and Practice* (New York: Cambridge University Press, 2006).

²²² Most popularised by Thomas A. Stewart following his seminal work, *Intellectual Capital: the New Wealth of Organization*, “intellectual capital” refers to the ownership and commercial value of intangible assets such as licenses, brand names, patents, trademarks, copyrights .etc. See Cristina Chaminade & Bino Catasús, *Intellectual Capital Revisited: Paradoxes in the Knowledge Intensive* (Cheltenham: Edward Elgar Publishing, 2007).

²²³ *Supra* note 205.

²²⁴ *Ibid.*

²²⁵ Sunder, “Invention,” note 4, Chapter 1 at 5-6 [*emphasis in the original*].

value chain.²²⁶ Their IP-based products receive premium prices in international trade, while the products of ILCs, which are at the initial stage of the global supply chain, receive low prices. As Drahos and Braithwaite observe, large companies now own more IP, especially in the areas of agriculture, plants, and food, than at any point in human history.²²⁷

In view of this growing trend, one way producers of TKBAPs may improve their position in international trade seems to be to use IP-based strategies. The use of IP instruments to support the efforts of agricultural communities has, however, mostly been opposed – among others – by segments of advocates of TK on the ground that ILCs are not amenable to modern proprietary systems of protection. This opposition is based on the differences that exist between the prevailing regimes to allocate resources and information among traditional communities on the one hand, and the modern economic system on the other.

As already pointed out, conventional IPRs are mostly suited to the needs of owners of technological and biotechnological knowledge and skills.²²⁸ IPRs operate in a market system where the norms of privatisation, enclosure and transferability guide resource

²²⁶ See Tom Dedeurwaerdere et al, “A New Market Road: Bioprospection Beyond Intellectual Property Rights” <http://perso.cpd.ucl.ac.be/dedeurwaerdere/articles_per_cent20Tom/Dedeurwaerdere_per_cent20Pascual_per_cent20Vijesh_per_cent20_2005_per_cent20version_per_cent20site_per_cent20oct_per_cent202006_per_centE2_per_cent80_per_centA6.pdf>

²²⁷ Peter Drahos & John Braithwaite, *Information Feudalism* (London: Earth Scan Publications, 2002) at 10.

²²⁸ See Section 3.2.2.2, above; also, see Graham Dutfield, *Sharing the Benefits of Biodiversity: Access Regimes and Intellectual Property Rights* (Science, Technology and Development Discussion Paper No. 6, Center for International Development and Belfer Center for Science and International Affairs, Harvard University, Cambridge, (1999).

allocation.²²⁹ In the case of ILCs, however, the informal sector of social organization bases itself on customary rules, which mostly reflect open access.²³⁰ As such, community members freely share information and resources. In this regard, protecting TK through IPRs poses a threat to practices of free exchange and mutual communal support (even as it respects the concept of national sovereignty over natural resources).²³¹

In addition, categorical opposition to IPRs, to the extent of resisting a change in system to accommodate ILCs, usually stems from a stern opposition to the IPRs regimes that the TRIPS Agreement incorporates.²³² Many consider a proposition for protection of TK through forms of IP “a fig leaf, which leaves the basic inequality [brought about by the global enforcement of IPRs], unchanged.”²³³

Thus, many advocates of TK are wary of seeing TK and TK-related resources in terms of IPRs. Some define targets for current efforts to protect TK in terms of defensively protecting TK and, in some cases, materially benefiting ILCs for their role in preserving the public domain.²³⁴ While arguments based on preserving the public domain have

²²⁹ See Chapter 2 Section 2.7

²³⁰ See Stephen A. Hansen & Justin W. van Fleet, *A Handbook on Issues and Options for TK Holders in Protecting their Intellectual Property and Maintaining Biological Diversity* (Washington, DC: American Association for the Advancement of Science, 2003) at 4 ff.

²³¹ Cottier & Panizzon, note 151, Chapter 1, at 381.

²³² *Ibid.*

²³³ *Ibid.*

²³⁴ The “public domain” may be defined as “resources for which legal rights to access and use for free (or for nominal sums) are held broadly.” See A. Chander & M. Sunder, “The Romance of the Public Domain” (2004) 92 *California Law Review* 1331 at 1338; Johanna Gibson, “Audiences in Tradition: TK and the Public Domain” in C Waelde & H MacQueen, eds, *Intellectual Property: The Many Faces of the Public Domain*, (Cheltenham: Edward Elgar, 2007).

earlier been raised to undergird the protection of TK from misappropriation and abuse through individuals' unauthorised establishment of IPRs, Sunder affirms that “so too [have these arguments] proved a stumbling block” in efforts to create a proprietary system of protecting that knowledge to the benefit of local communities and indigenous peoples.²³⁵

Despite opposition to the application of forms of IP protection to TK, recent trends indicate a shift in outlook, an outlook that understands the imperatives of harnessing economic factors to sustain the local and cultural integrity of traditional communities.²³⁶ Sunder observes that “preservation through commercialization” has been achieved, for example, through the “revitalisation of felt rug-making by the introduction of global markets,” proving that trade and culture are not necessarily contradictory.²³⁷ It is increasingly recognized that “[e]xcept in a museum setting, no traditional craft skill can be sustained unless [through]...a viable market.”²³⁸ Many traditional craftspeople and artisans are becoming more attuned to market dynamics than has generally been acknowledged in previous times.²³⁹ In some cases, GIs form part of the diverse IP-based

²³⁵ Sunder, “Invention,” note 4, Chapter 1 at 6; see Section on Traditional Knowledge and the Public Domain in Chapter 4 Section 4.6.4, below.

²³⁶ Johanna Gibson, “Markets in Tradition – Traditional Agricultural Communities in Italy and the Impact of GMOs” (2006) 3 SCRIPT-ed at 248 [Gibson, “Markets”].

²³⁷ Sunder, “Invention,” note 4, Chapter 1 at 15.

²³⁸ Maureen Liebl & Tirthankar Roy, “Handmade in India: Traditional Craft skills in A Challenging World” in Finger, J. M. & Philip Schuler, eds, *Poor People's Knowledge: Promoting Intellectual Property In Developing Countries* (Washington: World Bank, 2004) at 67.

²³⁹ *Ibid.*

strategies canvassed in various forums to promote the economic competitiveness of ILCs.²⁴⁰

Other than GIs, Chapter Four explores various mechanisms that are advanced in international law and policy as modalities to protect TK and TKBAPs. Before proceeding with that analysis, attention must turn to non-IP and non-legal strategies that have been adopted to “add value” to TKBAPs by differentiating them from similar products.

Generally, differentiation strategies aim to increase the income of ILCs from their TKBAPs through either higher prices or expanded market shares. These strategies have a similar objective with GIs in the sense that they are usually devised to enable ILCs to acquire an improved share of the global market for their products. The structure and the implementation of the differentiation strategies is next discussed for lessons to assess practical aspects of the implementation of GIs to protect TKBAPs.

3.6 DIFFERENTIATION STRATEGIES IN TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS

Various schemes exist to support ILCs in the marketing of TKBAPs. The social impact of the increasingly expansive reach of corporate players in agricultural production and marketing has generated responses to support the economic endeavours of ILCs. In recent times, a growing lobby of civil society groups and international development advocates have actively campaigned for mechanisms to ensure social development in the global structures of agri-food markets and in the trading practices of large corporate

²⁴⁰ See Chapter 4 Section 4.8; also see FAO and SINGER-GI, note 236, Chapter 2, at 141.

buyers.²⁴¹ One such mechanism involves differentiation based on attributes such as geographical location, environmental stewardship, food safety, or functionality.²⁴²

“Differentiation” involves distinguishing goods along key features of production to set apart traditional small-scale production from conventional production. In regard to the latter, “little or no information is given regarding place or conditions under which the product was produced.”²⁴³ In the words of the World Bank, differentiation strategies constitute “part of a strategy to move ‘outside of the commodity box’ as a means of adding value to agricultural commodities and offsetting declines in prices.”²⁴⁴ Through differentiation, smallholder farmers seek to develop direct relationships with consumers to promote their TK-based speciality products. This negates the distant and highly commercialised producer–consumer relations fostered through “conventional” food production for the commodity market that subjects ILCs to reduced incomes for their TKBAPs.²⁴⁵

Differentiation strategies are, therefore, techniques of “decommodification” by which small scale producers seek to overcome diminished control over commodity prices, rising costs and falling incomes under the conventional model of agri-food production.²⁴⁶ The

²⁴¹ See Stephanie Barrientos & Catherine Dolan, *Ethical Sourcing in the Global Food System* (London: James & James Science, 2006) at 35 ff.

²⁴² Steve Stevenson, *Values-Based Food Supply Chains: Executive Summary* (Ames: The Center for Integrated Agricultural Systems, 2009) at 7.

²⁴³ Note 128, Chapter 2, at 11.

²⁴⁴ *Supra* note 158 at 5.

²⁴⁵ Vaughan Higgins et al, “Building Alternative Agri-Food Networks: Certification, Embeddedness and Agri-Environmental Governance” (2008) 24 *Journal of Rural Studies* 15 at 18.

²⁴⁶ *Ibid.*

“decommodification” of traditional agricultural products through techniques of differentiation opens “alternative markets for higher-value products from developing countries.”²⁴⁷ The techniques offer producers direct control over their products and a closer relationship with buyers. They thus provide producers with “more pricing power and even a degree of monopoly.”²⁴⁸ Producers do not have these advantages if the product is traded in bulk or via commodity markets.²⁴⁹ The adoption of these strategies in some developing countries has resulted in “previously fringe niches ... quickly moving toward mainstream credibility and earning substantial revenues along the way.”²⁵⁰ In this sense, differentiation strategies take into account the interest of ILCs by changing the model in which ILCs may participate in the “commodification” of their TKBAPs.²⁵¹

Some of the strategies by which producers differentiate their products include quality certification schemes, fair trade initiatives, and green-labelling schemes.²⁵² Quality

²⁴⁷ *Supra* note 187 at 132.

²⁴⁸ Wenjing Shang et al, “Applying CRM in Information Product Pricing” in *IFIP International Federation for Information Processing* (Boston: Springer, 2008); also see *ibid*.

²⁴⁹ See M. Ataman Aksoy & John Christopher Beghin, *Global Agricultural Trade and Developing Countries* (New York: World Bank Publications, 2005) at 306 ff.

²⁵⁰ Daniele Giovannucci, “Value and Trends for Sustainable Coffees” (2002) *Tea & Coffee Trade Journal* at 1.

²⁵¹ The concept of “de-commodification” in differentiation is not necessarily counterpoised to the ordinary understanding of commodification as “the expansion of market trade to previously non-market areas, and to the treatment of things as if they were a tradable commodity.” As a method of “de-commodification,” differentiation strategies alter the familiar line of commodity trading for TKBAPs, but differentiation strategies continue to assign monetary value to TKBAPs, in a way, commodifying TKBAPs in a manner that takes into account ILCs’ interest. Robert Hassan, *The Information Society: Digital Media and Society Series* (Cambridge: Polity, 2008) at 226; also see Juha Kääriäinen & Heikki Lehtonen “The Variety of Social Capital in Welfare State Regimes – A Comparative Study of 21 Countries” (2006) 8 *European Societies* 27.

²⁵² See for example, a list of developing country-bound products covered under fair trade scheme, see Fair Trade Foundation, *Retail products* online: fairtrade

certification schemes include GIs. As such, this thesis barely pays attention to fair trade initiatives and green labelling schemes as a detailed discussion of their socio-economic implications and significance might not be relevant to its purpose.²⁵³ At the same time, in purpose, fair trade and green labelling initiatives bear a close semblance and equivalency to systems of GIs. As well, they have broad acceptance from development advocates. For these reasons, their special features and properties are briefly considered in terms of their structural and functional features. The impacts and challenges of their implementation are examined in the Section that follows.

3.6.1 QUALITY SCHEMES

Quality schemes are major differentiation strategies widely adopted as a means of keeping TKBAPs “out of the commodity box.” Under this category lie various designations and labelling initiatives for agricultural products from areas that have peculiar quality characteristics that respond to consumer demand, and which give producers a competitive advantage.²⁵⁴ Quality schemes mostly apply to agricultural products that have specific qualities because of unique production expertise and distinct

< http://www.fairtrade.org.uk/products/retail_products/default.aspx>; A list of green labelling schemes are available on <<http://www.eco-label.org.uk/files/labels/labels.html>>; quality certification schemes primary include geographical indications. See a list of GIs protected products:

< <http://www.geographicindications.com/>>. Discussion of related strategies, such as ethical trade, goes beyond the purpose and scope of the thesis. See Barrientos & Dolan, *supra* note 241 at 69.

²⁵³ For in-depth reading of these initiatives, see Anne Tallontire, “Top Heavy? Governance Issues and Policy Decisions for the Fair Trade Movement” (2009) 21 *Journal of International Development* 1004; Michael K. Goodman, “Reading Fair Trade: Political Ecological Imaginary and the Moral Economy of Fair Trade Foods” (2004) 23 *Political Geography* 891-915; Laura T. Raynold, “Poverty Alleviation Through Participation in Fair Trade Coffee Networks: Existing Research and Critical Issues” *Community and Resource Development Program Background Paper* (2002).

²⁵⁴ See EU, *Agricultural Product Quality Policy: Impact Assessment Part B: Geographical Indications* online: < http://ec.europa.eu/agriculture/quality/policy/com2009_234/ia_annex_b_en.pdf >.

agro-ecological conditions where they are produced. The promotion of these high-quality products has substantial importance, in particular, for less-favoured and remote areas.²⁵⁵ Quality schemes consist mainly of GIs in their various forms. Other variants of quality schemes, which are of lesser relevance to this thesis, are Charter Mark, the Excellence Model, IIP, and ISO 9000.²⁵⁶ The second part of the thesis addresses quality schemes in detail with a view to build on the centrality of GIs as part of the project's primary focus.

3.6.2 FAIR TRADE INITIATIVES

Fair trade schemes emerged from the “solidarity and charity movements of the mid twentieth century and, largely [focus] on providing support for small producers marginalised by the global trading system.”²⁵⁷ In response to the fall in the income of small producers due to the adverse effects of globalisation, civil society groups looked for alternative trading channels. These alternative channels could enable traditional farmers reach “socially conscious consumers” through direct access to big markets in industrialized countries, and without having to go through dominant commercial food supply chains.²⁵⁸

²⁵⁵ *Ibid.*

²⁵⁶ See Department of the Environment Transport and the Regions “Guide to Quality Schemes and Best Value”, HMSO, London (2000).

²⁵⁷ *Ibid.*

²⁵⁸ *Ibid.*

In broader terms, “fair trade” is both a movement and a set of business initiatives that arose from a critique of conventional trade policy and practice.²⁵⁹ The widely accepted definition of “fair trade,” endorsed by the fair trade umbrella Organization, FINE,²⁶⁰ posits that:

Fair Trade is a trading partnership, based on dialogue, transparency, and respect, that seeks greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of, marginalised producers and workers – especially in the South. Fair Trade organizations (backed by consumers) are engaged actively in supporting producers, awareness raising and in campaigning for changes in the rules and practice of conventional international trade.²⁶¹

There are two divergent approaches of implementing fair trade: Alternative trade organizations (ATOs) and Fairtrade labelling initiatives. ATOs are charity and humanitarian organizations involved in establishing alternative trade links with producer organizations (cooperatives and associations) across a range of developing countries.²⁶² These growing number of companies, mostly located in Europe and North America (that is, the alternative trade organizations), devise fairtrade strategies, and typically, they work

²⁵⁹ The term fair trade is distinguished from the trademark fairtrade (one word). The latter refers to the specific labelling scheme controlled by Fairtrade Labelling Organizations International (FLO) and its member organizations. Oxford Policy Management/International Institute for Environment and Development, *Fair Trade: Overview, Impact, Challenges* (2000) Study to Inform DFID’s Support to Fair Trade online: <<http://portals.wi.wur.nl/files/docs/ppme/ACF3C8C.pdf>> at 3;

²⁶⁰ FINE is an acronym derived from the initials of four main Fair Trade networks that created an informal association in 1998: Fairtrade Labelling Organizations International (FLO); International Fair Trade Association, now the World Fair Trade Organization (WFTO); Network of European Worldshops (NEWS!) and European Fair Trade Association (EFTA). See the respective websites at <http://www.fairtrade.net/>; <http://www.wfto.com/>; <http://www.worldshops.org/>; <http://www.eftafairtrade.org/>.

²⁶¹ See European Observatory on Fair Trade and Public Procurement, *Fair Trade Definition as Agreed by FLO, WFTO, NEWS! and EFTA* online: <<http://www.european-fair-trade-association.org/observatory/index.php/fair-trade>>.

²⁶² See Barrientos & Dolan, *supra* note 241 at 7.

with small-scale producers in developing countries.²⁶³ Notwithstanding differences in their priorities and emphases in their operations, all these organizations have a common objective: “[T]o foster a trading model that respects Southern producers as equal partners in a business relationship.”²⁶⁴

Starting from 1980s, many companies have adopted a market strategy to label their products as “environmental-friendly.” Such labelling is “a means of communicating information about the social or environmental conditions surrounding the production of goods or provision of a service.”²⁶⁵ The “fair trade labelling” initiative has since been adopted as “a viable marketing concept” that targets mainstream retail outlets.²⁶⁶ Under the fair trade labelling initiative, a number of organizations offer an independent service: They set standards for a particular sector or commodity and oversee their development, accreditation, and certification processes.²⁶⁷

The Fairtrade Labelling Organization International (FLO) arose from the success of the fair trade labelling process. Its efforts boost consumer recognition and facilitate market growth in a wide range of agricultural products. Established in 1997, FLO aims to harmonise standards and activities regarding labelling with the objective to prevent the proliferation that would undermine fair trade objectives. Thus, the Fairtrade Foundation, a

²⁶³ These organizations include, for example, Oxfam; Fair Trade Federation; Association for Promoting Fairtrade in Finland; Economic Development Imports; Fair World Designs. See a comprehensive list of ATOs and their websites in Fair Futures <<http://www.fairfutures.at/doku/f+f07+per+cent20websites.pdf>>

²⁶⁴ See Barrientos & Dolan, *supra* note 241 at 7.

²⁶⁵ Mick Blowfield, “Ethical Trade: A Review of Developments and Issues” (1999) 20 *Third World Quarterly* 753 at 756.

²⁶⁶ Barrientos & Dolan, *supra* note 241 at 8.

²⁶⁷ See *supra* note 265 at 761.

component of FLO, grants Fairtrade certification, and licenses the “FAIRTRADE” mark to organizations that comply with standards of minimum social and economic requirements.²⁶⁸

3.6.3 GREEN LABELLING AND ECO-CERTIFICATION SCHEMES

Like fair trade initiatives, green labelling and eco-certification initiatives emerged only recently. The aims of the two movements green labelling and eco-certification, and fair trade initiatives are different. Green labelling and eco-certification are concerned with the ecological conditions of production, whereas the fair trade initiative aims at the social conditions of production. Unlike fair trade, ecological standards emerged as a “new form of regulation...alongside traditional legislation.”²⁶⁹ It is beyond the scope of this thesis to discuss green labelling and eco-certification schemes in their role as legal instruments for implementing environmental policy.²⁷⁰

Though they are different in their origins, the fair trade and green labelling movements have been forging common grounds in recent times. Both strategies serve as useful policy tools to address inequalities in the global economy in terms of offering

²⁶⁸ See detailed standards and conditions for the trademark and certification initiative in Fair Trade Foundation, *Fairtrade Standards* online: < http://www.fairtrade.org.uk/what_is_fairtrade/default.aspx>.

²⁶⁹ Magnus Boström & Mikael Klintman, *Eco-Standards, Product Labelling and Green Consumerism* (Newyork: Palgrave Macmillan, 2008) at 27.

²⁷⁰ For an extensive discussion of environmental labelling and ecological certification in the context of environmental law and policy, see John J. Emslie, “Labelling Programs as a Reasonably Available List Restrictive Trade Measure Under Art. XX’s Nexus Requirement” (2005) 30 *Brook J Intl L* 510 at 514; Jagdish Bhagwati, “Aggressive Unilateralism: An overview” in Jagdish Bhagwati & Hugh T. Patrick, eds., *Aggressive Unilateralism: America’s 301 Trade Policy and the World Trading System* (Michigan: University of Michigan Press, 1990).

opportunities to traditional agricultural producers to target niche markets.²⁷¹ Green labelling, often distinguished from eco-labelling,²⁷² is defined as:

Labelling which conveys information about the environmental impact of *producing, processing, transporting, or using a food product*...in one or more of several dimensions: soil, water, and land-use practices; pest control practices; and/or energy and resource consumption. Green labelling is certainly needed, because these characteristics are not evident to the senses and yet they matter to many consumers.²⁷³

In the contemporary understanding of the concept, green labelling comprises three basic features:²⁷⁴ i) It is based on the standardization of principles and prescriptive criteria; ii) it is market-based and consumer-oriented; and iii) it relies on symbolic differentiation. The first feature, expressed in most forms of green labels, implies that ordinarily, producers who want to use the labels on their products must comply with standards that primarily deal with environmental problems (though economic and social concerns could also be incorporated).²⁷⁵ Most often, third parties that are independent of the producers set the labelling standards.

²⁷¹ For analysis of the utility of environmental labelling and eco-certifications in fair trade schemes, see Laura Reynolds, "Organic and Fair Trade Movements in Global Food Networks" in *supra* Barrientos & Dolan, *supra* note 241 at 49-62; Peter Leigh Taylor, "In the Market But Not of It: Fair Trade Coffee and Forest Stewardship Council Certification as Market-Based Social Change" (2005) 33 *World Development* 129-147.

²⁷² According to Bostrom & Klintman, eco-labelling is an empirical term distinguished from the more general term green labelling because the latter covers tools related to eco-labelling such as stewardship certificates, green mutual funds, and also green trademarks. Magnus Boström & Mikael Klintman, *Eco-Standards, Product Labelling and Green Consumerism* (Newyork: Palgrave Macmillan, 2008) at 28.

²⁷³ Elizabeth Barham, "Towards A Theory of Values-Based Labelling" (2002) 19 *Agriculture and Human Values* 349 at 353 [Barham, "Towards"] [*emphasis in original*].

²⁷⁴ *Supra* note 269 at 28.

²⁷⁵ *Ibid.*

Secondly, green labels are markers that communicate beneficial consumer choices in terms of environmental, health, safety, sustainability, and/or solidarity preference of consumers and professional buyers. Thus, green labels often define the commercial relationship between producers and consumers by revealing particular preferences of consumers in the production of the good.²⁷⁶ The third feature of green labels, symbolic differentiation, refers to the ability of the products that bear the labels to communicate that the “product has a quality ... that equivalent products (or substitutes) lack...that this product is *different* from other products, often discursively signalled as ‘conventional products’.”²⁷⁷

A broader understanding of the concept of labelling incorporates a number of ecological and environmental schemes. These schemes include eco-certifications, organic certifications, the so-called green trademarks, stewardship certificates, and green mutual funds.²⁷⁸ To set the stage for analysis of the instrumentality of GIs in the second part of this thesis, the next Section evaluates the success and effectiveness of fair trade and labelling initiatives as differentiation strategies for TKBAPs.

²⁷⁶ Alex Nicholls, “Eco-labelling – as A Potential Marketing Tool for African Products: An Overview of Opportunities and Challenges” online: UNEP <<http://www.unep.org/roa/docs/pdf/Eco-labelling-Brochure.pdf>> at 6.

²⁷⁷ *Supra* note 269 at 29 [*emphasis in the original*].

²⁷⁸ See Huseyin Gokcekus, Turker Umut & James W. LaMoreaux, *Survival and Sustainability: Environmental Concerns in the 21st Century* (London: Springer, 2011); Frieder Rubik & Paolo Frankl, *The Future of Eco-Labelling: Making Environmental Product Information Systems Effective* (London: Greenleaf Pub., 2005); Jacquelyn Ottman, *The New Rules of Green Marketing: Strategies, Tools, and Inspiration for Sustainable Branding* (Sheffield: Berrett-Koehler Publishers, 2011).

3.7 CHALLENGES AND IMPACTS OF DIFFERENTIATION SCHEMES

The aforementioned initiatives are intended to address global inequalities encountered in the course of building markets outside the conventional supply chains for producers of TKBAPs. Most forms of the initiatives represent useful means of building consumer trust and attracting consumer interest to the products they differentiate. Concrete evidence suggests that fair trade initiatives and environmental labelling schemes have brought significant marketing opportunities for TKBAPs in the global market.²⁷⁹

The strategy of differentiation through fair trade and green labelling is beneficial for providing access to niche and mainstream markets, generating higher prices and promoting environmental sustainability, among other benefits.²⁸⁰ Consumer appetite for agricultural products from tradition-based agricultural producers would seem to rise in the future, given the lack of consumer confidence and trust as to the health and safety impacts of most products of agro-biotechnology that are in the market.²⁸¹ Though the positive impact of fair trade and its role in serving social policy objectives is not disputed, there remain bottlenecks in the pursuit of some of the objectives it is meant to serve.

²⁷⁹ The market for the fair trade system in the UK is estimated at \$35.6 billion in 2002, while the number correctly associating Fairtrade symbol with its accompanying text “Guarantees a better deal for third world producers,” rose from 42 per cent in 2004 to 51 per cent in 2005. The public recognition of the fair trade concept increased from 9 to 74 per cent from 2000-2005 in France, while in the US, consumption of fair trade coffee rose from 28 to 45 per cent from 2003 to 2004. Barrientos & Dolan, *supra* note 241 at 17.

²⁸⁰ See Sununtar Setboonsarng, “Can Ethical Trade Certification Contribute to the Attainment of the Millennium Development Goals? A Review of Organic and Fair-trade Certification” ADB Institute Discussion Paper No. 115 (2008); Ian Hudson & Mark Hudson, “Fair-trade Coffee: The Prospects and Pitfalls of Market Driven Social Justice: Brewing Justice: Fair-trade Coffee, Sustainability, and Survival: Fair-trade: The Challenges of Transforming Globalization” (2009) 17 *Historical materialism* 237-252.

²⁸¹ *Supra* note 159.

Initiatives under the fair trade scheme seek to transfer “greater control of the agro-food system to [small scale] producers in developing countries.”²⁸² The initiatives were originally intended to increase the bargaining power of producers vis-à-vis buyers, to tackle producers’ socioeconomic problems, to provide them with capacity-building assistance, and to help them get access to finance.²⁸³ However, current turn of events leave serious doubts as to whether the fair trade system can fulfill the objectives it stands for. This is because, while the founding principles of fair trade remain oriented towards “small and marginalised producers,” – mostly producers of traditional agricultural products – large-scale producers often capitalise on the marketing opportunity opened by the fair trade schemes through their own “fair trade” strategies.²⁸⁴ These strategies are often criticised as “an attempt to cash in on a growing market,” rather than a “business model that privileges the ethical values of social responsibility.”²⁸⁵

Originators of the fair trade movement express the concern that small-scale producers – targets for the pioneering of the movement – would be displaced by larger producers as corporate-controlled fair trade “look alike” initiatives facilitate purchases “from larger commercial farms or ‘plantations’.”²⁸⁶ Thus, tensions between the commercial imperatives of competitiveness and the social aims of fair trade have brought

²⁸² Karen Ellis & Jodie Keane, *A Review of Ethical Standards and Labels: Is There a Gap in the Market for a New ‘Good For Development’ Label?* Overseas Development Institute Working Paper 297 (2008) at 10.

²⁸³ *Ibid.* at 10.)

²⁸⁴ *Supra* note 269 at 24.

²⁸⁵ *Ibid.* at 17 and 18.

²⁸⁶ Barrientos & Dolan, *supra* note 241 at 24; see Laura T. Raynolds, Douglas L. Murray & John Wilkinson, *Fair Trade: the Challenges of Transforming Globalization* (Oxon: Routledge, 2007) at 232.

disadvantages to traditional agricultural producers. In other words, fair trade initiatives aspire to build fairness through securing increased market share for TKBAPs. However, competition from corporations in the conventional global agri-food supply system seems poised to challenge the pursuit of fairness in the global economy that fair trade schemes seek to advance.²⁸⁷

Consumer interest in products whose production respects ecological integrity presents greater opportunity for corporations and corporate-driven groups to develop their own differentiation schemes that misrepresent developing country producers of TKBAPs. Realizing that environmental concerns could be translated into a market advantage, a number of environmental declarations and claims have emerged in association with products that substitute TKBAPs. The impacts of green trademark schemes and in-house corporate certifications (labelling techniques based on a company's own standardization of prescriptive criteria regarding products with established market credibility) have been exposed through widespread use of "greenwash" techniques. These are techniques in which "transnational corporations (TNCs) are preserving and expanding their markets by posing as friends of the environment and leaders in the struggle to eradicate poverty."²⁸⁸ Many superficially "green" companies have adopted green washing tactics and "self-made promises" in the form of self-styled environmental symbols. They also resort to

²⁸⁷ See Laura, *ibid.*

²⁸⁸ Kenny Bruno, *The Greenpeace Guide to Greenwash* (Washington, D.C.: Greenpeace International, 1992) at 2. To read more about "greenwash," see Jed Greer & Kenny Bruno, *Greenwash and Corporate Environmentalism* (Penang: Third World Network & The Apex Press, 1997); Hadley Archer et al, "The Impact of Forest Certification Labelling and Advertising: An Exploratory Assessment of Consumer Purchase Intent in Canada" (2005) 81 *The Forestry Chronicle* 229.

claims that their products are “environmentally friendly” and “safe for the environment” but as marketing strategies just for profit purposes.²⁸⁹

Secondly, fair trade initiatives, and some of the green labelling schemes, aim to empower agricultural producers in developing countries to acquire greater and independent control of the agri-food market. The objective behind providing financial and material support to implement these initiatives is to help small-scale producers access the market by their own efforts.²⁹⁰ Mostly reliant on foreign standards and certifying bodies, the system of certification in fair trade and eco-labelling incorporates expensive procedures of rigorous inspection and certification that can only be fulfilled through donor financial support from governments and social lending institutions.²⁹¹ In addition, the criteria setting and conformity-assessment procedures in some eco-labelling schemes are “very subjective and lack uniformity,” making their attainment challenging.²⁹²

The problem becomes more acute if the green certification standard is based on the adoption of environmentally-friendly technologies which the financial capacity of most ILCs cannot meet. In addition, the absence of local certification and inspection capacity has become a major constraint in the development of these mechanisms.²⁹³ In those cases

²⁸⁹ Source Watching, “Greenwashing” online: <<http://www.sourcewatch.org/index.php?title=Greenwashing>>.

²⁹⁰ *Supra* note 278.

²⁹¹ *Ibid.*

²⁹² See Jessica Jones, et al, “National Report for Namibia: Rapid Trade and Environment Assessment (RTEA)” (Winnipeg: International Institute for Sustainable Development, 2009) at 42.

²⁹³ See Graham Young, “Fair Trade’s Influential Past and the Challenges of its Future” (Report Prepared for the Conference “Fair Trade, An Asset for Development: An International Dialogue” 28 May 2003, the King Baudouin Foundation, Brussels) online:

where the fair trade initiative is conducted through ATOs (instead of certification organizations), producer groups depend heavily on very few outlets to get their products to consumers.²⁹⁴ Fair trade and green labelling schemes have, therefore, created dependency and vulnerability in spite of their promise to create market independence and empowerment for ILCs.

Thirdly, even though differentiation schemes have proved to be successful instruments for improving market access to agricultural products in the international market, the actual benefits to small-scale producers of traditional agriculture are mostly minimal. A fair trade scheme is intended to “shorten supply chains,” bringing traditional agricultural producers into closer contact with consumers, and cutting out middle men who, otherwise, would take their own cut of profits from a supply chain.²⁹⁵ A World Bank study on “fair trade coffee” reveals, however, that “the costs and margins for coffee sold through fair trade are high and, that intermediaries, not farmers, receive the larger share of the price premium.”²⁹⁶ A study on the effect of “fair trade banana” in the Dominican Republic also found that despite higher prices for the product in international markets, “premiums were being paid largely without the participation of the ‘certified’ farmers.”²⁹⁷ The aforementioned effects of the fair trade schemes are, in large part, attributable to the

< <http://www.traditionsfairtrade.com/class/documents/Youngbackgrounder-Eng.pdf>>.

²⁹⁴ See *ibid.*

²⁹⁵ David Burch, *Supermarkets and Agri-Food Supply Chains: Transformations in the Production and Consumption of Foods* (Cheltenham: Edward Elgar Publishing, 2007) at 313.

²⁹⁶ See World Bank, *World Development Report: Agriculture for Development* (Washington DC: The International Bank for Reconstruction and Development /The World Bank, 2007) at 133.

²⁹⁷ Christy Getz & Aimee Shreck, “What Organic and Fair Trade Labels Do Not Tell Us: Towards a Place-Based Understanding of Certification (2006) 30 *International Journal of Consumer Studies* 490 at 497.

absence of harmonised standards for certification, as well as the non-existence of a legal framework to control and regulate the use of genuine certification labels.

Finally, and most important, the differentiation techniques seem to focus entirely on fulfilling economic ends for farmers in traditional agriculture. Although many scholars argued for the use of differentiation schemes to exploit the commercial potential of TKBAPs for producers, few have questioned the extent to which certification and related schemes “affect nonmaterial ends for farmers in ... ‘value chains’.”²⁹⁸ The adverse effects on “nonmaterial” ends of market-driven differentiation strategies, identified as “the political and social effects ...at the point of production,” may sometimes outweigh the benefits from improved prices in the international market.²⁹⁹ In this regard, Mutersbaugh identifies a problem prevalent in most certification systems: That the “formalization and standardization of certification practices” do not accommodate “varied and complex ecological, economic, and socio-cultural contexts.”³⁰⁰ Concerns about “smallholder cultural and economic independence” grow as requirements for certification by international certification organizations continue to focus on a homogenous set of certification practices that sometimes deviate from local realities.³⁰¹ These circumstances necessitate qualifications to the promise of the fair trade and green labelling schemes, that

²⁹⁸ *Ibid.*

²⁹⁹ See also Robert A. Rice, “Noble Goals and Challenging Terrain: Organic and Fair Trade Coffee Movements in the Global Marketplace” (2001) 14 *Journal of Agricultural and Environmental Ethics* 39.

³⁰⁰ *Supra* note 297 at 492.

³⁰¹ Tad Mutersbaugh, “The Number Is the Beast: A Political Economy of Organic-Coffee Certification and Producer Unionism” (2002) 34 *Environment & planning A*. 1165 at 1181, 1171.

producers may “trade on their own terms,” and that these systems empower small-scale farmers to “achieve control over their own economic lives and communities.”³⁰²

In sum, the opportunity that fair trade and green labelling schemes bring, namely facilitating economic benefits for traditional communities, is undeniable. The gaps that they leave in allowing corporate strategies that counter the advantages they promise, and the constraints evident in their implementation, necessitate that better instruments must be deployed to pursue the socio-economic goals they are meant to serve.

In the context of this thesis, it must be pointed out that the applicability of GIs as instruments to protect TKBAPs must be measured by how well they respond to the foregoing drawbacks associated with differentiation schemes. The outcome of this inquiry would contribute to understanding the instrumentality of GIs in meeting the needs and expectations of ILCs in the agricultural sector.³⁰³

3.8 Conclusion

This Chapter focused on understanding the need for protection for TK and TKBAPs in terms of identifying and explaining the conditions that justify such demands within IP law and policy. The ultimate objective was to enquire whether GIs could be a means of protecting TKBAPs in a manner that addresses the objectives and priorities generated by their socio-economic and cultural importance to ILCs.

³⁰² *Supra* note 297.

³⁰³ See Chapter 5 Section 5.9, below, for discussion of geographical indications as strategies of differentiation.

From the discussions, it is tenable that there is a growing interest in, and a need to protect TK, not only in the utilitarian sense of preserving its ecological and commercial benefits, but also in the sense of addressing the concerns, needs and expectations of the communities that have developed, maintained and practised it. Changing circumstances in the contemporary global economy, fuelled by the uptake of biotechnological techniques and advances, and the globalization of IPRs through institutional enforcement of the rights, have drawn attention to the enormous significance that TK systems have for commercial innovation and competition. In this setting, TK systems face diverse and far-reaching challenges, the resolution of which involves application of insights gained from multiple areas of law and policy.

The need to devise a protective legal regime for TK has become apparent amid efforts to satisfy the global need to preserve biodiversity, and to protect diverse socio-economic, cultural, and scientific interests. Calls for an effective and appropriate protection for TK and TKBAPs arise in different contexts due to a realisation of the significance of TK in diverse areas, and the impacts of global economic pressures on ILCs. Although measures to involve traditional farming communities in market competition through differentiation strategies address economic concerns, agriculture "...is as much a cultural activity as an economic one."³⁰⁴ Thus, it should be acknowledged that the primary purpose to protect TKBAPs is to improve the socio-economic status and cultural self-determination of ILCs. As such, the needs and expectations of ILCs regarding the protection of TK and TKBAPs go beyond economic equity to include bio-cultural protection and preservation.

³⁰⁴ Vandana Shiva, "War against Nature and the People of the South" in Marina Della Giusta et al, *Critical Perspectives on Globalization* (Cheltenham: Edward Elgar Publishing, 2006) at xx.

Measures to protect TK should match the extent and scope of challenges that ILCs face in all areas of TK protection that the global IPRs regime fails to accommodate. The negative effects of global economic pressures, such as the loss of cultural and genetic diversity, reduction in the prices of TKBAPs, and threats to food security, could not be solely attributed to the expanding reach of the global IPRs regime. Some of the factors that negatively affect ILCs in the contemporary global order go beyond even the most expansive view of IPRs. However, this Chapter indicates that connections between IPRs and the adverse socio-economic and ecologically diverse conditions can be seen as IPRs-supported agro-biotechnological advancements shift agricultural production into the hands of individuals and corporations. For this reason, and in recognition of the need to control and guide the continued and growing influence of IPRs in the global economy, international efforts are underway to find a protection system for TK across broad areas of IP-related legal and policy frameworks.

The next Chapter analyses existing and proposed legal mechanisms for protecting TK and TKBAPs in the face of the competing legal and policy frameworks of IP currently applicable at the international level. In support of the case for a diversified system of protection for TK, the Chapter outlines some initiatives to protect TK in different settings. It emphasizes various modalities for legal protection of TK and TKBAPs, and identifies international forums that address the regulation of GIs as a modality to achieve this objective.

CHAPTER 4 TRADITIONAL KNOWLEDGE IN INTERNATIONAL LEGAL REGIMES

4.1 Introduction

The discussion in the previous Chapters shows the need for protecting TK and TKBAPs. In the light of the tremendous role TK systems and practices play in the contemporary global economic system, their protection is critically important not only for ILCs, but also for a large segment of the world's population. The protection of TK is necessary to preserve the value and importance of TK, and to prevent multifaceted challenges to TK systems and practices. Regarding the specific focus of this thesis, namely, the use of TK in agricultural practices, the discussion in the previous Chapter shows that ILCs face multiple challenges in the production and marketing of their TKBAPs. In this respect, the second part of the thesis will explore the role of GIs as tools to protect TKBAPs. Before this specific issue is addressed, this Chapter identifies the legal framework in which various proposals for the protection of TK and GIs are negotiated.

Given the global nature of the challenges to TK systems, current efforts to protect TK and TKBAPs mostly aim at achieving an international level of protection. This Chapter explores initiatives to protect TK and TKBAPs in international IP law and policy-making forums. The discussion identifies distinct modalities for TK protection. Analyzing the various contexts in which international efforts and initiatives to protect TK emerge, this Chapter primarily aims to illustrate that the search for a system of TK protection transcends a single model.

The primary proposition in this thesis is that GIs could act as an option to protect TKBAPs. In defence of this, the Chapter argues that the various needs and expectations of ILCs can be fulfilled through recognition of IP-based strategies that are best suited to their practices and values. As demonstrated later in the thesis, GIs seem to fit within that expectation.

The Chapter contains eight Sections. Section 4.2 provides an overview of norms in international law for regulating the use and allocation of rights to biological resources and TK. Sections 4.3 and 4.4 examine existing protection for TK in major forums of IP law and policy. First, Section 4.3 surveys initiatives for a better protection of TK in forums whose mandates have direct relevance to the regulation of the use, preservation, and protection of TK, namely, the WTO, WIPO, the CBD and the FAO. Second, Section 4.4 briefly reviews efforts to protect TK in forums devoted to other areas of primary interest, such as climate change, development and human rights. Section 4.5 looks into protective initiatives and approaches in the specific context of TKBAPs. Although the protection of TKBAPs is implicated in efforts to protect TK in general, this Section identifies initiatives specifically aimed at protecting TKBAPs.

The choice of instruments of protection for TK and TKBAPs depends on the relative effectiveness of each instrument in responding to the problems identified in the previous Chapter. For this reason, Section 4.6 identifies various modalities for the protection of TK and TKBAPs, and explores the scope and nature of protection each modality offers. Building on critical insights regarding the different means to protect TK, Section 4.7 explains the circumstances that underlie the need for positive protection of TK through IP-based modalities. Section 4.8 identifies GIs as instruments for protecting TKBAPs in

the IP model. To justify GIs as a preferred option to protect TKBAPs, this Section highlights the increasing attention that various groups and institutions have given to GIs in recent times.

4.2 Legal Norms in Traditional Knowledge and Biodiversity

Initiatives to protect TK are not recent. Rather, demands to protect TK have increased in accordance with trends in the global economy.¹ In regard to the contemporary international legal effort to protect TK, four major legal norms have evolved to regulate the utilization of TK and TKBAPs. These are the commons system, the common heritage of mankind, the principle of state sovereignty, and the public domain approach.

For many years, biological resources and TK of their uses were regarded as part of the “commons,” that is, resources that are freely accessible for the benefit of humankind.² Consequently, TK and TK-based resources were treated in the same way as the outer space, the air, and resources in the deep ocean seabed, all of which international law collectively recognizes as “global commons.”³

¹ See Elenita C. Dano, “Biodiversity, Biopiracy and Ecological Debt” (2003) 1 Jubilee South Journal 7-11; Biplab Dasgupta, “Intellectual Property Rights: For Safeguards against Bio-Piracy” India's National Magazine 16:21 (09-22 October 1999).

² See Charles McManis, “Open Source and Proprietary Models of Innovation: Beyond Ideology” (2009) 30 Wash U J L & Pol’y 405 [Mcmanis, “Open Source”]; Krishna Ravi Srinivas, “Traditional Knowledge and Intellectual Property Rights: A Note on Issues, Some Solutions and Some Suggestions” (2008) 3:1 Asian Journal of WTO & International Health Law and Policy at 90.

³ Behring Moore, *Sea Fur Seals Arbitration*, 1 Intl Arbitral Awards 755 (1898), cited in P.W. Birnie & A.E. Boyle, *International Law and the Environment*, 2d ed., (Oxford: Oxford U Press, 2002) at 141. See for example, the regulation of these resources in the *United Nations Convention on the Law of the Sea*, 10 December 1982, 1833 U.N.T.S. 3; 21 I.L.M. 1261, entered into force on 16 Nov. 1994 [hereinafter UNCLOS], pt. XI (Dec. 10, 1982); *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies* 27 Jan. 1967 610

The commons approach considers biological resources and their underlying TK as resources to which source communities or states cannot lay prior claims or proprietary interests.⁴ The “open access regime” regulates the utilization of these resources on the ground that “the cost of maintaining exclusive rights” over resources in the “global commons” outweighs the benefits of protecting the rights.⁵ As a result, biological resources and their underlying TK are considered open for the “legitimate and reasonable use” of individuals or groups in all states.⁶ The application of the commons approach in the realm of biological resources allowed the appropriation of biological resources and the underlying TK from biodiversity-rich countries and communities through such practices as “the establishment of botanical gardens and the process of collecting samples” in other countries.⁷

UNTS 205 entered into force on 10 Oct 1967); *Antarctic Treaty* (1 Dec 1959) 402 UNTS 71 entered into force on 23 June 1961.

⁴ See discussion of the “common concept” in Chika B. Onwuekwe, “The Commons Concept and Intellectual Property Rights Regime: Whither Plant Genetic Resources and Traditional Knowledge?” (2004) 2 *Pierce Law Review* 65 at 70 -73.

⁵ See *ibid.* at 75 ; Narciso R. Deomampo, “Access to Resources for rural and Aquaculture Development” in Matthias Halwart & Dilip Kumar, eds, *Papers Presented at the FAO/NACA Consultation on Aquaculture For Sustainable* (Rome: Food & Agriculture Org., 2005) at 229.

⁶ See UNCLOS, *supra* note 3 at Part XI; Sharelle Hart, *Elements of a Possible Implementation Agreement to UNCLOS for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction* IUCN Environmental Policy and Law Papers online – Marine Series No. 4_(Glan: IUC, 2008) at 5; see also, Jaap Hardon, “National Sovereignty and Access to Genetic Resources” (1996) 27 *Biotechnology and Development Monitor* 24; also see Peter P. C. Haanappel, *The Law and Policy of Air Space and Outer Space: A Comparative Approach* (Frederick: Kluwer Law International, 2003).

⁷ See Srinivas, *supra* note 2 at 90. For discussion about the scale and modes of appropriation of biological resources in earlier times, see L. H. Brockway, *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens* (New York: Academic Press, 1979) at 215; also, see the use and transfer of biological resources from a historical perspective in Cary Fowler & Pat Mooney, *Shattering: Food, Politics, and the Loss of Genetic Diversity* (Tucson: University of Arizona Press, 1990); also see Jack R. Kloppenburg, ed, *Seeds and Sovereignty: Debate over the Use and Control of Plant Genetic Resources* (Durham: Duke University Press, 1987).

The concept of “public regime,” or “the public domain” approach, relates to the “commons” in terms of non-excludability, that is, absence of exclusive rights in “public domain” and “commons.”⁸ For the sake of terminological precision, the two concepts can be distinguished on the basis that the “public domain” refers to resources to which rights of access are shared among all people, whereas the “commons” often refers to resources that are shared among a defined group – as in labels such as “global commons,” and “limited commons property.”⁹ The public domain approach, like the commons, has been used to promote the free use of TK and biodiversity for everyone’s benefit.¹⁰ In the post-TRIPs era, however, it is often invoked, in part, as a defensive strategy against the encroachment of property rights to biodiversity and the underlying TK.¹¹

The principle of sovereignty over natural resources emerged from the desire of developing countries for the recognition of their sovereignty over the resources within their territories.¹² In its declaration of 1962, the UN General Assembly recognized the

⁸ See generally, James Boyle, *The Public Domain: Enclosing the Commons of the Mind* (New Haven: CSPD, 2008).

⁹ See Anupam Chander & Madhavi Sunder, “The Romance of the Public Domain” (2004) 92 *California Law Review* 1331.

¹⁰ See Mcmanis, “Biodiversity and the Law”, note 2, Chapter 2; Thomas Moritz, “Building the Biodiversity Commons” (2002) 8 *D-Lib Magazine* online: <http://www.dlib.org/dlib/june02/moritz/06_moritz.html>; Paul Gepts, “Who Owns Biodiversity, and How Should the Owners Be Compensated?” (2004) 134 *Plant Physiology* 1295-1307.

¹¹ See Section 3.6.3, below, for discussion of the public domain approach to TK as a defensive protection strategy. See also WIPO, “Diverse”, note 82, Chapter 1 at 1-2. *Contra* Stephen R. Munzer & Kal Raustiala, “The Uneasy Case for Intellectual Property Rights in Traditional Knowledge” (2007) 27 *Cardozo Arts & Ent L J* 38.

¹² See Alejandro Grajal, “Biodiversity and the Nation State: Regulating Access to Genetic Resources Limits Biodiversity Research in Developing Countries” (1999) 13 *Conservation Biology* 6-10.

“right of peoples and nations to permanent sovereignty over their natural wealth and resources,” which it considers “a basic constituent of the right to self-determination.”¹³

As originally enunciated in the Stockholm Declaration, and later affirmed in the Rio Declaration, the principle of sovereignty over natural resources requires that all states exploit their natural resources “pursuant to their own environmental and developmental policies.”¹⁴ The principle of sovereignty was initially espoused in terms of States’ rights, and it received universal acceptance as an attribute of state independence.¹⁵ Later, the principle has been linked to human rights, self-determination, and recognition of the relationship between indigenous peoples’ “cultural and intellectual property” rights to their territories and resources.¹⁶ As will be indicated below, most developing countries

¹³ *Declaration of Permanent Sovereignty over Natural Resources*, G.A. Res. 1803 (XVII), U.N. GAOR Supp. No.17, U.N. Doc. A/5217 (1962), para. 15. See discussion of the historical and conceptual development of the principle of state sovereignty over natural resources in Nico Schrijver, *Sovereignty over Natural Resources: Balancing Rights and Duties* (Cambridge: Cambridge University Press, 1997).

¹⁴ Rio Declaration, note 456, Chapter 2, Principle 2.

¹⁵ The principle of national sovereignty acquired international acceptance in international environmental law as an attribute of states’ rights. See CBD, note 1, Chapter 2, Art. 3 (“States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies”); Perhaps, the principle is not absolute. Different international environmental standards require states to exploit natural resources within their territories in a responsible manner. See P.W. Birnie & A.E. Boyle, *International Law and the Environment*, 2d ed., (Oxford: Oxford University Press, 2002) at 139; see also A. Dan Tarlock, “Exclusive Sovereignty versus Sustainable Development of a Shared Resource: The Dilemma of Latin American Rainforest Management” (1997) 32 *Tex Int’l L J* 37; Francesco Mauro & Preston D. Hardison, “Traditional Knowledge of Indigenous and Local Communities: International Debate and Policy Initiatives” (2000) 10 *Ecological Applications* 1263-1269.

¹⁶ Regarding property rights derived from the principle of national sovereignty over natural resources, there seems to be incompatibility between the rights of governments of States that have indigenous people, and that of indigenous peoples in their territories. The principle of national sovereignty over natural resources became part of customary law as a right of “nations.” But, numerous international instruments recognize the sovereignty of peoples over their resources. Among others, the UN Declaration of Permanent Sovereignty over Natural Resources, the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights, affirm the rights of peoples to freely utilize their natural resources. See *International Covenant on Civil and Political Rights*, 19 December 1966, 999 U.N.T.S. 171 Can TS 1976 No. 47, 6 I.L.M. 368, entered into force 23 March 1976 [Hereinafter, ICCPR] Art. 1 (2);

and ILCs assert sovereignty over their TK and TK-based resources in their desire to prevent individuals and corporations from gaining control over these resources through IPRs.¹⁷

In the early stages of the recognition of sovereignty over natural resources, the concept of “common heritage of mankind” (CHM) emerged, initially, in relation to the exploitation and the use of resources of the seabed and of geographically remote areas.¹⁸

The CHM principle espouses that the exploitation of these resources should not be on

International Covenant on Economic, Social and Cultural Rights, 16 December 1966, 993 UNTS 3, Can TS 1976 No. 46, entered into force 3 January 1976, Art. 1 (2) [Hereinafter, ICESCR].

If the term “peoples” in those instruments is interpreted to include “indigenous people,” both national governments and indigenous peoples have sovereignty over the resources. This potentially creates tension between indigenous peoples and States. Some have attempted to resolve the conflict by distinguishing between physical property and intangible property in reference to biological resources and TK, respectively. Thus, national sovereignty is construed as “sovereignty over tangible natural resources,” which sets a different set of legal rights from those implied by the recognition of indigenous peoples’ rights over their TK. See Anthony J. Stenson & Tim S. Gray, *The Politics of Genetic Resource Control* (London: Macmillan Press Ltd. 1999) at 131. Also see Carlos M. Correa, *Sovereign and Property Rights over Plant Genetic Resources*, FAO Background Study Paper No. 2 Commission on Plant Genetic Resources (1994). In regard to biodiversity, this thesis does not support a distinction between tangible and intangible elements (see Chapter 2 Section 2.3, above). As such, it does not endorse the resolution of the conflict between “national sovereignty” and the sovereignty of indigenous peoples in regard to biodiversity and its underlying TK based on a superficial distinction between the material and the intangible elements.

The frame of analysis in this thesis is conducted across the “global economy”, and as such, rights and duties are discussed in terms of the primary subjects of international law. Although there has been a gradual extension of the circle of subjects, the conventional rule on the primary subjects of international law remains unaltered: “Since the law of nations is based on the common consent of individual states, and not of individual human beings, states solely and exclusively are subjects of international law.” Lassa Oppenheim, *International Law: A Treatise, Volume 1*, 3d ed., (Clark: The Law Book Exchange, 2005) at 17. Therefore, national sovereignty is understood in the thesis in its traditional construction as applied to nation states. The recognition of national sovereignty at the international level, however, does not, and should not bar the recognition of indigenous peoples’ sovereign rights over their resources through national arrangements. In Canada, for example, several established treaties “reconcile pre-existing Aboriginal sovereignty with assumed Crown sovereignty.” See Assembly of First Nations, *A First Nations - Federal Crown Political Accord on the Recognition and Implementation of First Nation Governments* (19 April 2004) online: Assembly of First Nations < <http://www.afn.ca/cmslib/general/PolAcc.pdf>>. As signatories to the international instruments that accord indigenous peoples sovereign rights over their resources, states are obliged to recognize and implement the rights of ILCs over resources found in their territories.

¹⁷ See Section 3.3.4, below.

¹⁸ See Kemal Baslar, *The Concept of the Common Heritage of Mankind in International Law* (Dordrecht: Martinus Nijhoff Publishers, 1998) at 31-32.

first-come-first-serve basis.¹⁹ The CHM approach holds that both the technologically advanced countries and those less advanced should “share the rewards [from biological resources and TK], even if unable to participate in the actual process of extraction.”²⁰

The notion of CHM entails a conception of “international collective ownership,” as distinct from the conception of *res nullius* (belonging to no one but capable of being reduced to possession by capture) in the commons.²¹ Unlike the “common property” concept, which allows no restrictions in the exploitation of resources irrespective of differences in the capacity of entitled parties, the CHM acknowledges inequalities in the capacity to exploit among the “common” owners, and thus, endorses the principle of benefit sharing between parties that have different levels of ability to exploit the resources.²² The CHM also incorporates the principle of sustainability, as common heritage resources are available to both the living and those yet unborn.²³ Beyond fairness and equity in the exploitation of resources, the significance of CHM as a policy model to regulate biological resources remains controversial due to disagreements as to its effect

¹⁹ *Supra* note 16 at 143; UNCLOS, *supra* note 3, Art. 136. Also see Stenson & Gray, *supra* note 17 at 137. To read more about the CHM concept, see Baslar, *ibid.*; Christopher C. Joyner, “Legal Implications of the Concept of the Common Heritage of Mankind” (1986) 35 *The International and Comparative Law Quarterly* 190-199.

²⁰ Birnie & Boyle, *supra* note 15 at 128–130 and 197; also see Elisa Morgera & Elsa Tsioumani “The Evolution of Benefit Sharing: Linking Biodiversity and Community Livelihoods” (2010) 19 *Review of European Community & International Environmental Law* 150-173 at nn. 12.

²¹ See Antony Taubman, “The Public Domain and International Intellectual Property Law Treaties” ANU College of Law Research Paper No. 07-17 (2007) at 5.

²² See Section 3.3.3 and Section 3.6.1, below, for discussion of access and benefit sharing arrangements in the exploitation of traditional knowledge and biological resources.

²³ See Jan van Ettinger, Alexander King & Peter Payoyo “Ocean Governance and the Global Picture” in Peter Bautista Payoyo, *Ocean Governance: Sustainable Development of the Seas* (New York: The United Nations University, 1994). For discussion of the principle of sustainability, see Klaus Bosselmann, *The Principle of Sustainability: Transforming Law and Governance* (Hampshire: Ashgate, 2008).

on the protection of biodiversity, i.e., whether it is a conservationist or exploitation-oriented concept.²⁴

As the discussion in Section 4.3 of this Chapter below indicates, the exact interpretation and application of the CHM concept has been the subject of long-standing debates in the regulation of biodiversity and the control of genetic resources for food and agriculture in the FAO context.²⁵ Although the CHM has wide acceptance for regulating the legal status of resources, such as those of the ocean floor, outer space, the moon, and Antarctica,²⁶ the application of the concept to regulate biodiversity and TK has encountered stiff opposition from developing countries and ILCs in recent times.²⁷ Biodiversity-rich communities are concerned that the application of CHM may facilitate the appropriation and privatization of biodiversity by anyone who may consider these resources to be *res communis*.²⁸

²⁴ For example, Guruswamy argues that:

[T]he CHM involves inclusive enjoyment and sharing of the products of the common heritage, and its thrust remains redistribution not conservation....CHM is not a conservationist principle because it is directed to maximising resource exploitation and economic returns. Moreover, it is so suffused in traditional non conservationist resources economics as to render it constitutionally incapable of nurturing a regime of sustainable development.

L. Guruswamy, "International Environmental Law: Boundaries, Landmarks and Realities" (1995) *Natural Resources and the Environment* 43 at 48.

²⁵ See Section 4.3.4, below.

²⁶ See the major international treaties that incorporate the common heritage concept: UNCLOS, *supra* note 3; *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies* (Jan. 27, 1967), 610 U.N.T.S. 205; *The Antarctic Treaty*,²³ June 1961, 40 U.N.T.S. 71; *Agreement Governing the Activities of States on the Moon and the Other Celestial Bodies*, 11 July 1984, UN GAOR, 34th Session, Supplement No. 20, UN Document A/34/20 1979.

²⁷ Mgbeoji, "Global Biopiracy," note 22, Chapter 1, at 50 ff (also arguing that the categorization of TK in the use of plants under Common Heritage of Mankind (CHM) is misguided, exclusionary, and inapplicable to plant germplasm).

²⁸ Representatives of developing countries argued opposing CHM, that "if common heritage guarantees access to genetic diversity located in the South, it should also guarantee access to that found in the North

In terms of the thrust issue of this thesis, it is possible to hypothesize that the different ways in which international regimes incorporate the norms discussed in this Section, results in different responses to the need to protect TK in international law. The question as to which model of TK protection addresses the problems identified in the previous Chapters, and the primary question as to whether GIs may serve such a purpose, could be answered through the examination of the different initiatives put forth in international law and policy to protect TK.

Initiatives to protect TK exist in international regimes that, in the words of WIPO, address “matters as diverse as food and agriculture, the environment (notably the conservation of biological diversity), health, including traditional medicines, human rights and indigenous issues and aspects of trade and economic development.”²⁹ The mode and scope of protection for TK in these forums vary according to the respective areas of work. The following Section explores measures to protect TK in the various regimes of international law.

including patented varieties and breeding lines. If common heritage applies only to southern diversity, then perhaps the concept should be replaced by another time-honoured concept, ‘national sovereignty’.” See Cary Fowler, “Biodiversity in A North South Context” in Helge Ole Bergesen & George Parmann, eds, *Green Globe Yearbook* (Oxford: Oxford University Press, 1993) at 39.

²⁹ WIPO, *Traditional Knowledge*, online: WIPO <<http://www.wipo.int/tk/en/tk/>>. In consideration of the “holistic” nature of TK, and cognizant of the distinct features that persist across different regimes of protection, it is sometimes suggested that the protection of TK be undertaken through “close cooperation” and in coordination with “international agencies and processes.” As such, the WTO, WIPO, FAO sometimes coordinate and integrate their work in the spheres of mutual concern. See WIPO, *Traditional Knowledge, Traditional Cultural Expressions and Genetic Resources: The International Dimension* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Sixth Session Geneva, March 15 to 19, 2004) WIPO/GRTKF/IC/6/6; WIPO, *Genetic Resources: List of Options* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Eleventh Session, Geneva, July 3 to 12, 2007) WIPO/GRTKF/IC/11/8 (a); also, see, generally, Sarah Mohan, ed, “Intellectual Property: Disclosure Talks Try to Clarify CBD-TRIPS Relationship” (2006) 6 Bridges Trade BioRes 7.

4.3 Traditional Knowledge in International Legal Frameworks

The need to protect TK is mostly pronounced in the principal trade regime of international law symbolized by the WTO. As Overwalle points out, the problems of biopiracy and of misappropriation of TK in genetic resources were not central issues prior to the introduction of the TRIPS Agreement in the WTO.³⁰ The linkage of IP rules with international trade under the TRIPS Agreement shaped the evolution of international regimes that govern biological resources and their underlying TK. For this reason, the following subsection considers the protection of TK in the context of IP rules under the purview of the international trade regime.

4.3.1 THE INTERNATIONAL TRADE REGIME

The WTO oversees the regulation of trade relations among states. It administers various agreements that are, in essence, “self-enforcing” trade agreements.³¹ When the *General Agreement on Trade and Tariffs* (GATT) – the predecessor to the WTO – was concluded in 1948, IP issues were not linked to multilateral trade rules for international trade.³²

³⁰ See generally Gertrui van Overwalle, “Protecting and Sharing Biodiversity and Traditional Knowledge: Holder and User Tools” (2005) 53 *Ecological Econ* 585; see also Christopher May, *The Global Political Economy of Intellectual Property Rights: The New Enclosures* (London: Routledge, 2000).

³¹ The “self-enforcing” aspect of WTO’s trade agreements refers to the inbuilt dispute settlement mechanism of the WTO which disposes disputes that arise from claims of violation of the agreements, under a threat of unilateral trade sanctions. This feature distinguishes international agreements that other organizations, such as WIPO, administer through multilateral process reporting, inspection and consultation. See Chad P. Bown, *Self-Enforcing Trade: Developing Countries and WTO Dispute Settlement* (Washington, DC: Brookings Institution Press, 2009); *Understanding on the Rules and Procedures Governing the Settlement of Disputes* (1994) 1869 U.N.T.S. 401; 33 I.L.M. 1226 Annex 4.

³² See the formative aspects of the GATT in John H. Barton, *The Evolution of the Trade Regime: Politics, Law, and Economics of the GATT* (Princeton: Princeton University Press, 2006).

Before the WTO, numerous international treaties existed to regulate the international protection of IP.³³ These treaties mostly operate on reciprocity, that is, IP rights registered in a country that is contracting party to a treaty are protected in another country that is also a contracting party to that treaty.³⁴ Although some of these treaties deal with aspects of international trade, such as unfair competition, all of them existed in a distinct domain from the multilateral rules for international trade.³⁵ WIPO has administered most of the international treaties on IP since its establishment in 1967.

WIPO adopts a “comity approach” in enforcing the treaties under its purview.³⁶ Thus, the enforcement of foreign-registered IPRs in specific national jurisdictions depends on the willingness of countries to offer an equal level of protection to those IPRs registered in their territories. The WIPO treaties simply require that their signatories “follow

³³ For general discussion of the history of IP in international law, see Peter Drahos, *The Universality of Intellectual Property Rights: Origins and Development in Intellectual Property and Human Rights*, WIPO Panel Discussion on Intellectual Property and Human Rights, Geneva, 9 November 1998, online: WIPO <<http://www.wipo.int/tk/en/hr/paneldiscussion/papers/pdf/drahos.pdf> >; D’Amato, Anthony A. & Doris E. Long, *International Intellectual Property Law* (The Hague: Kluwer Law International, 1997); see also Chapter 5 Section 5.3, below, for discussion of international treaties that regulate the protection of GIs.

³⁴ The 1883 Paris Convention for the Protection of Industrial Property is the first of these instruments. See Paris Convention, note 204, Chapter 2.

³⁵ For example, the Paris Convention incorporates a provision that deals with unfair competition. Paris Convention, note 204, Chapter 2, Art. 10*bis*.; see also Carlos A. Primo Braga, “Trade-Related Intellectual Property Issues: the Uruguay Round Agreement and its Economic Implications” in Keith E. Maskus, ed, *The WTO, Intellectual Property Rights And the Knowledge Economy* (Cheltenham: Edward Elgar Publishing, 2004) at 3.

³⁶ A regulatory approach to the enforcement of international obligations, the “comity approach” refers to a mechanism by which the enforcement of obligations between contracting parties to a treaty rests on reciprocity of respect for national legal orders that are constitutionally legitimized, rather to a multilateral judicial body such as the WTO’s Dispute Settlement Body. See Robert Wai, “Conflicts and Comity in Transnational Governance: Private International Law as Mechanism and Metaphor for Transnational Social Regulation through Plural Legal Regimes” in Christiane Joerges & Ernst-Ulrich Petersmann, eds, *Transnational Trade Governance and Social Regulation: Tensions and Interdependencies* (Oxford: Hart, 2006); Yi-Chong Xu & Patrick Moray Weller, *The Governance of World Trade: International Civil Servants and the GATT/WTO* (Cheltenham: Edward Elgar, 2004) at 173.

national treatment” standards for IPRs registered in other members’ jurisdictions based on reciprocity; they do not set minimum standards of enforcement either for levels of protection or for the coverage of subject matter in the national jurisdiction of contracting parties.³⁷

The lack of an inbuilt system of enforcement in the WIPO and the need for a degree of harmonisation of IP standards prompted some members of the WIPO to seek inclusion of IPRs in trade negotiations.³⁸ Industry representatives from some of the largest corporations in the US saw WIPO’s “comity approach” as a major weakness, and therefore, argued that “stronger property rights were needed to protect American ideas and industry.”³⁹ In a phenomenon commentators referred to as “forum-shifting,” company

³⁷ The “national treatment” standard to the protection of IP, as incorporated in the international treaties recognized by WIPO, provides for equal treatment between IPRs registered in other countries and a domestic jurisdiction. See Paris Convention, note 204, Chapter 2, Art. 2 (which provides for “National Treatment for Nationals of Countries of the Union”); *Berne Convention for the Protection of Literary and Artistic Work* (as amended on September 28, 1979) WIPO Database of Intellectual Property Legislative Texts, Art. 2 (stating that the determination of the protection to be granted to literary and artistic works “shall be a matter for legislation in the countries of the Union”); *Patent Cooperation Treaty*, 24 January 1978 28 UST 7645; TIAS 8733 1160 UNTS231, Art 27 (5) (stating, “Nothing in this Treaty and the Regulations is intended to be construed as prescribing anything that would limit the freedom of each Contracting State to prescribe such substantive conditions of patentability as it desires.”) Also, see generally discussion in *supra* note 36 at 4.

³⁸ Although WIPO lacks inbuilt system of dispute settlement, WIPO’s agreement with the UN in 1974 allows WIPO to refer disputes to the International Court of Justice. In this sense, the International Court of Justice can be considered a dispute settlement body for treaties that WIPO administers. *Agreement between the United Nations and the World Intellectual Property Organization*, Entered into Effect on December 17, 1974, Art. 12 online: WIPO <<http://www.wipo.int/treaties/en/agreement/index.html>>; See Peter Drahos, *The Universality of Intellectual Property Rights: Origins and Development in Intellectual Property and Human Rights*, WIPO Panel Discussion on Intellectual Property and Human Rights, Geneva, 9 November 1998, online: WIPO <<http://www.wipo.int/tk/en/hr/paneldiscussion/papers/pdf/drahos.pdf>>; also see J. Braithwaite & Peter Drahos, *Global Business Regulation* (Cambridge: Cambridge University, 2000).

³⁹ See Peter Drahos & John Braithwaite, *Information Feudalism: Who Owns the Knowledge Economy?* (London: Earthscan, 2002) at 64 [“Information Feudalism”]. As Dutfield notes, these companies called for the strict enforcement of “their interpretation of fair competition in high-technology ... by means of the global standardization of national IP regulation as far as possible equivalent to the standards existing in the US.” See Graham Dutfield, *Intellectual Property Rights and the Life Science Industries: A Twentieth Century History* (Burlington: Ashgate Publishing, 2003) at 198.

representatives planned to entrench IP standards in the world's major international trade regime – and away from the realm of WIPO.⁴⁰

In preparations for the Uruguay Round of negotiations, a group of lobbyists, IP lawyers, and consultants persuaded the US Trade Representative (USTR) to advance a discursive linkage of IP with trade at the international level.⁴¹ The USTR introduced the concept of “trade-related” IP in the negotiations, and eventually, pressured developing

⁴⁰ According to Peter Drahos, the phenomenon of “forum-shifting” explains the globalization of intellectual property rights. He notes that “the US shifted its agenda on strong enforceable intellectual property rights from the World Intellectual Property Organization to the GATT during the 1980s” – a move which he said, led to TRIPS. He says “forum shifting means that some negotiations are never really over.” It is “about cycling through fora to find one at a moment in time where its power is optimized and the advantages of negotiation for the weak are minimized.” See Peter Drahos, “Four Lessons for Developing Countries from the Trade Negotiations Over Access to Medicines” (2007) 28 *Liverpool Law Review* 11 at 33; also see Braithwaite & Drahos, “Information Feudalism,” *ibid*; Susan K. Sell, *Private Power, Public Law: The Globalization of Intellectual Property Rights* (Cambridge: Cambridge University, 2003); Peter K. Yu, “International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia” (2007) *Mich St L Rev* 1; Susan K. Sell, “Intellectual Property and Public Policy in Historical Perspective: Contestation and Settlement” (2005) 38 *Loy L A L Rev* 267.

⁴¹ The link between trade and intellectual property formally happened in the United States with the enactment of the Omnibus Foreign Trade and Competitiveness Act of 1988. The Act strengthened Section 301 of the U.S. Trade Act of 1974 by creating provisions which require the U.S. Trade Representative (USTR) to conduct an annual review of foreign countries’ intellectual property policies and practices. See *Omnibus Trade and Competitiveness Act*, Pub.L. No. 100-418, s. 2502, 102 Stat. 1107 (1988).

The Uruguay Round is a trade negotiation lasting from September 1986 to April 1994 that transformed the GATT into the WTO. It was launched in Punta Del Este in Uruguay (hence the name), followed by negotiations in Montreal, Geneva, Brussels, Washington D.C. and Tokyo, with the 20 agreements finally being signed in Marrakesh — the Marrakesh Agreement. It is now well-documented that “three powerful and easily organized industries (pharmaceuticals, recorded entertainment, and entertainment and software) in the US recognized the opportunity afforded by the Uruguay Round to protect their intellectual property in the future and made a core issue for the United States Trade Representative.” See Keith E. Maskus, “Regulatory Standards in the WTO: Comparing Intellectual Property Rights With Competition Policy, Environmental Protection, and Core Labor Standards” in Keith E. Maskus, ed, *The WTO, Intellectual Property Rights and the Knowledge Economy* (Cheltenham: Edward Elgar Publishing, 2004) at 56; See also, Peter Drahos, “IP World – Made by TNC Inc.” in Gaele Krikorian & Amy Kapczynski, eds, *Access to Knowledge in the Age of Intellectual Property* (New York: Zone Books, 2010) 197- 216.

country negotiators into accepting standards of IP protection that are equivalent to standards that exist in the US – despite doubts as to their “trade-relatedness.”⁴²

The Uruguay Round of negotiations resulted, among other agreements, in the TRIPS Agreement, a multilateral agreement that is binding on all member States of the WTO. The TRIPS Agreement establishes a set of minimum standards for IP protection and provides guidelines for enforcement, thereby requiring Members to take “positive action on IPRs.”⁴³ Failure to comply with the requirements may lead to initiation of proceedings in the WTO, which may lead to authorization of trade sanctions and other penalties by the Dispute Settlement Body.⁴⁴

Under the TRIPS Agreement, developing countries are expected to establish legal and institutional frameworks for the enforcement of harmonised standards of IP.⁴⁵ Developing countries incur incremental costs in the course of complying with the TRIPS Agreement through the revision, introduction and administration of legislation that

⁴² See *ibid.*; A. Jane Bradley, “Intellectual Property Rights, Investment and Trade in Services in the Uruguay Round: Laying the Foundations” (1987) 23 *Stan J Int’l L* 57; Arvind Panagariya, “TRIPs and the WTO: an Uneasy Marriage” in Keith E. Maskus, ed, *The WTO, Intellectual Property Rights and the Knowledge Economy* (Cheltenham: Edward Elgar Publishing, 2004) 42-53.

⁴³ *Supra* note 36 at 6.

⁴⁴ The WTO’s Understanding on Dispute Settlement provides for the establishment of dispute settlement panels that are entrusted with the power to dispose disputes brought to them by member states. See *Understanding on the Rules and Procedures Governing the Settlement of Disputes* (1994) 1869 U.N.T.S. 401; 33 I.L.M. 1226 Annex 4 at Art. 23.

⁴⁵ In consideration of this, the WTO has granted least-developed countries an extended deadline (July 2013) for implementing the TRIPS Agreement. The deadline in respect of pharmaceutical patents has been extended to 2016. See WTO, “TRIPs: Which Countries are Using the General Transition Periods?” online: WTO < http://www.wto.org/english/tratop_e/trips_e/tripfq_e.htm > ; Council for Trade-Related Aspects of Intellectual Property Rights, *Extension of the Transition Period Under Article 66.1 for Least-Developed Country Members*, IP/C/40 (Nov.2005), online:<http://www.tripsagreement.net/documents/GATTdocs/Decision_of_the_Council_for_TRIPS_of_29_November_2005_E.doc>.

prescribes criminal sanctions against violations of IPRs in some cases.⁴⁶ The fact that most of these countries are importers of most of the IP-based products has resulted in high outflow of foreign currency – adding pressure on the costs of compliance.⁴⁷

Of particular importance to the question under consideration in this Chapter, the search for modalities of TK protection, is whether the TRIPS Agreement provides a mechanisms for the protection of TK. The TRIPS Agreement requires all members of the WTO to enforce the protection for IPRs.⁴⁸ As the TRIPS Agreement does not specifically exclude TK from the realm of protection, one may construe the Agreement as requiring members to protect TK to the extent that the knowledge fits within the scope of IP protection incorporated in the Agreement.⁴⁹ As indicated in the previous Chapter,

⁴⁶ The TRIPS Agreement prescribes criminal sanctions in cases of wilful trademark counterfeiting or copyright piracy on a commercial scale. See TRIPS Agreement, note 13, Art. 61; see also discussion in Shayerah Ilias, *Intellectual Property Rights and International Trade* (New York: Nova Publishers, 2008) 11-13.

⁴⁷ Martin Khor, *Rethinking Globalization: Critical Issues and Policy Choices* (Dhaka: Zed Books, 2001) at 46-48; Denise Rosemary Nicholson, “Intellectual Property: Benefit or Burden for Africa?” (2006) 32 IFLA Journal at 310.

⁴⁸ Most developing countries are members of the WTO; as such, they are required to comply to the Agreement on Trade-Related Aspects of Intellectual Property Rights. Least Developed Countries who are TRIPS signatories are required to implement the TRIPS rules by 2013. See Council for Trade-Related Aspects of Intellectual Property Rights, *Extension of the Transition Period Under Article 66.1 for Least-Developed Country Members*, IP/C/40 (Nov.2005) online: <http://www.tripsagreement.net/documents/GATTdocs/Decision_of_the_Council_for_TRIPS_of_29_November_2005_E.doc>.

⁴⁹ See Lawrence R. Helfer, “Regime Shifting: The TRIPS Agreement and New Dynamics of International Intellectual Property Lawmaking” (2004) 29 Yale J Int’l L 1 at footnote 120 (noting that “TRIPs does, . . . require WTO members to protect traditional knowledge to the extent that such knowledge fits within the forms of intellectual property protection that the treaty does recognize (such as copyrights and geographical indications).” In discussing “TK as subject matter for Intellectual Property Rights,” Leister argue that “in principle, TK and aspects of TK can be protected through conventional IP law just as any other form of knowledge and concrete expressions of Knowledge may be protected: knowledge does not lose its significance simply because it can also be characterised as traditional.” See Matthias Leistner, “Analysis of Different Areas of Indigenous Resources” in note 21, Chapter 2 at 92. As the TRIPS Agreement incorporates the conventional IPRs, it can, as well, be argued that in principle, the Agreement requires members to provide protection for all forms of knowledge, including TK, if it fits in the protective scope of IPRs.)

however, it has become clear that the forms of IP protection that the Agreement recognizes do not fit well with the protection of TK and, thus, the TRIPS Agreement has mostly facilitated the misappropriation and misuse of TK.⁵⁰

Some commentators have suggested that the “*sui generis*” option under Art. 27.3(b) of the TRIPS Agreement may be used to provide protection for TK-based plant varieties.⁵¹ Even though the Agreement obliges members to provide for “protection of plant varieties” through an “effective *sui generis* system,” it does not expressly mention TK protection under any forms of IPRs it recognizes.⁵² In addition, the TRIPS Agreement does not define the nature and scope of rights that the *sui generis* category of protection confers.⁵³ The flexibility inherent in the practical implementation of the *sui generis* option

⁵⁰ See Chapter 3 Section 3.2.2.2, above. See also Dutfield, Graham, “TRIPS-Related Aspects of Traditional Knowledge” (2001) 33 Case W Res J Int’l L 233 at 238; Daniel F. Robinson, *Confronting Biopiracy: Challenges, Cases and International Debates* (London: Earthscan, 2010) at 30 ff.

⁵¹ Art. 27.3(b) of the TRIPS Agreement provides that “Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof.” TRIPS Agreement, note 13, Chapter 1. Among others, the Crucible Group reported that “[t]he term *sui generis*, ..., may offer a wider range of policy choices because it could presumably include any arrangement for plant varieties that offers recognition to innovators—with or without monetary benefit or monopoly control.” The Crucible Group, *People, Plants and Patents* (Ottawa: International Development Research Center, 1994) at 53; also see Rhys Manley, “Developmental Perspectives on the TRIPS and TK Debate” (2006) 3 Macquarie Journal of International and Comparative Environmental Law 113 at 123; Biswajit Dhar, *Sui Generis Systems for Plant Variety Protection: Options under TRIPS: A Discussion Paper* (Geneva: Quaker United Nations Office, 2002).

⁵² Cottier & Panizzon, note 151, Chapter 1 at 378.

⁵³ If, as claimed by some commentators, the *sui generis* option under the TRIPS Agreement refers to a model of protection for TK, the Agreement would deal with the nature and scope of protection contained as well as put forth the yardsticks as to what constitutes “effectiveness.” The Agreement adopts such approach in other forms of IPRs, such as patents, trademarks, and copyrights. See this line of argument in John Mugabe, *Intellectual Property Protection and Traditional Knowledge: an Exploration in International Policy Discourse*, Discussion Paper online: WIPO

< <http://www.wipo.int/tk/en/hr/paneldiscussion/papers/pdf/mugabe.pdf>> at 16; S. Johnston & F. Yamin, “Intellectual Property Rights and Access to Genetic Resources” in J. Mugabe et. al., eds, *Access to Genetic Resources: Strategies for Sharing Benefits* (Nairobi: African Center for Technology Studies Press, 1997) at 251.

has “created more problems than solutions,” and as such, the TRIPS Agreement has proven ineffective as an instrument for addressing the protection of TK.⁵⁴

With increasing attention to the impacts of the TRIPS Agreement, demands have grown in the WTO for comprehensive reform of the Agreement to accommodate the protection of TK. Demands from India,⁵⁵ Brazil⁵⁶ and African countries,⁵⁷ have resulted in the discussion of protection of TK in the TRIPS Council, and eventually, in the inclusion of the agenda to protect TK in the 2001 Ministerial Declaration (referred to as “Doha Declaration”).⁵⁸ The Doha Declaration which acknowledges the need to accommodate the interests of developing countries that constitute the majority of WTO members, instructed the TRIPS Council to examine “the protection of traditional

⁵⁴ *Ibid.* at 376; Industrialized countries construe the *sui generis* option as an affirmation of the existing protection of PBRs under the UPOV system, instead of flexibility for developing countries in devising appropriate framework to protect TK. See Margaret Llewelyn, “Which Rules in World Trade Law -- Patents or Plant Variety Protection?” in Thomas Cottier & Petros C. Mavroidis, eds, *Intellectual Property: Trade, Competition, and Sustainable Development* (Ann Arbor: University of Michigan Press, 2003) at 303ff.

⁵⁵ See India’s Submission to the WTO Committee on Trade and Environment, *Protection of Biodiversity and Traditional Knowledge the Indian Experience*, 14 July 2000, WT/CTE/W/~/I~P~/C,/ W/198.

⁵⁶ Communication from Brazil to the WTO TRIPS Council, *Review of Art. 27.3(b)*, 24 November 2000, IP/C/W/228.

⁵⁷ Communication from Mauritius on behalf of the African Group to the WTO TRIPS Council, *Review of the Provisions of Art. 27.3(b)*, 20 September 2000, IP/C/W/206.

⁵⁸ The Doha Declaration is the document agreed upon by the trade ministers of the member countries of the World Trade Organization at the Doha Ministerial meeting in November 2001 held at Doha, the Capital of Qatar. The Declaration initiates negotiations on 21 subjects, with a distinctive feature that emphasises the interests of the developing countries. See WTO, *Ministerial Declaration* (Ministerial Conference Fourth Session, Doha, 9 - 14 November 2001) T/MIN (01)/DEC (adopted in November 14, 2001), para. 2; Konrad von Moltke, “After Doha-Assessing the outcomes of the WTO Fourth Ministerial Conference” *IISD Commentary* (April 2002) at 1. Online: IISD <<http://www.iisd.org>>. WTO, *Ministerial Declaration* (Ministerial Conference Fourth Session, Doha, 9 - 14 November 2001) T/MIN (01)/DEC (adopted in November 14, 2001), para. 2.

knowledge and folklore, and other relevant new developments,” taking fully into account “the development dimension.”⁵⁹

The setting of TK as a specific item on the negotiating agenda of the WTO created an opportunity to explore different approaches for protecting TK. As Section 4.6 below indicates, various modalities for protecting TK and TK-based resources are developed. Some Members of the WTO raised the idea of extending the existing protection of GIs to all agricultural products, including TKBAPs.⁶⁰ However, the negotiating package of the Doha negotiations excluded the issue of protecting TK, and of extending GIs protection.⁶¹

To conclude, none of the WTO agreements currently recognizes and protects TK.⁶² In addition, the prospect for considering the protection of TK in the “international intellectual property law making” process of the WTO seems uncertain.⁶³ As a result, developing countries “sought out greener pastures in other international regimes” that

⁵⁹ *Ibid.*, para. 19.

⁶⁰ See Chapter 5 Section 5.4.2, above, for negotiation regarding the scope of GIs protection in the WTO.

⁶¹ The final negotiating package, referred to as “the General Council’s post-Cancún decision” or the “July package,” is a decision adopted by the General Council on 1 August 2004 to reformulate the Doha Round objectives in order to keep the Doha Development Round on track and to successfully round up the negotiations with an agreement by the end of 2005. See WTO, *Doha Work Programme* (Decision adopted by the General Council, 1 August 2004) WTO Document WT/L/579[*July Package*] see note 128, Chapter 2, at 15.

⁶² The only TK protection provision in the WTO is found in the Agreement on Technical Barriers to Trade which provides for the treatment of TK-based produced and production and process methods differently from non-TK based ones for the purpose of “preserving indigenous technology and production methods and processes.” *Agreement on Technical Barriers to Trade (TBT)*, 27 September 1994, ILM 81; reprinted in GATT, *The Tokyo Round Agreements* (Geneva: GATT, 1986), Art. 12.4.

⁶³ The only success for developing countries, as far as the protection of TK in the WTO is concerned, seems the introduction of TK protection as an item for action in the context of the Doha agenda. See Helfer, “Regime Shifting”, *supra* note 49 at 45 and nn. 19.

consider the protection of TK and the impact of IP in broad areas of public policy interest.⁶⁴

Developing countries have challenged the TRIPS Agreement's rules on IPRs in other international forums entrusted with normative concerns beyond IPRs, such as those based on development, biodiversity, human rights, and health. For developing countries, these forums offered more democratic, transparent, and sympathetic venues to advance causes that they feel the WTO did not address.⁶⁵ In turn, industrialized countries sought to preserve and defend IP rights in the different areas, thereby switching "between various [forums] to negotiate different sets of possibly competing rules."⁶⁶ This marked "regime shifting" from WTO to other forums whose actions generated "counter-regime norms" in the form of treaties and nonbinding recommendations that challenge the TRIPS Agreement.⁶⁷

Because of the shift, several international regimes currently address the issue of protecting TK and TKBAPs. The focus of IP law making shifted back from WTO to

⁶⁴ *Ibid.* at 41; Joost Pauwelyn, "The Dog That Barked But Didn't Bite: 15 Years of Intellectual Property Disputes at the WTO" (2010) 1J Int Disp Settlement 389.

⁶⁵ See Laurence R. Helfer, "Mediating Interactions in an Expanding International Intellectual Property Regime" (2004) 36 Case W Res J Int'l L 123; Ruth L. Okediji, "The International Relations of Intellectual Property: Narratives of Developing Country Participation in the Global Intellectual Property System" (2003) 7 Sing J Int'l & Comp L 315.

⁶⁶ Gervais, "Are We Closer," note 163, Chapter 1, at 553; also see Susan K. Sell, "TRIPS was Never Enough: Vertical Forum Shifting, FTAS, ACTA, and TPP" (2011) 18 J Intell Prop L 447; Helfer, "Regime Shifting" *supra* note 49.

⁶⁷ Helfer describes "regime shifting" as a strategy "whereby states and non-state actors relocate rulemaking processes to international venues whose mandates and priorities favor their concerns and interests." "Regime shifting" – distinguished from "forum shopping" and "forum shifting" – "works by broadening the policy spaces within which relevant decisions are made and rules are adopted, thereby expanding the constellation of interests and issues that actors must consider when defining rules, norms, and decision-making procedures." *Ibid* at 39.

WIPO.⁶⁸ Developing countries resorted to WIPO to deal with the protection of TK, aiming to capitalise on their greater influence in WIPO because of the perceived democratic nature of its decision-making.⁶⁹

Beyond WIPO, developing countries also pushed their cause in other forums that have similar decision-making processes.⁷⁰ These forums mainly include the FAO, the CBD, the United Nations Commission on Human Rights (UNCHR) the World Health Organization (WHO) and similar branches of the UN. Some understanding of the efforts to protect TK in these forums is necessary to establish the claim in this thesis that a protective system for TK should befit the nature and use of knowledge in particular contexts. As well, a discussion of the protection of TK in international forums is also necessary to identify various approaches and modalities for protection.

⁶⁸ See text accompanying note 39; see also Carlos María Correa, *Research Handbook on the Protection of Intellectual Property under WTO Rules* (Cheltenham: Edward Elgar Publishing, 2010) at 113; Helfer, “Regime shifting” *supra* note 49 at 25.

⁶⁹ In comparison to that of the WTO, the working procedures and decision-making processes of WIPO are considered significantly transparent, democratic, and participatory. Given that developing countries constitute the majority, these attributes give them stronger influence. See World Intellectual Property Organization, *General Rules of Procedure*, as adopted on September 28, 1970, WIPO Pub. No.399 online: WIPO <http://www.wipo.int/freepublications/en/general/399/wipo_pub_399.pdf>; also see Peter Drahos, “Developing Countries and International Intellectual Property Standard-Setting” (2002) 5J World Intell Prop, 765–789.

⁷⁰ Most specialized branches of the United Nations, including WIPO, make decisions based on consensus. If consensus cannot be achieved, they enter decisions based on voting by simple majority. See *Charter of the United Nations* 24 October 1945, Can TS 1945 No. 76, Art. 27; see also UN Non-Governmental Liaison Service (NGLS), *Intergovernmental Negotiations and Decision Making at the United Nations: A Guide* (New York: United Nations Non-Governmental Liaison Service (NGLS), 2007) Representatives of developing countries and ILCs are also attracted to other branches of the UN because the respective branches of the industrialized countries that are mandated for negotiation are more considerate to the food, biodiversity, human rights, and public health issues addressed. For example, the U.S.T.R., which has the mandate over negotiations in the WTO, prioritises free trade, whereas, other branches of the US that have mandates for negotiations in other forums, such as the United States Department of Agriculture. See Helfer, “Regime Shifting”, *supra* note 49 at 81.

4.3.2 TRADITIONAL KNOWLEDGE IN THE WORLD INTELLECTUAL PROPERTY ORGANIZATION

WIPO is one of a number of specialized agencies of the United Nations that are actively involved in efforts to protect TK.⁷¹ In 1998 and 1999, WIPO conducted a series of fact-finding missions (FFM) to determine the “intellectual property needs” of stakeholders in the protection of TK.⁷² The work program of WIPO with respect to the FFM studies was restricted to the narrow objective of “an exploratory approach to the IP aspects of TK.” It did not extend to broader objective of exploring an appropriate mode of protecting TK in a holistic context.⁷³ As a result, the FFM reports tend to view TK exclusively from an IP perspective in a manner that critics decry as “enrolling one socially embedded form of transaction and knowledge [i.e. intellectual property] into the terms or practices of another [i.e. TK].”⁷⁴ In its final report, the FFM identifies “informal regimes” that it describes as “different from the formal IP-systems administered by WIPO, but just as effective in protecting the local innovator.”⁷⁵

Based on IP issues in the context of the themes that the report identified, the WIPO General Assembly established an Intergovernmental Committee on Intellectual Property and Genetic Resources, TK and Folklore (IGC). The WIPO General Assembly gave the

⁷¹ The other major UN agencies addressing TK are UNESCO with regard to Cultural Heritage; the WHO in respect to traditional medicine; the FAO with respect to food and agriculture; the International Labour Organization in the context of ILO Convention No. 169; the UNDP; UNCTAD and the UNEP within the framework of the CBD. See Section 4.4, below.

⁷² See FFM, note 1, Chapter 2, at 209.

⁷³ *Ibid.*, para. 4.

⁷⁴ Brian Noble, “Justice, Transaction, Translation: Blackfoot Tipi Transfers and WIPO’s Search for the Facts of Traditional Knowledge Exchange” (2007) 109 *American Anthropologist* 338 at 338.

⁷⁵ FFM, note 1, Chapter 2.

IGC a mandate under three themes, which WIPO developed from informal consultations after the FFM reports: (a) Access to genetic resources and benefit sharing; b) Protection of TK; and c) Protection of expressions of folklore.⁷⁶ The IGC treats the “protection of TK” and “access to genetic resources” as two separate agenda items.⁷⁷

In addressing the protection of TK in general, the IGC adopts a methodology of “gap analysis”⁷⁸ This method of analysis refers to “the identification of areas where current intellectual property norms leave TK holders in the dark.”⁷⁹ The IGC proposes a number of defensive and positive mechanisms to address the identified gaps in protecting TK. These mechanisms involve either adaptations of existing systems of IP or possible *sui generis* complements.⁸⁰ The IP-based approach includes proposals for different “practical measures” to protect TK within the existing IPRs.⁸¹ This includes, for example, measures

⁷⁶ WIPO, *Matters Concerning the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore*, Agenda Item 28 (WIPO General Assembly Thirty-Eighth (19th Ordinary) Session September 22 to October 1, 2009) online : WIPO < http://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_15/wipo_grtkf_ic_15_ref_decision_28.pdf > at para. 20.

⁷⁷ See WIPO, *Draft Agenda* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Seventh Session Geneva, November 1 to 5, 2004) WIPO/GRTKF/IC/7/1 Prov.; also see the list of the documents in WIPO, *Brief Summary of Working Documents*, (Intergovernmental Committee On Intellectual Property And Genetic Resources, Traditional Knowledge And Folklore, Seventh Session Geneva, November 1 to 5, 2004) WIPO/GRTKF/IC/7/INF/3.

⁷⁸ WIPO, *The Protection of Traditional Knowledge: Draft Gap Analysis; Revision* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Thirteenth Session, Geneva, October 13 to 17, 2008) WIPO/GRTKF/IC/13/ 5(b) Rev. [“Gap Analysis”].

⁷⁹ See Gervais, “Are We Closer”, note 163, Chapter 1, at 556.

⁸⁰ See “Options that Exist or might be Developed to Address any Identified Gaps” in WIPO, *The Protection of Traditional Knowledge: Draft Gap Analysis: Revision* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Thirteenth Session, Geneva, October 13 to 17, 2008) WIPO/GRTKF/IC/13/5(b) Rev. at Appendix I.

⁸¹ See Section 4.6.5, below, for discussion of IP-based models to protect TK; also see Mcmanis, “Thinking Globally”, note 220, Chapter 3, at 6.

that enable patent examiners discover relevant TK as *prior art* in patent applications.⁸² In this respect, the IGC encourages the use of existing IPRs, as much as possible, “to enable traditional knowledge holders to use and enforce rights.”⁸³ For elements of TK that the existing IPRs cannot accommodate, the IGC suggests *sui generis* options.⁸⁴

Successive sessions of WIPO’s General Assembly have renewed the IGC’s mandate to explore protection mechanisms for TK. Consequently, the IGC has developed and outlined different policy objectives and guiding principles.⁸⁵ The fortieth session of the WIPO General Assembly instructed the IGC to undertake “text-based negotiations” to “ensure the effective protection” of TK.⁸⁶ The IGC currently conducts these negotiations with the hope to conclude an “international legal instrument (or instruments)” on TK.⁸⁷

Of particular relevance to the general hypothesis of this thesis regarding the search for modalities to protect TK is the diversity of approaches that WIPO endorses for the

⁸² See WIPO, *Progress Report on the Status of Traditional Knowledge as Prior Art* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Second Session Geneva, December 10 to 14, 2001) WIPO/GRTKF/IC/2/6; Mcmanis, “Thinking Globally”, note 220, Chapter 3, at 6.

⁸³ See *supra* note 77.

⁸⁴ For discussion of *sui generis* options to protect TK, see below Section 4.6.3; WIPO, *Survey on Existing Forms of Intellectual Property Protection for Traditional Knowledge* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Second Session Geneva, December 10 to 14, 2001) WIPO/GRTKF/IC/2/5 at 14.

⁸⁵ WIPO, *The Protection of Traditional Knowledge: Draft Objectives and Principles* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Tenth Session Geneva, November 30 to December 8, 2006) WIPO/GRTKF/IC/10/5 at 3-5.

⁸⁶ See WIPO, *Matters Concerning the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore: Agenda Item 26* (Assemblies of Member States of WIPO Fortieth (20th Ordinary) Session September 26 to October 5, 2011) online: <http://www.wipo.int/export/sites/www/tk/en/documents/pdf/decision_assemblies_2011.pdf>.

⁸⁷ See *ibid.*

purpose. Throughout its work program on TK, the IGC has emphasised the role of existing systems of IP in providing defensive and positive protection for TK. Its patronage of existing IP as an option for dealing with TK, pursuant to the FFM reports, may be justified on the ground that the mandate of WIPO is primarily to promote the protection of IP.⁸⁸ For categories of TK to which existing forms of IPRs may not provide sufficient protection, WIPO's search for modalities of TK protection has generally evolved towards identifying prevailing and existing knowledge-protection protocols in indigenous or non-Western cultures.⁸⁹ To achieve this goal, WIPO adopts a "bottom-up approach" of defining requirements for *sui generis* systems that can be adopted in national jurisdictions to protect TK.⁹⁰

WIPO's approach to exploring diverse methods to suit to different categories of TK corresponds to the central inquiry in this thesis, which is to explore the potential of GIs as modalities of protection for TK in the specific context of TKBAPs. According to WIPO, recognizing the holistic feature of TK entails, identifying different instruments to address different aspects of TK. Those aspects of TK that have relevance to agricultural production may require the use of GIs to protect TKBAPs and, consequently, GIs may serve the pluralistic context of TK protection.

⁸⁸ The WIPO Convention, which gave rise to the establishment of the organization in 19 67, states that the objective of the organization is to "promote the protection of intellectual property throughout the world through cooperation among States and, where appropriate, in collaboration with any other international organization. *Convention Establishing the World Intellectual Property Organization*, 26 April 1970, 21 UST 1770; 828 UNTS 3, Art. 3.

⁸⁹ Oguamanam, "Localizing", note 1, Chapter 1, at 161-162.

⁹⁰ See Note 75, Chapter 2.

The role of GIs in the holistic context of TK protection can, therefore, be understood by assessing their instrumentality in the pursuit of socio-cultural and biodiversity goals.⁹¹ This requires a background understanding of the modalities for the protection of TK in the international forums that regulate the use of biological resources.⁹² In this respect, the forums with which WIPO underlined the need to coordinate its work include the CBD and the FAO.⁹³

Given the role and importance of TK in the use of biological diversity, developments in the CBD and the FAO have relevance for the search for modalities of TK protection. A closer look at efforts in these forums is also necessary for understanding the primary focus of this thesis, the instrumentality of GIs as they relate to the protection of biodiversity.⁹⁴ The following Section examines the protection of TK in the context of the CBD.⁹⁵

⁹¹ See Chapter 6 Sections 6.3 Section 6.8, below, for assessment of GIs based on socio- cultural and biodiversity outcomes.

⁹² WIPO's *policy and objectives* document, which serves as a basis for the "text-based negotiations" that it is currently engaged in, puts special emphasis on the "complementarity with instruments in other policy areas" to achieve "truly comprehensive and holistic protection, preservation and promotion of TK," so that the form of TK protection can be "situated within an holistic international context." See WIPO, *Protection of Traditional Knowledge: Overview of Policy Objectives and Core Principles* Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Seventh Session, Geneva, November 1 to 5, 2004) WIPO/GRTKF/IC/7/, para. 18 & para. 22.

⁹³ *Ibid.*, para. 23 (h).

⁹⁴ See Chapter 6 Section 6.5, below, for more on this.

⁹⁵ See *supra* note 92 para. 18 & para. 22.

4.3.3 THE PROTECTION OF TRADITIONAL KNOWLEDGE UNDER THE CONVENTION ON BIOLOGICAL DIVERSITY

The CBD is an overarching international treaty which recognizes the importance of TK in the field of environmental protection and biodiversity conservation. It is the first, and the only binding international treaty to explicitly address the protection of TK.⁹⁶ The Convention incorporates Principle 22 of the Declaration of the 1992 Earth Summit in Rio de Janeiro as an objective to preserve biodiversity for future generations through attention to TK.⁹⁷ The Preamble to the CBD underlines the principle of equitably sharing of benefits from the use of TK in conserving biodiversity.⁹⁸ To realize the objective of biodiversity conservation, the CBD lays down various measures that include *in situ* and *ex situ* measures of conservation. Art. 8 (j) sets forth conditions for the implementation of *in situ* conservation by requiring Contracting Parties to:

[R]espect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

⁹⁶ Note 42, Chapter 2, at 215; see also Oguamanam, “International Law”, note 1, Chapter 1 at 5 (arguing that “the CBD represents perhaps the most authoritative international instrument yet that recognizes the traditional knowledge of indigenous and local communities”).

⁹⁷ Principle 22 of the Rio Declaration recognizes that indigenous peoples have a vital role to play in biodiversity conservation and environmental management due to alternative answers and solutions to formal science that they espouse in the form of TK. Agenda 21, *United Nations Conference on Environment and Development (UNCED)*, Rio de Janeiro, 3-14 June 1992 (“The Earth Summit”), online: < <http://www.un.org/geninfo/bp/envirp2.html> >; see CBD, note 1, Chapter 2, Preamble & Art. 8 (j); see also Panizzon, note 19, Chapter 3,, at 11.

⁹⁸ See CBD, *ibid*, Preamble, para 12.

As a mode of implementing the conditions of *in situ* conservation, the CBD recognizes states' sovereignty over resources in their jurisdiction and acknowledges states' rights to determine conditions to access them.⁹⁹ It introduces the principles of "mutually agreed terms" and "prior informed consent" (PIC),¹⁰⁰ which require financial or technological assistance from persons interested in accessing biodiversity and in using the underlying TK. In exchange, the Convention requires biodiversity-rich countries to accept the need for "adequate and effective protection of intellectual property rights."¹⁰¹

It is important to note that the CBD does not specifically refer to IPRs over genetic materials. In addition, its requirement for the protection of IPRs is softened by the requirement that states should "ensure that such rights [support] and do not run counter to" the Convention's objectives.¹⁰² In this context, Art. 8 (j) seems to require that the protection of IPRs should not override measures for protecting TK as long as these measures have conservation of biological diversity as an objective.¹⁰³

The CBD does not stipulate the exact terms and conditions for the practical application of the principles of "sovereignty over natural resources," "mutually agreed terms," "prior informed consent" that it recognizes.¹⁰⁴ In the wake of the coming into

⁹⁹ *Ibid.* Art. 3 & Art. 15, para 1 and 3.

¹⁰⁰ *Ibid.* at Art. 15 (4), Art. Art. 3, Art.16,

¹⁰¹ *Ibid.* at Art. 16 (2)

¹⁰² *Ibid.* at Art. 16 (5)

¹⁰³ See CBD, note 1, Chapter 2, Art. 1; Ikechi Mgbeoji, "Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio Piracy?" (2001) 9 *Ind J Global Legal Stud* 163 at 172.

¹⁰⁴ See CBD, note 1, Chapter 2.

force of the TRIPS Agreement, however, the CBD's Conference of Parties (COP) took initiatives to protect biodiversity and underlying TK through two paths: Protection in accordance with Art. 8 (j); and protection through access and benefit sharing (ABS) mechanisms.¹⁰⁵ To address the protection of TK under Art. 8 (j), the COP established the Ad Hoc Open-ended Inter-sessional Working Group on Art. 8 (j) and Related Provisions (WG).¹⁰⁶

In its first recommendation, the WG proposed a multifaceted approach to protecting TK through strategies that include the use of existing IPRs mechanisms, *sui generis* measures, contractual arrangements, and registers of TK.¹⁰⁷ In subsequent reports, the WG recommended a “holistic” and “comprehensive” model of *sui generis* protection to TK.¹⁰⁸ This approach recognizes IPRs, as currently incorporated in the TRIPS, as being at odds with ILCs' understanding of rights that should be established to protect TK.¹⁰⁹ Thus,

¹⁰⁵ See Conference of Parties to the CBD, *Institutional Matters and the Program of Work*, COP 4 Decision IV/16 online: < <http://www.cbd.int/decision/cop/?id=7139> >.

¹⁰⁶ CBD, *Background and Status: Traditional Knowledge, Innovations and Practices*, online: < <http://www.cbd.int/programs/socio-eco/traditional/background.aspx> >.

¹⁰⁷ CBD, *Report of the Ad Hoc Open-Ended Inter-Sessional Working Group on Art. 8(j) and Related Provisions of the Convention on Biological Diversity on the Work of its Second Meeting*, (14 Feb 2002) U.N. Doc. UNEP/CBD/COP/6/7, para. 5. Also, Conference of the Parties to the Convention on Biological Diversity, *Article 8(j) and Related Provisions*, Decision VI/10, in *Report of the Sixth Meeting of the Conference of the Parties to the Convention on Biological Diversity*, (27 May 2002) 161-164, U.N. Doc. UNEP/CBD/COP/6/20, at 155, online: < <http://www.biodiv.org/doc/decisions/COP-06-dec-en.pdf> >.

¹⁰⁸ See Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(J) and Related Provisions of the

Convention on Biological Diversity, *Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices to Identify Priority Elements* (Fifth meeting, 15-19 October 2007, Montreal) UNEP/CBD/WG8J/5/6 20 September 2007, para. 4, online: <<http://www.cbd.int/doc/meetings/tk/wg8j-05/official/wg8j-05-06-en.pdf>>, para. 12.

¹⁰⁹ See *Ibid*, para. 12; see also discussion in above Chapter 2 Section 2.2.4.

the CBD recommends the use of the customary law of ILCs to devise mechanisms of positive and defensive protection of TK.¹¹⁰

The Fifth COP meeting addressed the use of ABS mechanisms by establishing an Ad Hoc Open-ended Working Group on Access and Benefit-Sharing (WG-AB), which later developed the Bonn Guidelines on Access and Benefit-Sharing (the Bonn Guidelines).¹¹¹ Adopted at the Sixth COP meeting in 2002,¹¹² the Bonn Guidelines stipulate voluntary rules for disclosure of origin requirements, lay down procedures for PIC, specify elements of “mutually agreed terms” for benefit sharing arrangements, and set out rules which may be incorporated in national biodiversity and related legislation.¹¹³

The WG collaborated with the WG-AB to prepare a draft international protocol on ABS, which the COP considered in its eighth meeting in 2006.¹¹⁴ After contentious negotiations on key aspects, the COP adopted the *Nagoya Protocol on ABS* on October

¹¹⁰ *Ibid* at paras. 26-30.

¹¹¹ The Working Group was established pursuant to decision V/26. See, Conference of the Parties, “Access and benefit-sharing” in *Decisions adopted by the Conference of the Parties to the Convention on Biological Diversity at its Fifth Meeting*, COP 5 Decision V/26 (*Fifth Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity*, 15 - 26 May 2000, Nairobi), para. 11.

¹¹² The “Bon Guidelines” is an interpretative instrument with the aim to clarify regulations on ABS contained in the CBD. Conference of the Parties, *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization* COP 6 Decision VI/24 (Sixth Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity, the Hague, 7 - 19 April 2002) [“Bonn Guidelines”].

¹¹³ See *ibid*; also see CBD, note 1, Chapter 2, Arts. 15 (5), (7)

¹¹⁴ See *Plan of Implementation* (The World Summit on Sustainable Development, Johannesburg, 2002)online: <http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf>, para. 44 (0); CBD Secretary, *Draft Decisions for the Eighth Meeting of the Conference of the Parties to the Convention on Biological Diversity* (Conference of the Parties to the Convention on Biological Diversity, Eighth meeting, Curitiba, 20-31 March 2006) UNEP/CBD/COP/8/1/Add.2.

29, 2010.¹¹⁵ Both working groups continue to address numerous agenda on matters originally left to their mandate.¹¹⁶

The consecutive meetings of the CBD's COP have achieved significant progress in the development of the principles that the CBD introduced, including the conclusion of the Nagoya Protocol and the Bonn Guidelines.¹¹⁷ However, the harmonisation of measures for TK protection in the CBD remains uncertain.¹¹⁸ As far as the protection of TK is concerned, the CBD emphasises the importance of “cooperation” and the need to “design and implement mutually supportive activities” with other intergovernmental

¹¹⁵ See the final result incorporates the works by the WG and WG-AB groups since the establishment of the two working groups. Negotiated with in the context of Art 15 of the CBD, the Nagoya Protocol is aims to ensure fair and equitable sharing of the benefits arising from the utilization of genetic resources to contribute to “contributing to the conservation of biological diversity and the sustainable use of its components.” The protocol contains thirty-six articles in total, and is open for signature since 2 February 2011, until 1 February 2012. Of significant note, Art. 12 of the Nagoya Protocol prescribes mandatory conditions for access to traditional knowledge associated with genetic resources. Also, Arts 15 and 16 state requirements for action through domestic legislation or regulatory requirements for access and benefit sharing on traditional knowledge associated with genetic resources. See *The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*, opened for signature on 2 February 2011, Annex 1 to CBD COP10. Agenda item 3 [“Nagoya Protocol”].

¹¹⁶ The working groups have mandates to find harmonized measures for the protection of biodiversity and TK in the CBD framework. See the list of work agenda to be acted upon by WG in CBD, *Notification* (Sixth Meeting of the Ad Hoc Open-ended Working Group on Article 8(j) and Related Provisions (WG-8(j) 6), Montreal, Canada, 2-6 November 2009) SCBD/SEL/OJ/JS/SG/67912; Significant of note, in this regard, is the “Draft Elements of a Code of Ethical Conduct” that the WG prepared. Although much of the text remains within brackets, due to disagreements on key provisions, the draft is targeted at ensuring “respect for the cultural and intellectual heritage of indigenous and local communities” relevant to biodiversity. See CBD, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Ninth Meeting: Article 8(j) and related provisions* (Conference of the Parties to the Convention on Biological Diversity, Ninth Meeting, Bonn, 19–30 May 2008) Agenda item 4.2 UNEP/CBD/COP/DEC/IX/13 at 9ff.

¹¹⁷ The CBD process has contributed to the development of the principles of “access and benefit sharing,” “sovereignty over natural resources,” “mutually agreed terms,” and “prior informed consent.”

¹¹⁸ The prospect for international agreement on the protection of TK in the CBD framework is gloom for a number of reasons. First, jurisdictional conflict arises in regard to the proper mandate between the CBD and the TRIPS Agreement over the treatment of biodiversity-related IP issues because the CBD entered into force in a pre-TRIPS environment. Second, the US – a dominant voice behind the extensive enforcement of IP in the TRIPS and UPOV has not ratified the CBD. See list of CBD members: <http://www.cbd.int/information/parties.shtml>

organizations including the FAO, WIPO and the WTO.¹¹⁹ This is consistent with the mandate that the WIPO General Assembly extended to the IGC, that it should seek the protection of TK in “close cooperation with other international agencies and processes” in the work areas of the Committee’s mandate.¹²⁰ In addition to the IGC, the CBD coordinates its work on the protection of TK with the works of the international body that is concerned with IP issues in food and agriculture, the FAO.

Whereas the CBD deals with TK associated with biological resources in general, FAO focuses on TK in the area of biological resources in agriculture. The protection of TK in the FAO has particular relevance for the focus on the protection of TKBAPs in this thesis, because the works of the FAO specifically address TK in agricultural practice. An examination of initiatives to protect TK in the FAO provides the necessary background to understanding the rules and principles that guide the development of international law in relation to TKBAPs.

¹¹⁹ See CBD, *Cooperation with Other Organizations, Initiatives and Conventions*, COP 6 Decision VI/20, online: CBD <http://www.cbd.int/decision/cop/?id=7194>; also see CBD, *Decisions on Cooperation* online: CBD <<http://www.cbd.int/cooperation/decisions.shtml>>.

¹²⁰ Accordingly, the IGC and the CBD collaborate on work on supplementing the ABS provisions of the Bonn Guidelines with “IP aspects of contractual arrangements for access and benefit-sharing.” The IP aspects of CBD’s ABS system that are subjects of cooperation with the IGC mainly include disclosure of origin requirements in patent applications. See discussion regarding the “Bonn Guidelines” below Section 4.6.1. The “FAO treaty” refers to *International Treaty on Plant Genetic Resources for Food and Agriculture*, adopted by the FAO Conference, at its Thirty-first Session (November 2001) on 3 November 2001, through Resolution 3/2001, entered into force on 29 June 2004; WIPO, *Genetic Resources: List of Options*, (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Eleventh Session, Geneva, July 3 to 12, 2007) WIPO/GRTKF/IC/11/8 (a)); WIPO, *Traditional Knowledge, Traditional Cultural Expressions and Genetic Resources: The International Dimension* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Sixth Session Geneva, March 15 to 19, 2004) WIPO/GRTKF/IC/6/6.at para. 27; also *supra* note 77, para. 20.

4.3.4 TRADITIONAL KNOWLEDGE IN THE FOOD AND AGRICULTURAL ORGANIZATION

Established in 1945 as a specialized agency of the United Nations, the FAO has the mandate to raise levels of nutrition and standard of living, to improve agricultural productivity, and to better the condition of rural populations.¹²¹ To this end, the FAO provides technical assistance for policy dialogue among states to develop international norms, standards, and conventions regarding biological resources for food and agriculture.¹²² Among others, subjects that the FAO addresses include the development of IP rules on rights and interests in technological advances in agricultural production for food.

Historically, the development of IPRs had no influence in agricultural production; IPRs principally apply to “commercial production of ... mechanical inventions such as special hoisting gear for barges and processes for making stained glass.”¹²³ Although property rights over crop varieties may seem tenable, “the knowledge of plant production” has not been the subject of IPRs because the overwhelming view was that “plants are not invented, they are bred.”¹²⁴ The practice of breeding involves creation of the conditions for plants to reproduce themselves, rather than production of plants in

¹²¹ See FAO, *Report of the Conference of FAO - First Session: Report of Commission to the Conference*, online: FAO < <http://www.fao.org/docrep/x5584E/x5584e06.htm>>.

¹²² The focus on biodiversity for food and agriculture distinguishes FAO’s mandate from the CBD, which is concerned with biological resources in general.

¹²³ Borowiak, *supra* note 118 at 514.

¹²⁴ *Ibid.*

itself.¹²⁵ Given that pollination of cultivated plants predominantly takes place in open fields, it was impossible to claim patents or any other IP rights over plants.

IP issues were linked with agricultural production following the advent of “specialized” and “scientific” plant breeding” practices through the use of “scientific knowledge” in science laboratories.¹²⁶ After the discovery – in 1919 – of techniques of “hybridizing corn,” the US enacted the 1930 *Plant Patent Act* (PPA), the world’s first legal regime for new forms of plants.¹²⁷ In 1961, some economically advanced countries established a multilateral legal framework of “plant breeder’s rights” (PBRs) – *sui generis* forms of IP protection – through the primary international framework for plant variety protection, namely, the *International Union for the Protection of New Varieties of Plants* (UPOV).¹²⁸

PBRs are set forth in the context of commerce, industry, and scientific invention. As such, the criteria for their protection do not accommodate TKBAPs from ILCs.¹²⁹ The

¹²⁵ *Ibid.*

¹²⁶ See Graham Dutfield, *Intellectual Property Rights and the Life Science Industries: A Twentieth Century History* (Hampshire: Ashgate Publishing, 2003) at 101 ff.

¹²⁷ See Kloppenburg, note 53, Chapter 1, at 132. For an illuminating account of how IPRs were extended to plant breeding activities in the United States through legislation and the establishment of international institutions, see R. E. Evenson, “Intellectual Property Rights, Access to Plant Germplasm, and Crop Production Scenarios in 2020” (1999)39 *Crop Science* 1630.

¹²⁸ The UPOV was adopted by a Diplomatic Conference among European countries, held in Paris. The treaty came into force upon ratification by the United Kingdom, the Netherlands and Germany. See UPOV 1991, note 53, Chapter 1.

¹²⁹ Plant Breeder’s Rights are patent-like rights with some missing attributes. Similar to Patents, they provide exclusive rights to the holder, reward an inventive process, and are protected for a limited period of time. Unlike patents which require that the subject matter of protection did not exist previously, however, the requirement of novelty in PBRs is satisfied if the plant variety has not been sold or otherwise disposed of to others, by or with the consent of the breeder, for the purpose of exploitation of the variety. Other criteria include: distinctness, stability and uniformity or homogeneousness. See *ibid.* at Arts. 6, Arts. 7, & Art. 8; Borowiak, note 118, Chapter 3, at 518.

recognition of seed industries' rights over the production of crop varieties restricts traditional farmers' practice to freely save, borrow, and exchange seeds.¹³⁰ The 1978 revised version of UPOV implicitly allowed "the production of propagating material of a protected variety for non-commercial purposes" through "Farmer's Privilege."¹³¹ However, the 1991 revision allows farmers to exchange seed with other farmers for propagating purposes only and in limited circumstances.¹³²

To address the sense of exclusion that ILCs experience in the UPOV system and to rectify the inequity that results from it, the 1983 FAO conference established the Commission on Genetic Resources for Food and Agriculture (CGRFA).¹³³ The CGRFA prepared the *International Undertaking on Plant Genetic Resources* (the Undertaking) as a "first major attempt to address the concerns arising from the exclusion of informal generators of PGRs from having access to proprietary varieties."¹³⁴ The Undertaking –

¹³⁰ See Jack A. Heinemann, *A Typology of the Effects of (Trans) Gene Flow on the Conservation and Sustainable Use of Genetic Resources*, CGRFA Background Study Paper No. 35 (2007) at 51 ff.

¹³¹ FAO, *Multilateral Trade Negotiations on Agriculture: A Resource Manual* (Rome: Food and Agriculture Organization of the United Nations, 2000) Online: FAO <<http://www.fao.org/docrep/003/x7355e/x7355e06.htm>>.

¹³² Art. 15.2 provides "each contracting Party may, within reasonable limits and subject to the safeguarding of the legitimate interest of the breeder, restrict the breeder's right in relation to any variety in order to permit farmers to use for propagating purposes, on their own holdings, the product of the harvest which they have obtained by planting, on their own holdings, the protected variety ...". Also, Art. 14 (2) subjects farmers to the "authorization of the breeder... in respect of harvested material, including entire plants and parts of plants" in the use of the protected varieties as propagating material in their own fields. UPOV 1991, note 53, Chapter 1.

¹³³ See IISD Reporting services, "A Brief Introduction to the CGRFA" (November 2004) Earth Negotiations Bulletin, online: Linkages A Multimedia Resource for Environment and Development Policy Makers <<http://www.iisd.ca/biodiv/cgrfa10/curtain.html>>; Chidi Oguamanam, "Intellectual Property Rights in Plant Genetic Resources: Farmers' Rights and Food Security in Indigenous and Local Communities" (2006) 11 Drake J Agric L 273 at 283 [Oguamanam, "Farmers' Rights and Food Security"]; also Blakeney, "Food Security", note 134, Chapter 1, at 76.

¹³⁴ Oguamanam, *ibid.*; see *International Undertaking on Plant Genetic Resources Conference* (Resolution 8/83 of the Twenty-second Session of the FAO Conference, Rome, 5-23 November 1983).

adopted in 1983 by the FAO conference as a non-legally binding agreement – incorporates the CHM principle, and consequently, holds that PGRs “should be available without restriction.”¹³⁵ However, both industrialized and developing countries contested the adoption of the CHM as a guiding principle to regulate PGRs.

For biodiversity-rich developing countries, the CHM constitutes a tacit endorsement of the various forms of appropriation of their biological resources and TK through biotechnological applications.¹³⁶ Industrialized countries, on the other hand, were concerned that the CHM approach may interfere with PBRs that are recognized in the UPOV treaty.¹³⁷ An interpretive resolution was adopted to clarify the practical application of the CHM in relation to the rights and duties of members of the FAO.¹³⁸ The resolution also introduced the concept of Farmers’ Rights to recognize “the enormous contribution that farmers of all regions have made to the conservation and development of plant genetic resources.”¹³⁹ As the discussion below shows, the concept of Farmers’ Rights was later overcast as “a political counterpoint to intellectual property rights.”¹⁴⁰

¹³⁵ *Ibid.* at Art. 1.

¹³⁶ Mostly used in international regulation of resources, in simple terms, the concept of “common heritage of mankind” can be defined as “a global entity constructed by the collective labours of all humanity over all time.” See Oguamanam, “Localizing”, note 1, Chapter 1, at nn. 28.

¹³⁷ UPOV 1991, note 53, Chapter 1.

¹³⁸ The resolution provides that “some countries have not adhered to the Undertaking and others have adhered with reservation because of possible conflict of certain provisions of the Undertaking with their international obligations and existing national regulations.” See FAO, *Agreed Interpretation of the International Undertaking*, Annex I (Resolution 4/89 of the Twenty-fifth Session of the FAO Conference, Rome, 11-29 November 1989). The “international obligations and existing national regulations” in this resolution refers to the IP obligations in the TRIPS and their implementing legislations in domestic framework.

¹³⁹ *Ibid.*

¹⁴⁰ See Borowiak, note 118, Chapter 3, at 532; see discussion below, Chapter 4, Section 4.5.

The 1991 FAO conference urged the implementation of Farmers' Rights through programs that support plant genetic conservation and utilization.¹⁴¹ Recognizing the need to take further steps toward the realization of Farmers' Rights, the 1993 FAO Conference requested the Director-General of the FAO to provide a forum for negotiations among governments on, *inter alia*, the "issue of the realization of Farmers' Rights."¹⁴²

Efforts to realize Farmers' Rights in a binding agreement, however, proved difficult and time-consuming. After a series of painstaking negotiations, the *International Treaty on Plant Genetic Resources for Food and Agriculture* (ITPGRFA) was signed in 2001 and came into force in 2004.¹⁴³ The ITPGRFA counterbalanced the "intellectual and other property rights" that it recognizes with the principles of "state sovereignty" and "Farmer's Rights."¹⁴⁴ This treaty abandoned the term CHM altogether, and adopted a "public domain" approach to PGRs that are stored in the gene banks established through a multilateral system for ABS.¹⁴⁵ The treaty urges biodiversity-rich states to contribute

¹⁴¹ FAO, *Resolution 3/91* (Twenty-sixth Session of the FAO Conference - Rome, 1991)

¹⁴² FAO, *Revision of the International Undertaking on Plant Genetic Resources*, 6-24 November 1993, Resolution 7/93, Report of the Conference of FAO - Twenty-Seventh Session online: <http://www.fao.org/docrep/x5586e/x5586e06.htm#revision_per_cent20of_per_cent20the_per_cent20international_per_cent20undertaking_per_cent20on_per_cent20plant_per_cent20genetic_per_cent20resources>.

¹⁴³ ITPGRFA, note 47, Chapter 2.

¹⁴⁴ See *Ibid.*, Art. 12, Art. 13.

¹⁴⁵ The ITPGRFA creates a multilateral system for access and benefit sharing, which, for a list of certain PGRFA, "established according to criteria of food security and interdependence", guarantees facilitated access in return for benefit sharing. It provides for facilitated access to material in the multilateral system for the purposes of food and agricultural research, breeding, and training. A Party is obliged to provide access to PGRFA listed in the multilateral system on certain terms. It also provides that benefits arising from the use, including commercial use, of PGR for food and agriculture under the Multilateral System shall be shared fairly and equitably through the exchange of information, access to and transfer of technology, capacity-building, and sharing of the benefits arising from commercialization. See *ibid.* at Art. 12 (3) (f); Sophia Twarog & Promila Kapoor, eds, *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions* (New York; Geneva: UN, 2004).

voluntarily to these gene banks in exchange for public funds from the multilateral system.¹⁴⁶ According to this arrangement, PGRs and their underlying TK may be freely accessible to public and private researchers, and in return, the conservation and use of the resources will be supported through public funding.¹⁴⁷

The significance of the recognition of “Farmers’ Rights” to the protection of TK in biological resources for food and agriculture can be evaluated through an examination of the contents of the rights. Art. 9 (1) of the ITPGRFA requires Contracting Parties to “recognize the enormous contribution that local and indigenous communities and farmers of all regions of the world, particularly those in the centres of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources” through national measures that embrace Farmers’ Rights. Unlike IPRs in the TRIPS Agreement, Art. 9(2) of the ITPGRFA subjects measures for the protection and promotion of Farmers’ Rights to national standards. The treaty’s Preamble also affirms that “nothing in this Treaty shall be interpreted as implying in any way a change in the rights and obligations of the Contracting Parties under other international agreements.”

By leaving the determination of conditions for the recognition of Farmers Rights to the jurisdiction of contracting parties, the ITPGRFA fails to redress the imbalance that the TRIPS Agreement and the UPOV treaty create through wide recognition of IPRs for

¹⁴⁶ See *ibid.*, Art. 13, Art. 17 & Art. 18.

¹⁴⁷ See ITPGRFA, note 47, Chapter 2,, Art. 12.

individuals at the international level.¹⁴⁸ The ITPGRFA does not provide for “the legal context within which Farmers’ Rights are to be enacted” in national legislation.¹⁴⁹ This deviates from the approach of the TRIPS Agreement, which lays down minimum standards for enforcement of IPRs in national legislation.

The treaty’s recognition of “the contribution of farmers” as a basis of the right, as well as its emphasis on economic benefits through “compensation” and “reward” to farmers suggest a resemblance of the rights with IPRs.¹⁵⁰ Unlike most regimes of IPRs, however, Farmers’ Rights are dependent on an “open system of exchange and circulation” of PGRs and thus, do not exist in a market setting.¹⁵¹ Similar to TK, Farmers’ Rights “... derive essentially from traditional ecological/biodiversity knowledge and are informal in nature.”¹⁵²

In addition, Farmers’ Rights are not vested with identifiable individual farmers or groups and, most of all, they do not exclude other actors who may engage in similar activities of farmers’ production of landraces and other traditional varieties.¹⁵³ The recognition of Farmer’s Rights, as currently incorporated in the ITPGRFA, entails

¹⁴⁸ See Helfer, “Regime Shifting,” *supra* note 49 at 36; Oguamanam, “Farmers’ Rights and Food Security”, *supra* note 133; Niels P. Louwaars, “*Sui Generis* Rights: From Opposing to Complementary Approaches” (1998) 36 *Biotechnology and Development Monitor* 13-16.

¹⁴⁹ Michael Blakeney, “International Proposals to Regulate Intellectual Property Rights in Plant Genetic Resources” in Robert Eugene Evenson et al, *The Regulation of Agricultural Biotechnology* (Wallingford: CABI, 2004) 35 at 48.

¹⁵⁰ See Oguamanam, “Farmers’ Rights and Food Security”, *supra* note 133 at 289-291.

¹⁵¹ *Ibid.* at 291-292.

¹⁵² Chidi Oguamanam, “Regime Tension in the Intellectual Property Rights Arena: Farmers’ Rights and Post-TRIPS Counter Regime Trends” (2006) 29 *Dalhousie L J* 413 at 444.

¹⁵³ *Ibid.*

benefits to farmers through “the commercialization of a product” from a biotechnological innovation that utilizes resources stored in the gene banks under the multilateral system.¹⁵⁴

Besides the difficulty of implementing Farmers’ Rights because of ambiguity in the contents and nature of the rights, the ITPGRFA does little to protect TK from biotechnology-related patent claims.¹⁵⁵ During the negotiations for the treaty, for example, a major controversy arose in relation to patents over isolated and purified genes from seeds sourced from the public seed bank established under the treaty.¹⁵⁶ Art. 12. 3 (d) states that “recipients shall not claim any intellectual property or other rights that limit the facilitated access to the plant genetic resources for food and agriculture, *or their genetic parts or components, in the form received* from the Multilateral System.”¹⁵⁷

Developing countries hoped to bar the grant of patents on “inventions” derived from the gene banks through the multilateral system altogether, whereas industrialized countries held that such restriction may violate IP rules in their domestic patent regime and in the TRIPS Agreement.¹⁵⁸ As a result, industrialized countries opted for the

¹⁵⁴ See ITPGRFA, note 47, Chapter 2, at Art. 11; Also, see Anthony Taubman, “Cereal offenders: Access and Equity in Trade Negotiations on Knowledge Resources” in Jay P. Kesan, *Agricultural Biotechnology and Intellectual Property: Seeds of Change* (Oxfordshire: CABI, 2007) at 106.

¹⁵⁵ See Hans Morten Haugen et al, “Food Security and Intellectual Property Rights: Finding the Linkages” in Tzen Wong & Graham Dutfield, *Intellectual Property and Human Development: Current Trends and Future Scenarios* (Cambridge: Cambridge University Press, 201).

¹⁵⁶ Art. 11 of the ITPGRFA provides for “facilitated access to plant genetic resources for food and agriculture” through the establishment of “Multilateral System” in which certain PGRFA listed in a document appended as Annex I are considered “under the management and control of the Contracting Parties and in the public domain.” See also ITPGRFA, note 47, Chapter 2, Art. 12.

¹⁵⁷ ITPGRFA, note 47, Chapter 2, Art. 12.3 (d).

¹⁵⁸ See Borowiak, note 118, Chapter 3, at 532.

prohibition of patents over PGRFA only in the form they are received from the gene banks. The problem for developing countries is that most of them do not have the technological capability to purify or isolate all PGRFAs. As long as a resource is not submitted to the multilateral system in this form, it can be subjected to patent claims in isolated genes and purified DNA.¹⁵⁹ Even when the particular resource is submitted in the form of isolated genes, modern biotechnology has a room for the manipulation and cosmetic alteration of the form to easily establish patents on slight modifications.¹⁶⁰

Art. 13.2 (d) (ii) of the treaty requires that entities that develop a commercial product from genetic resources in the multilateral system must pay into a trust account “an equitable share of the benefits arising from the commercialization of that product.” This requirement has, in some quarters, been construed as a violation of the TRIPS Agreement, as it imposes an additional burden on biotechnology patent applications.¹⁶¹ Most industrialized countries have even failed to contribute to the international fund of the multilateral system, which was considered key to the compensation of farmers in countries from whose sovereign territories genetic resources that yield patents have been acquired.¹⁶²

¹⁵⁹ See Dora Schaffrin et al, *The International Treaty on Plant Genetic Resources for Food and Agriculture - Implications for Developing Countries and Interdependence with International Biodiversity and Intellectual Property Law* IPDEV Work Package 5 (2006) ; South Centre & CIEL, *Intellectual Property and Development: Overview of Developments in Multilateral, Plurilateral, and Bilateral Fora*, IP Quarterly Update (2004).

¹⁶⁰ See Helfer, “Regime Shifting” *supra* note 49 at nn. 179.

¹⁶¹ Borowiak, note 118, Chapter 3.

¹⁶² See Dora Schaffri et. al, *The International Treaty on Plant Genetic Resources for Food and Agriculture – Implications for Developing Countries and Interdependence with International Biodiversity and Intellectual Property Law*, IPDEV Work Package 5, (2006).

For the reasons discussed above, the recognition of Farmers' Rights under the ITPGRFA has less significance in the search for protection for TK in agriculture. The role of Farmer's Rights in the ITPGRFA is minimal, especially when compared to the pre-eminence of IPRs in an influential and enforceable trade agreement like the TRIPS Agreement.¹⁶³

Despite the aforementioned limitations, the recognition of Farmer's Rights in the ITPGRFA has opened the door for contracting parties to the treaty to explore "creative" ways to satisfy the requirements of the ITPGRFA through the protection of TKBAPs in national legislation.¹⁶⁴ The consecutive sessions of the treaty's GB have maintained continuing interest in the modes of implementing Farmers' Rights in national and international legal forums.¹⁶⁵ In terms of the general focus in this thesis, i.e., exploring the modalities of TK protection, the significance of Farmers' Rights to protect TK can be seen in light of the manner in which the ITPGRFA deals with TK.

¹⁶³ Borowiak, note 118, Chapter 3, at 532.

¹⁶⁴ See Oguamanam, "Farmers' Rights and Food Security", *supra* note 133 at 304.

¹⁶⁵ A proposal submitted by Angola on behalf of the G-77/China group in the second session of the GB requested the Secretary to compile views and experiences on implementing Farmers' Rights to be considered for the third session. Noting the small number of submissions, the third session of the GB held in June 2009 adopted a resolution which "recognized the important contribution that local and indigenous communities and farmers make to the conservation and sustainable use of plant genetic resources for food and agriculture" and encouraged Contracting Parties to submit their views and experiences on Farmers' Rights as set out in Art. 9 of the international treaty. See *Summary of the Second Session of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture: Farmers' Rights* (November 2007) 9:410 Earth Negotiations Bulletin at 7; Secretariat of the ITPGR, *Third Session of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture* (Tunis, 1 – 5 June 2009) IT/GB-3/09/Report online: < <ftp://ftp.fao.org/ag/agp/planttreaty/gb3/gb3repe.pdf> > at 8.

The ITPGRFA incorporates the objectives of “conservation and sustainable use of plant genetic resources for food and agriculture.”¹⁶⁶ However, it does not seem to appreciate the role of TK in achieving this, as does the CBD. The ITPGRFA recognizes TK only as “one facet of the preservation of genetic resources for food and agriculture,” not as an independent value that deserves protection of its own.¹⁶⁷ The treaty mentions TK in a sub-article, just as an element of the murky concept of Farmers’ Rights. It even does not seem to recognize the holistic context of TK, as it refers only to the “protection of traditional knowledge relevant to plant genetic resources for food and agriculture,” seemingly neglecting other realms of TK.¹⁶⁸ FAO’s narrow focus may, in fact, be explained by its general mandate to exclusively deal with issues of food and agriculture.

The ITPGRFA has significance in the effort to protect TK systems and practices in agriculture, as it marks the FAO’s shift from CHM to equitable sharing through recognizing Farmers’ Rights. Both the FAO and the CBD expect the utilization of PGRs to be subject to equitable safeguards in the form of multilateral transfer agreements and ABS, respectively. Due to the specific relevance of FAO’s mandate to the narrower theme of analysis in this thesis, the discussion in Section 4.5 below will examine the role of FAO in the protection of TKBAPs in detail.¹⁶⁹

¹⁶⁶ ITPGRFA, note 47, Chapter 2,, Art. 1 (1).

¹⁶⁷ Cottier & Panizzon, note 151, Chapter 1 at 378.

¹⁶⁸ ITPGRFA, note 47, Chapter 2, Art. 9.2 (a).

¹⁶⁹ See discussion below Section 4.5.

As previously noted, the holistic nature of TK raises issues across different regimes that deal with aspects of TK protection within their spheres of concern.¹⁷⁰ The breadth of discussion across the different international regimes marks broad recognition of the relevance of TK in diverse areas of IP law and policy.¹⁷¹ The WTO, WIPO, CBD, and FAO constitute key regimes of international law that seek to protect TK in areas that directly relate to IP law and policy.

The significance of TK is also recognized in other forums that address the protection of TK as part of their mission in specific areas that do not inherently relate to IP law and policy. The following Section provides a brief account of other initiatives aimed at protecting TK in other international law making sites that have little bearing on IP.

4.4 TRADITIONAL KNOWLEDGE IN OTHER REGIMES OF INTERNATIONAL LAW

The major sites of IP law and policy are not the only forums that address the protection of TK at the international level. Equally important in the search for modalities of protecting TK are those international forums that have a mandate of relatively little significance for the development of IP law and policy. The treatment of TK in these forums may be considered incidental to carrying out their principal tasks in the protection of the environment, human rights, health, and labour standards.

¹⁷⁰ See above Section 4.3.

¹⁷¹ Weerawit Weeraworawit, "Formulating an International Legal Protection for Genetic Resources, Traditional Knowledge and Folklore: Challenges for the Intellectual Property System" (2004) 11 *Cardozo J Int'l & Comp L* 769 at 769.

In the field of environmental protection, the *UN Convention to Combat Desertification* (UNCCD) explicitly recognizes the role of TK in ecological protection.¹⁷² The Convention acknowledges that the protection of TK ensures the “systematic observation of land degradation in affected areas and [helps] to understand better ... the processes and effects of drought and desertification.”¹⁷³ Thus, it requires contracting parties to provide mechanisms for “appropriate return from the benefits derived from [traditional knowledge], on an equitable basis and on mutually agreed terms, to the local populations concerned.”¹⁷⁴

The Convention also obliges contracting parties to “protect, integrate, enhance and validate traditional and local knowledge, know-how and practices” in their national framework.¹⁷⁵ The UNCCD Secretariat attempts to facilitate the implementation of this obligation through a compilation of “the most important and widely applied traditional knowledge.”¹⁷⁶ Building upon the result of this compilation, the second session of the Conference of Parties established an Ad-Hoc Panel on TK, which is mandated to “identify successful experiences and conclusions” in the threats and constraints to TK, and to explore strategies for “integrating TK with modern science.”¹⁷⁷ The third session

¹⁷² *United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa*, 17 June 1994, 33 I.L.M. 1328, Art. 16 (g) [Hereinafter, “UNCCD”].

¹⁷³ *Ibid.* at Art. 16 (g).

¹⁷⁴ *Ibid.*

¹⁷⁵ UNCCD, *supra* note 172 at Art. 17 (C).

¹⁷⁶ See UNCCD, *Revitalizing Traditional Knowledge: A Compilation of Documents and Reports from 1997 – 2003* (Bonn: Secretariat of the United Nations Convention to Combat Desertification, 2005) at 12.

¹⁷⁷ *Ibid.* at 105.

of the COP later appointed the second Ad-Hoc Panel “to develop further appropriate criteria” on certain aspects of TK.¹⁷⁸ The Secretariat of the Convention continues to collect “views on how traditional knowledge can contribute” to fulfill the objectives of the Convention.¹⁷⁹

The International Labour Organization (ILO) administers *Convention No. 169* (ILO 169) – a binding international instrument that specifically deals with “the rights of indigenous and tribal peoples.”¹⁸⁰ In a significant improvement to the treatment of indigenous peoples’ rights in earlier international treaties,¹⁸¹ ILO 169 incorporates provisions to ensure the participation of indigenous peoples in projects that affect them, such as the management of their resources and the designing of their educational model.¹⁸² More significant, it recognizes “the distinctive contributions of indigenous and

¹⁷⁸ *Ibid.*

¹⁷⁹ See for example UNCDD Secretariat, *Item 7 of the Provisional Agenda: Traditional knowledge* (Conference of the Parties, Committee on Science and Technology, Seventh session, Nairobi, 18-20 October 2005) ICCD/COP(7)/CST/5.

¹⁸⁰ ILO Convention 169, *International Labor Organization Convention (No. 169) concerning Indigenous and Tribal Peoples in Independent Countries*, 27 June 1989, 28 ILM 1382 (1989), entered into force on 5 September 1991.

¹⁸¹ ILO 169 is a revision of the *Indigenous and Tribal Populations Convention of 1957*, a convention which aims to “raise the standard of living” of indigenous peoples by encouraging the assimilation of indigenous peoples into the dominant national cultures, and by “helping” them to adjust “themselves to modern methods of production and marketing.” See ILO Convention 107, *International Labour Organization Convention (No. 107) concerning the Protection and Integration of Indigenous and Other Tribal and Semi-Tribal Populations in Independent Countries*, 26 June 1957, 328 UNTS 247, 2 June 1959; also see Michael Halewood, “Indigenous and Local Knowledge in International Law: A Preface to Sui Generis Intellectual Property Protection” (1999) 44 McGill L J 953.

¹⁸² *Supra* note 180, Art 31 & Art. 15.

tribal peoples to the cultural diversity and social and ecological harmony of humankind and to international co-operation and understanding.”¹⁸³

Unlike other international conventions (such as the CBD and the UNCDD), ILO 169 does not expressly address the protection of TK.¹⁸⁴ ILO 169 does not offer significant guidance in the search for modalities of TK protection in international law. The Convention has received limited acceptance among states.¹⁸⁵ As a result, it has limited significance in negotiations for the protection of TK. Some indigenous peoples even reject ILO 169, advising their governments not to ratify it; they prefer to “wait until a better, more comprehensive, and philosophically acceptable statement of indigenous peoples’ rights is drawn up.”¹⁸⁶

In the international regime for human rights, a number of UN-based international human rights instruments recognize the importance of protecting TK.¹⁸⁷ In September 2007, the UN General Assembly adopted the *Declaration on the Rights of Indigenous Peoples*, which confirms indigenous peoples’ rights to “maintain, control, protect and

¹⁸³ *Ibid.*, preamble.

¹⁸⁴ Perhaps, ILO 169 makes general statements about the need to take into account “traditional technologies,” and the need to respect “the cultures and spiritual values” as well as “the lands or territories” of indigenous peoples. *Ibid.* Arts. 13, 23 & 27.

¹⁸⁵ Currently, the Convention has been ratified by 20 countries only – mainly in Latin America, Europe and the Asia-Pacific region) see *Protocol to ILO Convention No. 169*, online :< http://pro169.org/?page_id=9>.

¹⁸⁶ Read “Reasons against Ratification” in Catherine J. Iorns, “Australia Ratification of International Labour Organization Convention No.169” (1993) 1 Murdoch University Electronic Journal of Law at 1.

¹⁸⁷ See, for example, *Universal Declaration of Human Rights*, 1948, GA Res. 217(III), UN GAOR, 3d Sess., Supp. No.13, UN Doc. A/810 Art. 27; the *International Covenant on Economic, Social and Cultural Rights*, 19 December 1966, 993 U.N.T.S. 3, Can TS 1976 No. 46, Art.15.

develop” TK.¹⁸⁸ Although the Declaration still uses a narrower definition of “indigenous people,” which is provided under the ILO 169 Convention, it recognizes TK in its “holistic” sense.¹⁸⁹

The World Health Organization (WHO) addresses the protection of TK in the area of health. Established in 1948, the WHO has a mandate for policy and governance in global public health, with the principal objective to ensure the “attainment by all peoples of the highest possible level of health.”¹⁹⁰ The WHO refers to the healing substances and practices in TK as “traditional medicine (TM).”¹⁹¹ So far, it has not actively pursued the protection of TM through a particular legal regime.¹⁹² As can be learned from the first Global Traditional Medicine Strategy that it drafted, and from the different resolutions that WHO adopted as policy guidelines for the use of TM, however, it encourages the integration of TM with modern scientific medicine in states’ domestic medical policies.¹⁹³

Other UN bodies have also paid attention to the protection of TK. At its Eleventh Session in 2004, for example, the United Nations Conference on Trade and Development

¹⁸⁸ See note 105, Chapter 2, Art. 31.

¹⁸⁹ See United Nations, *General Assembly Adopts Declaration on Rights of Indigenous Peoples*, 13 September 2007 online: < <http://www.un.org/News/Press/docs/2007/ga10612.doc.htm>>; see the holistic understanding of TK in the Declaration can be observed from its confirmation that the customary roots of TK are proper instruments to determine its ownership, guardianship, and all aspects of its management. Also, see Oguamanam, “International Law”, note 1, Chapter 1 at 83.

¹⁹⁰ See *Constitution of the World Health Organization*, online: WHO <http://www.opbw.org/int_inst/health_docs/WHO-CONSTITUTION.pdf>

¹⁹¹ See WHO, Traditional Medicine Fact sheet N°134 (2008) online: WHO <<http://www.who.int/mediacentre/factsheets/fs134/en/>>

¹⁹² See Helfer, “Regime Shifting”, *supra* note 49 at 52.

¹⁹³ See WHO, *WHO Traditional Medicine Strategy 2002–2005* (Geneva: World Health Organization, 2002); Also, See Who, Executive Board and World Health Assembly Resolutions on Traditional Medicine, Online: WHO < http://www.who.int/medicines/areas/traditional/trm_assembly_doc/en/index.html >

(UNCTAD) adopted the *Sao Paulo Consensus*, which acknowledges the “lack of recognition of intellectual property rights for the protection of traditional knowledge” as one of the issues of particular interest to developing countries in international trade negotiations.¹⁹⁴ The United Nations Development Program (UNDP) also conducts a range of activities on aspects of legal protection and equitable benefit sharing in the utilization of TK.¹⁹⁵ The UNDP outlined a range of policy options and practical modalities to engage with indigenous peoples in the protection and preservation of their knowledge systems and resources.¹⁹⁶

The discussion so far has dealt with approaches to protect TK in different areas of international law. The discussion of the protection of TK in the major forums of IP, particularly, WIPO and the CBD, has shown a tendency towards a pluralistic approach to addressing the protection needs of ILCs. Whereas the need for a comprehensive system of protection best suited to the practices and values of traditional communities is broadly recognized, there equally is an imperative for diverse mechanisms of protection of TK, each adapted to the nature of the subject matter to be protected. In light of the set of threats and challenges that TK systems and practices face on multiple fronts, the diversity in the approach to TK protection allows for the examination of various instruments, such as GIs, that may have relevance to protect different aspects of TK, depending on the purpose and the context in which the knowledge is practised.

¹⁹⁴ UNCTAD, *São Paulo Consensus*, 25 June 2000, 4TD/410 (Eleventh session São Paulo, 13–18 June 2004), para. 68.

¹⁹⁵ See UNCTAD, *UNDP and Indigenous Peoples: A Practice Note on Engagement* online: <<http://europeandcis.undp.org/files/uploads/Poverty%20reduction/UNDP%20and%20indigenous%20peoples.pdf>>.

¹⁹⁶ *Ibid.*

Before proceeding to the specific focus of the thesis on examining the applicability of GIs to protect TKBAPs, it is important to note that the discussion thus far leaves several questions open. Two are of particular significance to the theme of this thesis and will therefore be briefly addressed in turn: (i) What are the initiatives toward the protection of TKBAPs in international law? (ii) What are the resulting modalities of TK protection from the different regimes in which the subject is explored in international law?

The discussion in the previous two Sections deals with the protection of TK in general. Policy discussion and debates to protect TK in most international regimes do not specifically address the protection of TKBAPs, the focus of this thesis. A specific focus on the legal protection of TKBAPs may seem superfluous, mostly because their protection is implied in the negotiations and discussion for the legal protection of TK in general. However, due to a peculiar set of circumstances that apply to agricultural products, a few efforts that relate to the protection and promotion of TKBAPs are worth highlighting. The discussion in the next Section provides a brief overview of the efforts that have particular relevance to this thesis.

4.5 THE PROTECTION OF TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS

The WTO dealt with the issue of agricultural products in discussion and negotiations within the framework of the Agreement on Agriculture (AoA) that were taking place under the Doha Development Round negotiations.¹⁹⁷ Many developing countries seek the

¹⁹⁷ The Doha Rounds of negotiations on agriculture collapsed on 29 July 2008 over issues of agricultural trade between the United States, India, and China. Since the launch of the Doha Rounds of negotiations, WTO members addressed various aspects of AoA. See Edwini Kessie, “The Doha Development Agenda at a Crossroads: What Are the Remaining Obstacles to the Conclusion of the Round: Part II?” (2011)

inclusion of rules in the AoA to exclude TKBAPs from “global trading rules” so that developing countries are able to achieve food security by retaining their “food production capacity.”¹⁹⁸ Given that most farmers in developing countries rely on TK, developing countries’ demand for special consideration of their agricultural production in the process of negotiating the AoA constitutes one of the strategies for protection of TKBAPs.¹⁹⁹ The inclusion of protective measures for TKBAPs under the AoA is sought as “a step toward validation of TK at WTO.”²⁰⁰ Nevertheless, the Doha rounds of negotiations for measures to protect agricultural production and to facilitate market access for agricultural products from developing countries are currently stalled.²⁰¹ The primary areas of disagreement revolve around the reduction of agricultural subsidies and agricultural

European Yearbook of International Economic Law 403-415; *The Agreement on Agriculture*, 15 April 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, Legal Instruments—Results of the Uruguay Round vol. 31, online: WTO <http://wto.org/english/docs_e/legal_e/legal_e.htm>. In April 2011, the WTO Trade Negotiation Committee released documents that are intended to preserve the agreements already made in the negotiations, and urged Member states to resume talks for technical work to conclude the negotiations. See WTO Trade Negotiation Committee, *Cover Note BY TNC Chair* (21 April 2011) TN/C/13 online: WTO <http://www.wto.org/english/tratop_e/dda_e/chair_texts11_e/chair_texts11_e.htm>.

¹⁹⁸ See for example, WTO, *Agriculture Negotiations, Backgrounder, Developing Countries*, online: <http://www.wto.org/english/tratop_e/agric_e/negs_bkgnd09_develop_e.htm> (restating developing countries’ position that rules of the WTO should be reformed so that “developing countries can support and protect their agricultural and rural development and ensure the livelihoods of their large agrarian populations whose farming is quite different from the scale and methods in developing countries.”

¹⁹⁹ In the negotiations under the AoA, developing countries demand for special consideration to their agricultural products either through “Special and Differential Treatment (S&D)”, a “development box,” or through “overall tariff cuts.” See WTO Committee on Agriculture, Special Session, *Agreement on Agriculture: Special and Differential Treatment and a Development Box*, Proposal to the June 2000 Special Session of the Committee on Agriculture by Cuba, Dominican Republic, Honduras, Pakistan, Haiti, Nicaragua, Kenya, Uganda, Zimbabwe, Sri Lanka and El Salvador, WTO Document G/AG/NG/W/13 of 23 June 2000.

²⁰⁰ See Ernst-Ulrich Petersmann, ed, *Developing Countries in the Doha Round : WTO Decision-making Procedures and Negotiations on Trade in Agriculture and Services* (San Domenico di Fiesole: The Robert Schuman Centre for Advanced Studies, 2005) at 244; Panizzon, note 19, Chapter 3, at 15.

²⁰¹ To read more about “agricultural negotiations” in the context of the Doha Declaration, see Kym Anderson & Will Martin, *Agricultural Trade Reform and the Doha Development Agenda* (Washington D.C.: World Bank Publications, 2006).

tariffs to ensure fair trade and improved market access for developing countries' agricultural products.²⁰²

In the context of IP law and policy, the WTO's TRIPS Council deals with the protection of TKBAPs in its work for extending the existing level of GIs protection for wines and spirits to other agricultural products.²⁰³ As detailed in the next Chapter, the WTO recognizes the protection of agricultural products through GI to be an "outstanding implementation issue" in the Doha rounds of negotiations.²⁰⁴ However, divergent views have continued to characterize the discussions between proponents for the extension of GIs protection to all products and opponents of such protection.²⁰⁵

More than other organizations', the works of FAO specifically focus on the protection of TKBAPs. FAO investigates strategies for protecting traditional agricultural products

²⁰² The disagreement concerns differences between industrialized countries, namely the EU, US and Norway, and developing countries regarding the former group of countries' reduction of farm subsidy to local agricultural production and tariffs on agricultural imports from developing countries. See Aaditya Mattoo & Arvind Subramanian, "From Doha to the Next Bretton Woods - A New Multilateral Trade Agenda" (2009) 88 *Foreign Aff* 15; Thomas W. Hertel et al, "Why Isn't the Doha Development Agenda More Poverty Friendly?" (2009) 23 *Review of Development Economics* 543-559; Kym Anderson, Will Martin & Ernesto Valenzuela, *The Relative Importance of Global Agricultural Subsidies and Market Access* (New York: World Bank, 2006).

²⁰³ See Chapter 1 Section 1.6 above, and Chapter 5 Section 5.4.1, below, for discussion about existing level of protection for GIs.

²⁰⁴ WTO Ministerial Conference, *Ministerial Statement*, Fifth Session, Cancún, 10-14 September 2003, adopted 14 September 2003; See discussion in Chapter 5 Section 5.4.2. This was also confirmed in the Hong Kong Ministerial Declaration of 2005. See WTO Ministerial Conference, *Doha Work Programme Ministerial Declaration*, Sixth Session, Hong Kong, 13 - 18 December 2005, Adopted on 18 December 2005, para. 39.

²⁰⁵ According to the report of the WTO Director-General, WTO Members continue to diverge on consultations for extending to other products the higher level of protection for geographical indications beyond wines and spirits. See General Council Trade Negotiations Committee, *Issues Related to the Extension of the Protection of Geographical Indications Provided for in Article 23 of the TRIPS Agreement to Products other than Wines and Spirits and those Related to the Relationship Between the TRIPS Agreement and the Convention on Biological Diversity*, Report by the Director-General, WT/GC/W/633 TN/C/W/61, 21 April 2011, para. 17.

through mechanisms for preserving the role of these products in rural development.²⁰⁶ In terms of policy, FAO addresses the protection of TKBAPs, mainly in the context of food security. In 2009, for example, the FAO sponsored a panel discussion in which it considered the extent to which the potential protection of agricultural products through GIs can contribute to increased rural incomes and improved food security.²⁰⁷

Returning to the protection of TKBAPs, it is worth noting that the discussion of TK protection in different forums of international law-making has relevance to the specific focus of this thesis because, in general, protection of TKBAPs is implied in all initiatives to protect TK. The FAO engages with the issue of TKBAPs more thoroughly than other organizations. The FAO seeks the protection of TKBAPs in the context of satisfying the food security needs of rural communities. In this respect, the role of GIs to protect TKBAPs can be best understood in light of their contribution to the achievement of food security.²⁰⁸ The discussion below looks into FAO's interest in the use of GIs to protect agricultural products.²⁰⁹

Before proceeding further into the subject of GIs, and before examining their role as a means of protecting TKBAPs, it is pertinent to identify the dominant modalities and variants of proposals to protect TK in general. A wide variety of modalities for TK

²⁰⁶ See FAO, *The State of the World's Plant Genetic Resources for Food and Agriculture: Second Report* (Rome: FAO, 2010).

²⁰⁷ See Hajnalka Petrics & Richard Eberlin, eds, *Global Food Security – A Global Challenge for Politics and Industry* (Forum International Green Week – Technical Forum, 16 January 2009, Berlin, Germany).

²⁰⁸ See Chapter 3 Section 3.3.3, above, for discussion of the concept of food security in the context of traditional agricultural production; also see Chapter 6 Section 6.6, below, for discussion on the role of GIs in achieving food security.

²⁰⁹ See Section 4.8, below.

protection has emerged in the course of discussion and negotiations in different regimes of international law, and in academic discourse. The significance and effectiveness of GIs to protect TKBAPs can be established through a comparison of the different modalities in their responsiveness to the need and desire of ILCs to participate in the global economy. The following Section identifies and evaluates the advantages and major drawbacks of the different methods for protecting TK and TKBAPs.

4.6 APPROACHES AND MODALITIES FOR PROTECTING TRADITIONAL KNOWLEDGE

The initiatives in the various forums reviewed in previous Sections indicate that the need to protect TK has become evident in present times more than at any other time. Though the range of policy discussion and proposals in the various forums stem from diverse philosophical backgrounds, all aspire to achieve the protection of TK, albeit through varied approaches and in different forms. The extent, nature, and effectiveness of TK protection vary in each of the proposals

This Section identifies and evaluates legal mechanisms that are widely accepted in the various frameworks of legal and policy initiatives to protect TK: Access and Benefit Sharing and Disclosure of Origin schemes; TK Register and TK Digital Library Models; *Sui Generis* Models of Protection; and Modes of Protection under Current Intellectual Property Regime.

4.6.1 ACCESS AND BENEFIT SHARING AND DISCLOSURE OF ORIGIN

Access and Benefit Sharing (ABS) and Disclosure of Origin (DO) strategies have gained wide acceptance in most forums where the protection of TK is sought.²¹⁰ ABS is a system established by the CBD to regulate the conditions for access to and use of genetic resources and the sharing of benefits from their utilization with ILCs.²¹¹ The ABS system aims to contribute to the conservation of biological diversity and the sustainable use of its components through the fair and equitable sharing of the benefits arising from the utilization of genetic resources and associated TK.²¹²

As previously discussed, the ABS system has its basis in the recognition, under the CBD, of the need to reward the contribution of ILCs to the maintenance of traditional life styles which the CBD considers essential to conserve and sustainably use biological diversity.²¹³ To realise the objective of incentivizing ILCs for the purpose of conservation, Art. 15 of the CBD lays down principles upon which the system of ABS is established.

²¹⁰ Attempts to introduce ABS and DO requirements as a means of protecting TK in the WTO are currently on hold on the ground that “once a model is in place[in the WIPO Intergovernmental Committee and the CBD], attention can then be focused on how and to what extent the protection of traditional knowledge can be included in the TRIPS Agreement.” See EC, *Review of the Provisions of Art. 27.3(b) of the TRIPS Agreement: Communication from the European Communities and their Member States*, 13 June 2001, IP/C/W/254; India’s Submission to the WTO Committee on Trade and Environment, *Protection of Biodiversity and Traditional Knowledge the Indian Experience*, 14 July 2000, WT / C T E /W/ ~I~P~/C/ W/198; Communication from Brazil to the WTO TRIPS Council, *Review of Art. 27.3(b)*, 24 November 2000, IP/C/W/228; Communication from Mauritius on behalf of the African Group to the WTO TRIPS Council, *Review of the Provisions of Art. 27.3(b)*, 20 September 2000, IP/C/W/206.

²¹¹ See CBD, *Access and Benefit-sharing Factsheet* (Montreal: Secretariat of the Convention on Biological Diversity, 2010); Chidi Oguamanam, “Genetic Resources, Access and Benefits Sharing: Politics, Prospects and Opportunities for Canada after Nagoya” (2011) 22:2 *Journal of Environmental Law and Practice* 87 at 92-94.

²¹² See Nagoya Protocol, *supra* note 115, preamble, Art.1.

²¹³ See discussion of the evolution of the ABS system in the institutional process of CBD above, Section 4.3.3; also CBD, note 1, Chapter 2, preamble, para. 12, Art. 15, Art. 8(j).

The major ones include the recognition of the sovereign rights of States over their natural resources, the requirement for users of genetic resources to obtain PIC, the conclusion of mutually agreed terms between users and providers, and finally, the grant of access to genetic resources for environmentally sound uses. Similarly, Art. 8 (j) of the CBD states the relevance of an ABS system as it relates to TK associated with genetic resources.

Following the establishment of the WG and the WG-AB for the implementation of Art. 8 (j) and Art. 15 of the CBD, respectively, the ABS system has developed in the course of negotiations that led to the conclusion of the Bonn Guidelines in 2002, and the Nagoya Protocol in 2010.²¹⁴ The Bonn Guidelines served as a reference for a number of regional and national initiatives to implement ABS mechanisms.²¹⁵ The Nagoya Protocol aims to further facilitate the implementation of ABS by providing a strong basis for greater legal certainty and transparency.²¹⁶

To reconcile the objectives of the CBD with the TRIPS Agreement through the implementation of ABS arrangements, the ABS system is linked with the obligation to disclose the origin of biological resources and accompanying TK in applications for IP protection.²¹⁷ The term disclosure of origins has its basis in reference to “country of

²¹⁴ See brief description of the evolution and contents of the Bonn Guidelines and the Nagoya Protocol, above, Section 4.3.3.

²¹⁵ Following the adoption of the Bonn Guidelines, a number of national ABS systems have emerged in national jurisdictions. Presently, there are at least 53 national and six regional ABS initiatives. See CBD ABS Measures Search Page online: CBD < <http://www.cbd.int/abs/measures/>>.

²¹⁶ See Nagoya Protocol, *supra* note 115, introduction, preamble & Art. 6 (3) (a).

²¹⁷ See “Role of intellectual property rights in the implementation of access and benefit-sharing arrangements” in COP, *Draft Elements for an Action Plan for Capacity-Building for Access to Genetic Resources and Benefit-Sharing*, COP 6 Decision VI/24 (Sixth Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity, the Hague, 7 - 19 April 2002); CBD, *Interrelation of Access to Genetic Resources and Disclosure Requirements in Applications for Intellectual Property Rights:*

origin” in the CBD.²¹⁸ Although it is difficult in most cases to trace the exact physical origin of a biological resource, the requirement is generally understood as disclosure of the “source” of the biological material and TK in patent applications.²¹⁹

Proposals in the CBD process for mandatory requirement of DO in patent claims based on TK and underlying genetic resources have encountered opposition from industry representatives on the ground that such an obligation would be a violation of the TRIPS Agreement.²²⁰ For this reason, DO remained an integral part of the ABS system only as voluntary mechanism.²²¹ In this sense, DO requirements serve as bases for ABS arrangement between TK holders and patent claimants that access the genetic resources.²²²

Report of the World Intellectual Property Organization (WIPO), Note by the Executive Secretary, (Conference of the Parties to the Convention on Biological Diversity, Eighth meeting, Curitiba, 20–31 March 2006, Item 17 of the Provisional Agenda); *Submission by Brazil on behalf of the delegations of Brazil, China, Cuba, Dominican Republic, Ecuador, India, Pakistan, Thailand, Venezuela, Zambia and Zimbabwe*, IP/C/W/356, 24 June 2002; Joint Communication from the African Group, “Taking Forward the Review of Article 27.3(b) of the TRIPS Agreement,” IP/X/W/404, June 26, 2003.

²¹⁸ See CBD, note 1, Chapter 2, preamble, para. 11; Art. 2, para. 4; Art. 9 (a) & (b).

²¹⁹ See International Seed Federation, *Disclosure of Origin in Intellectual Property Protection Applications* (Position Paper, Ad Hoc Open-Ended Working Group on Access and Benefit Sharing, Third meeting, Bangkok, 14-18 February 2005) UNEP/CBD/WG-ABS/3/INF/3 at 3.

²²⁰ See CBD, *Analysis of Options for Implementing Disclosure of Origin Requirements in Intellectual Property Applications*, UNEP/CBD/WG-ABS/4/INF/2 22 December 2005 (Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing, Fourth meeting, Granada, 30 January-3 February 2006, Item 8 of the provisional agenda) at 3 ff.; also Valentina Tejera, “Tripping over Property Rights: Is it Possible to Reconcile the Convention on Biological Diversity with Article 27 of the TRIPS Agreement?” (1999) 33 *New Eng L Rev* 967.

²²¹ Bonn Guidelines, *supra* note 113, Art. 16 (d) (ii).

²²² See CBD, *Report of the Ad Hoc Open-Ended Working Group on Access and Benefit Sharing on the Work of its Third Meeting* (Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing Third Meeting, Bangkok, 14-18 February 2005)..

The CBD's ABS system has received significant attention in other international forums, such as the WTO, WIPO, and FAO. In an effort to reconcile the objectives of the CBD with the TRIPS Agreement in the WTO, developing countries have proposed an amendment to conditions on patent applicants under Art. 29 of the TRIPS Agreement.²²³ According to these countries' proposal, such amendment would require patent applicants to disclose the country of origin of genetic resources and TK implicated in a proposed patent, provide evidence of "prior informed consent" of ILCs, and prove the conclusion of "fair and equitable" ABS arrangement.²²⁴

Despite the lack of progress in efforts to incorporate ABS models in the WTO,²²⁵ the activities of the WIPO's IGC in the area of genetic resources have generally focused on developing ABS arrangements in consultation with the CBD's WG-AB.²²⁶ FAO's

²²³ See Mauritius, *Review of the Provisions of Article 27.3(b): Communication from Mauritius on behalf of the African Group* (20 September 2000) IP/C/W/206; Brazil, *Review of Article 27.3(b) - Communication from Brazil* (24 November 2000) IP/C/W/228; India, *Communication from India* (12 July 2000) IP/C/W/195; see also Carlos M. Correa, *The Politics and Practicalities of a Disclosure of Origin Obligation*, Quaker United Nations Office Occasional Paper 16 (2005).

²²⁴ Mauritius, *ibid.* See also WTO, Council for Trade-Related Aspects of Intellectual Property Rights, *Additional Comments by Switzerland on its Proposals Submitted to WIPO Regarding the Declaration of the Source of Genetic Resources and Traditional Knowledge in Patent Applications, Communication from Switzerland*, WTO Document IP/C/W/324 of 14 June 2004, pp. 1-2; WTO, Council for Trade-Related Aspects of Intellectual Property Rights, *Communication from the European Communities and their Member States, Review of Article 27.3(b) of the TRIPS Agreement, and the Relationship between the TRIPS Agreement and the Convention on Biological Diversity (CBD) and the Protection of Traditional Knowledge and Folklore, "A Concept Paper"* WTO Document IP/C/W/383 of 17 October 2002; also see GRAIN, "Elements of the Obligation to Disclose the Source and Country of Origin of Biological Resource and/or TK Used in an Invention", online: Grain < <http://www.grain.org/rights/tripsreview.cfm?id=62>>.

²²⁵ For discussion of efforts to incorporate the CBD's ABS model in the WTO, see text accompanying note 60, above. Also, see G. Kristin Rosendal, "The Convention on Biological Diversity: Tensions with the WTO TRIPS Agreement over Access to Genetic Resources and the Sharing of Benefits" in Sebastian Oberthür & Thomas Gehring, *Institutional Interaction in Global Environmental Governance: Synergy and Conflict among International and EU Policies* (Cambridge: MIT Press, 2006).

²²⁶ See discussion above, text accompanying note 85; also see WIPO, *Examination of Issues Regarding the Interrelation of Access to Genetic Resources and Disclosure Requirements in Intellectual Property Rights Applications* (Transmitted to the Conference of Parties of the Convention on Biological Diversity by the decision of the General Assembly at its Thirty-Second Session, September 26 to October 5, 2005) online: WIPO <http://www.wipo.int/tk/en/laws/pdf/examination_of_issues.pdf>

CGRFA also focuses on ABS mechanisms as modalities for guaranteeing benefits to traditional farming communities with regard to biotechnology patents, especially those deriving from biological resources for food and agriculture.²²⁷ In general, therefore, the ABS system has attracted considerable attention in international law-making in the area of genetic resources and associated TK. Doubts remain, however, as to the effectiveness of ABS system in the protection of TK – in the form it is currently recognized – for the following reasons.

The systems of ABS relies on voluntary contracts that regulate access and use of genetic resources in patent claims over “inventions” that have already utilized TK.²²⁸ The requirement of ABS arrangement as a basis for contractual arrangements, rather than as part of requirements in applications for patents, leaves the existing IPRs system intact. At best, the successful conclusion of ABS arrangement makes the existing IPRs regime more transparent, fair, and equitable.²²⁹ In this case, the system of ABS falls short of satisfying demands to accommodate TK through reform of the IPRs system.²³⁰

The model of ABS is based on the reasoning that TK holders will be incentivized to preserve and conserve biodiversity resources through contractual sharing of benefits,

²²⁷ See discussion above, text accompanying note 146; also see FAO, *The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture* (Rome: Commission on Genetic Resources for Food and Agriculture, 2010) at 165 ff.

²²⁸ The system of voluntary contracts is chosen instead of the stronger demand by developing countries that the TRIPS Agreement be amended to require patent applicants as a condition to patentability: 1) the source of any genetic material used in a claimed invention; 2) any related TK used in the invention; 3) evidence of PIC from the competent authority in the country of origin of the genetic material; and 4) evidence of fair and equitable benefit sharing.

²²⁹ Coombe, “Recognition”, note 314, Chapter 2, at 6.

²³⁰ See Sections 4.6.2, 4.6.3, 4.6.4 & 4.6.5 below, for discussion of other approaches to TK protection; also see *ibid.*

which would be derived from private individuals' patent rights over "inventions" that utilize genetic resources and associated TK. The CBD aims to achieve the goals of "efficiency and equity" in the conservation of biodiversity through "a contractual bilateral market form of regulation" of an ABS arrangement between "holders" of genetic resources and users (mostly corporations in the life sciences industry).²³¹ In effect, the CBD adopts classical economic assumptions regarding the nature of conservation, and the preferability of private property regimes to systems of "common property."²³² The CBD's focus on economic benefits through individuals' establishment of IP rights on genetic resources and TK may increase TK's commercialization and inevitably, its high utilization.²³³ In effect, this runs contrary to the very purpose of "conservation and sustainable use of biological diversity" that the CBD intends to pursue.²³⁴

In practice, ABS arrangements may not guarantee the prior informed consent of the community before access, especially in trans-jurisdictional situations. Developing country negotiators mention that the ABS system does not address the situation where the use of genetic resources and TK might take place without the authorization of the competent

²³¹ Noah Zerbe "Biodiversity, Ownership, and Indigenous Knowledge: Exploring Legal Frameworks for Community, Farmers, and Intellectual Property Rights in Africa" (2005) 53 *Ecological Economics* 493 at 500.

²³² The CBD refers to ILCs as "holders" of TK, and as such, it does not guarantee ILCs' ownership of TK. See CBD, note 1, Chapter 2, Art. 8 (j); Nagoya Protocol, *supra* note 115, preamble, para. 24; see Zerbe, *ibid.*

²³³ See Rosemary J. Coombe, Steven Schnoor & Mohsen Ahmed, "Bearing Cultural Distinction: Informational Capitalism and New Expectations for Intellectual Property" (2007) 40 *UC Davis L Rev* 891

²³⁴ See CBD, note 1, Chapter 2, preamble.

authority in the country of origin, before the conclusion of any contract.²³⁵ Although this may violate the country of origin's domestic ABS legislation, there is nothing that can be done once the resource is used outside that jurisdiction.²³⁶ In such cases, the ABS system may not prevent access if the research does not result in a patent.

In addition, most ILCs lack the bargaining power to undergo careful and meticulous process of contract negotiation on equal terms with multinational corporations.²³⁷ In such cases, the resulting contracts may not serve the interests of ILCs. Even if the contracts serve the best interests of ILCs, most of them lack organizational and institutional mechanisms that are necessary to follow up and to enforce the conditions of the contract. Their respective governments are best suited to address these gaps, but in a developing country where most ILCs are found, lack of administrative support and human expertise may make it difficult to accomplish such a mission. For example, detecting the use of genetic resources in a patent claim can be prohibitively time-consuming and costly, which the competent authority in a country of origin might not be able to accomplish.²³⁸

²³⁵ WTO Secretariat, *The Relationship Between the TRIPS Agreement and the Convention on Biological Diversity: Summary of Issues Raised and Points Made*(Council for Trade-Related Aspects of Intellectual Property Rights, 8 August 2002) IP/C/W/368 online: <www.wtocommerce.org/tw/SmartKMS/fileviewer?id=25636>, para. 24.

²³⁶ See Blakeney, "Food Security", note 134, Chapter 1, at 108.

²³⁷ Santiago Carrizosa, *Accessing Biodiversity and Sharing the Benefits: Lessons from Implementing the Convention on Biological Diversity* (Gland: IUCN, 2004).

²³⁸ See note 30, Chapter 3, at 372; also note 43, Chapter 2, nn. 62 (noting that ABS arrangements have "proved ineffective in developing countries that lacked the means to install national registration systems, obtain patents, or oppose the patents of others on relevant TK").

In addition, ABS strategies do not out-rightly prohibit the filing of patents on TK that may have significant spiritual and cultural value to ILCs.²³⁹ Most ILCs oppose any form of commercialization of genetic resources and TK that have spiritual or cultural characters.²⁴⁰ The Nagoya Protocol seems to acknowledge this in its requirement that contracting parties “take into consideration indigenous and local communities’ customary laws, community protocols and procedures” in the ABS process.²⁴¹ However, this obligation is subject to requirements in domestic law.²⁴²

Lastly, and of particular relevance to understanding the significance of GIs, is the criticism that the “access” aspect of the “access and benefit sharing” principle has only been concerned with securing access to the TK and biological resources in developing countries.²⁴³ The ABS system does not deal with mechanisms by which TK-based

²³⁹ Coombe, “Recognition”, note 314, Chapter 2, at 286.

²⁴⁰ See Gregory K. Schlais, “The Patenting of Sacred Biological Resources, the Taro Patent Controversy in Hawai’i: A Soft Law Proposal” (2003) 29 U Haw L Rev 581; Christine Haight Farley, “Protecting Folklore and Indigenous Peoples: Is Intellectual Property the Answer?” (1997) 30 Connecticut Law Review 14-15 (arguing that a divergence of interest exists among indigenous peoples between the “realist group” who want to be compensated for their contribution, and the “traditional group” who want to “prevent the cultural or psychological harm caused by the unauthorized use of their arts.”)

²⁴¹ Nagoya Protocol, *supra* note 115, Art. 12. The Nagoya protocol provides that “Parties *shall in accordance with domestic law* take into consideration indigenous and local communities’ customary laws, community protocols and procedures, as applicable, with respect to traditional knowledge associated with genetic resources.”

²⁴² See *ibid.*

²⁴³ For this line of arguments, see Cottier & Panizzon, note 151, Chapter 1 at 376 (arguing that the ABS “does not guarantee that a TK-derived good can effectively enter an industrialized country market.”)

products may acquire better access in developed countries.²⁴⁴ Nor does ABS guarantee access to technology for the developing countries as provided in the CBD.²⁴⁵

The criticism of an ABS system based on the need to promote market access for TK-based products is of particular significance to this study in light of the challenges that TKBAPs face in global markets.²⁴⁶ The ABS model may be developed to suit the particular needs of ILCs to participate in the “commercialisation” of their resources on their own terms. The ABS model is used in some variations of fair trade initiatives as evidenced, for instance, in the activities of the Union for Ethical Biotrade.²⁴⁷ Some commentators advocate the complementary use of IP rights as a means of ensuring better compliance with ABS arrangements.²⁴⁸ GIs may serve as useful IP rights suited to the protection of TK that may create better negotiating advantages for ABS arrangements in the use and exploitation of biodiversity. The question of how far GIs, as IP instruments, help to achieve the goal that the ABS system is meant to serve is considered in Chapter Six.²⁴⁹

²⁴⁴ For this line of argument, see Cottier & Panizzon, note 151, Chapter 1 at 376.

²⁴⁵ See for example, Art. 16 of the CBD which deals with “Access to and Transfer of Technology”, note 2, Chapter 2.

²⁴⁶ See Chapter 3 Section 3.4, above.

²⁴⁷ Union for Ethical Biotrade is a non-profit association that engages in “the fair and equitable sharing of benefits derived from the use of biodiversity” by promoting company practices for the “Sourcing with Respect of ingredients that come from native biodiversity.” See Union for Ethical BioTrade, *Towards Sourcing with Respect* online: Sourcing with Respect <http://www.ethicalbiotrader.org/dl/UEBT_Profile-2011.pdf>.

²⁴⁸ See Cottier & Panizzon, *supra* note 151 at 396; see also note 83, Chapter 2; Gervais, “Spiritual”, note 6, Chapter 3; Robert K. Paterson & Dennis S. Karjala, “Looking Beyond Intellectual Property in Resolving Protection of the Intangible Cultural Heritage of Indigenous Peoples” (2003) 11 *Cardozo J of Int’l & Comp L* 633.

²⁴⁹ See below Chapter 6 Section 6.5.

Despite the aforementioned criticisms, TK protection through ABS remains popular in national and international legal frameworks. The idea of incorporating mandatory DO requirements in patent applications is also championed in most forums. The Section briefly looks at another modality of TK protection that has received attention in international forums, namely, the idea of Community Registers of Traditional Knowledge and a Traditional Knowledge Digital Library.

4.6.2 REGISTERS AND TRADITIONAL KNOWLEDGE DIGITAL LIBRARY MODELS

Introduced in the discussion and negotiation processes in the CBD, community registers of TK are registries of traditional uses of genetic materials. Each is designed to facilitate the identification of acts of exploitation of TK in future patent claims.²⁵⁰ The creation of these registries would also create a field of “prior art” that may be used to challenge patents claims that utilize TK.²⁵¹

²⁵⁰ See COP, *Report of the First Meeting of the Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(J) and Related Provisions of the Convention on Biological Diversity*, UNEP/CBD/COP/5/5 (First Meeting of the Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(j) (WG8J 1), Seville, 27 - 31 March 2000); also see COP, “Decision V/16 Adopted at the Fifth Meeting of the Conference of the Parties to the Convention on Biological Diversity: Article 8(j) and Related Provisions” COP 5 Decision V/16, Para. 17; also see WIPO, *Progress Report on the Status of Traditional Knowledge as Prior Art* (Prepared for the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Second Session, Geneva, 10 -14 December 2001) Doc. WIPO/GRTKF/IC/2/3, para. 118.

²⁵¹ CBD Executive Secretary, “Assessment of the Effectiveness of Existing Subnational, National and International Instruments, Particularly Intellectual Property Rights Instruments, that may have Implications on the Protection of the Knowledge, Innovations and Practices of Indigenous and Local Communities” (Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(J) and Related Provisions of the Convention on Biological Diversity, Second Meeting, Montreal, 4–8 February 2002) Item 7 of the Provisional Agenda, UNEP/CBD/WG8J/2/7, para. 7.

Similar to the community registry system, India initiated a system of TK Digital Library (TKDL) as an option to facilitate the protection of TK.²⁵² TKDL is a defensive anti-appropriation tool which makes Indian TK available in digital form so that it will be accessible to patent offices all over the world. These offices are expected to consider information in the TKDL as indicative of “prior arts” in future patent claims.²⁵³ The defensive feature of the TKDL system is strengthened by the imposition of a restrictive obligation on those who legitimately possess the database and are in a position to make it accessible to third parties.²⁵⁴ The TKDL system has received growing interest worldwide in recent times.²⁵⁵

The TKDL model is not without its problems. A major practical problem with the TKDL and registry approaches is that once the basic information is included in a registry or database, individuals may claim patent rights based on minimal changes on the information or the genetic material in the list.²⁵⁶ In the words of Long, “if indigenous groups register the practices, works, etc., that they do not want the public to use, those are

²⁵² Vinod Gupta, “India’s TKDL: definition and classification of intangible cultural heritage and traditional knowledge in the context of inventory making,” in Toshiyuki Kono, ed., *Intangible Cultural Heritage and Intellectual Property: Communities, Cultural Diversity and Sustainable Development* (Antwerp: Intersentia, 2009).

²⁵³ See Yu, note 35, Chapter 2, at 493.

²⁵⁴ Chidi Oguamanam, “Patents and Traditional Medicine: Digital Capture, Creative Legal Interventions, and the Dialectics of Knowledge Transformation” (2008) 15 *Indiana Journal of Global Legal Studies* 489 at 501 [Oguamanam, “Digital Capture”].

²⁵⁵ The website India Together reports that after the Indian experience with TKDL, many countries such as Iran, South Korea, Thailand, Magnolia, Cambodia, South Africa, Nigeria, Pakistan, Nepal, Sri Lanka and Bangladesh have shown interest in setting up similar ones for their own traditional knowledge. See Ramesh Menon “Traditional Knowledge Receives a Boost” (13 January 2007) online: India together < <http://www.indiatogether.org/2007/jan/eco-tkdl.htm> >; Yu, note 35, Chapter 2.

²⁵⁶ Ikechi Mgbеoji, “Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio Piracy?” (2001) 9 *Ind J Global Legal Stud* 163 at 172.

precisely what end up being the first items to be commercialized by third parties.”²⁵⁷
Thus, the TKDL system may even worsen the problem of biopiracy.²⁵⁸

Conceptually, Yu identifies three problems with the systems of registry and TKDL. First, given the “dynamic, fluid, and constantly evolving” features of TK, these systems are ill suited to the very idea of TK “as a process.”²⁵⁹ Referring to the “traditional knowledge databases” established pursuant to the 2003 UNESCO Convention, he remarks – in agreement with Scafidi – “mechanisms such as national inventories speak to the warehousing rather than the evolution of living culture.”²⁶⁰ Second, it is difficult to develop an inventory of TK because “not all traditional knowledge can be expressed in a fixed form.”²⁶¹ Third, due to secrecy intrinsic to some categories of TK, particularly those connected to spirituality, “not all [TK-based] works should be identified; works that are sacred or intended to be kept secret are usually off limits.”²⁶² Moreover, the

²⁵⁷ Doris Estelle Long, “Traditional Knowledge and the Fight for the Public Domain” (2006)5 J Marshal L Rev Intell Prop L 317 at 327.

²⁵⁸ See Chidi Oguamanam, “Documentation and Digitization of Traditional Knowledge and Intangible Cultural Heritage: Challenges and Prospects” in Toshiyuki Kono, ed, *Intangible Cultural Heritage and Intellectual Property: Communities, Cultural Diversity and Sustainable Development* (Antwerp: Intersentia, 2009) 357-383.

²⁵⁹ See Yu, note 35, Chapter 2, at 493.

²⁶⁰ *Ibid.*

²⁶¹ *Ibid.* quoting Chidi Oguamanam, *International Law and Indigenous Knowledge: Intellectual Property, Plant Biodiversity, and Traditional Medicine* (Toronto: University of Toronto Press, 2006).

²⁶² *Ibid.*; also see Josep-Maria Mallarach, *Protected Landscapes and Cultural and Spiritual Values* (Heidelberg: Kasperek Verlag, 2009).

identification, cataloguing, and digitalization of TK may be too expensive to be considered in most developing countries.²⁶³

4.6.3 SUI GENERIS MODALITIES OF TRADITIONAL KNOWLEDGE PROTECTION

Sui generis modalities of protecting TK have widely been suggested in the various forums of international law as convenient models due to the generally held view that existing and proposed models of knowledge protection are inherently in conflict with TK systems.²⁶⁴ The *sui generis* option to protect TK includes numerous approaches, each with its own complex conceptual and practical implications.²⁶⁵

One of the prominent proposals among the *sui generis* variation is referred to as the “defensive community patent” system.²⁶⁶ Given the historical flexibility in the criteria for patentability in IP law, this idea recognizes that the system of IP may “creatively” be

²⁶³ See Shalini R. Urs, *Digital Libraries: The Road Ahead* (Inflibnet Centre, February 8, 2007) online: Caliber < http://www.vidyanidhi.org.in/shaliniurs_files/caliber.pdf >.

²⁶⁴ See Chapter 3 Section 3.2.2.2, above, for discussion of the inconsistency between IPRs systems and TK; see also Michael Halewood, “Indigenous and Local Knowledge in International Law: A Preface to Sui Generis Intellectual Property Protection” (1999) 44 McGill L J 953; Dan Leskien & Michael Flitner, *Intellectual Property Rights and Plant Genetic Resources: Options for A Sui Generis System* (Rome: Biodiversity International, 1997).

²⁶⁵ For example, Dutfield identifies five major approaches within the ambit of *sui generis*: 1) community intellectual rights and collective rights to prevent usurpation of TK by foreign interests; 2) intellectual property rights for communities (versus individual innovators); 3) modified plant variety protection (to include community or Farmers’ Rights funds based on royalties on protected seeds, grace periods for filing on protected seeds, and exclusion of certain farmer-controlled plant varieties); 4) comprehensive biodiversity legislation governing access, biosafety, intellectual property rights and communal rights; and 5) sectoral community rights regimes for specific categories of biodiversity (e.g. IPRs for medicinal plants and associated indigenous knowledge systems) — a pragmatic approach concentrating on specific areas that need to be addressed, without excluding any attempt to implement a broader legislation. See Graham Dutfield, *Intellectual Property Rights, Trade, and Biodiversity: Seeds and Plant Varieties* (London: Earthscan, 2000) at 79

²⁶⁶ See, Ikechi Mgbeoji, “Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio Piracy?” (2001) 9 Ind J Global Legal Stud 163; see also James D. Nason, “Traditional Property and Modern Laws: The Need for Native American Community Intellectual Property Rights Legislation” (2001) 12 Stan L & Pol’y Rev 255;

modified to provide protection to the knowledge systems of ILCs.²⁶⁷ The “defensive community patent” model favours the recognition of a strong system of IP that is suited to the salient features of TK in the use of biological resources.²⁶⁸ As owners of IP rights, ILCs would be in a position to prevent third parties’ establishment of IP rights over their resources. The legal effect of the use of TK without ILCs’ consent would, in this case, be considered an infringement of legally recognized property rights in the IP regime.

As effective and efficient the community patent model sounds, it can be challenging to incorporate it into existing regimes of international law. Given the limited role of ILCs in international law-making, it is unlikely for industrialized country negotiators to allow a compromise that accommodates TK in a manner suggested under this approach. The stakes are high for industrialized countries – for which IPRs-based products constitute the largest share of exports²⁶⁹ – to recognize robust property rights in the form of communal patent protection for TK. It can be difficult to strike a balance between the rights of ILCs under a communal patent system and the needs of multinational companies who are desperate to find replacements for their patents on profitable drugs and agro-technology products that are set to expire after two decades of the TRIPS Agreement’s enforcement. Even if successful, the defensive nature of the proposed protection may not appeal to the interest of ILCs who may want to capture and control the economic value of their

²⁶⁷ See the most extensive outline of this proposal in Mgbeoji, “Global Biopiracy,” note 22, Chapter 1.

²⁶⁸ Among others, Mgbeoji explains how this system overcomes hurdles that limit the applicability of IP to TK, such as the legal personality of communities. See *ibid.*

²⁶⁹ The World Bank reports that countries that became richer over the last 30 years were those that mostly export IP-based products. See World Bank, *Trading on Your Intellect*, online: You Think Issues <<http://youthink.worldbank.org/issues/trade/intellect.php>>; see also discussion in Chapter 3 Section 3.5, above.

knowledge to fairly participate in the global economy and to satisfy their socio-economic needs.

Another *sui generis* option looks to culture specific protocols that need to be developed from the customary roots of TK.²⁷⁰ This option, as Bowrey explains, proposes protective modalities for TK through “an investigation of the practical uses of private law at the community level for the protection of custom.”²⁷¹ Fuelled by “disappointing” efforts to protect TK that often yield “compromised and limited” results in international and national law-making efforts to protect TK, this approach calls for the consideration of protective tools that are based on modalities and elements compatible with TK’s inherent characteristics and history.²⁷² This variation of *sui generis* modality is essentially premised on the notion that an adequate protection of TK cannot be guaranteed even by incorporating new elements of IPRs because “structurally many traditional societies do not respond to the western system, but have their own methods of economic, political, social, and cultural articulation.”²⁷³

In its submission to WIPO, for example, the Indigenous Peoples Council on Biocolonialism (IPCB) notes that:

²⁷⁰ See Kathy Bowrey, “Alternative Intellectual Property? Indigenous Protocols, Copyleft and New Juridifications of Customary Practices” (2006) *Macquarie Law Journal* 65; Oguamanam, “Localizing”, note 1, Chapter 1.

²⁷¹ Bowrey, *ibid.*

²⁷² *Ibid.* at 88.

²⁷³ See Submission by IIED et al, *Sui Generis Systems for the Protection of Traditional Knowledge* (Information for the Secretariat of the Convention on Biological Diversity, 31st October 2005) online: IIED <<http://www.iied.org/pubs/pdfs/G02378.pdf>> at 12.

True protection for [indigenous knowledge] cannot be based on IPRs in their existing or adapted form (i.e., community copyright or community marks). New *sui generis* protections should be based on Indigenous peoples' customary laws, which are the true *sui generis* protections.²⁷⁴

The IPCB distinguishes between “the development of *sui generis* for internal use [and for] external use,” and prefers the former over the latter.²⁷⁵ WIPO also acknowledges the existence of similar *sui generis* protective tools among ILCs, although most of WIPO's activities in the *sui generis* option generally concentrate on adaptations of extant IPRs to regulate the external use of TK.²⁷⁶

Evidently, the *sui generis* option of protecting TK through its customary roots represents the most effective approach to provide protection that is comprehensive, yet tailored to the specific context of TK.²⁷⁷ The prospect for the recognition of this option at the international level seems remote given that it does not, “as yet, ... possess a national (and certainly not, international) profile and infrastructure.”²⁷⁸ The concerns raised in the assessment of the *sui generis* defensive communal patent system may, *mutatis mutandis*, apply to this option.

²⁷⁴ Communication from the Indigenous Peoples Council on Biocolonialism, *Policy Objectives*, online: WIPO <http://www.wipo.int/tk/en/consultations/draft_provisions/pdf/pdf-tk/ipcb.pdf> at A.4.2

²⁷⁵ *Sui generis* for “external use” refers to requirements to “facilitate the extraction of IK for use by outside interests.” *Ibid.*

²⁷⁶ See note 75, Chapter 2; FFM, note 1, Chapter 2.

²⁷⁷ See Chapter 2 Section 2.2.4 above, for discussion of local jurisprudence and existing spiritual and cultural protocols in relation to TK.; also see Howell, note 14, Chapter 2.

²⁷⁸ Howell, *ibid.*

As previously noted, the *sui generis* option to protect TK incorporates numerous proposals, the exhaustive discussion of which goes beyond the scope of this thesis. For example, proposals under this modality include those for the recognition of *sui generis* rights similar to PBRs under the UPOV, or for the creation of new rights that mimic IP rights for creators of integrated circuit topographies or semiconductor chips.²⁷⁹

The diverse mechanisms to protect TK, considered thus far, attest to the diverse ways of applying TK. Each of the modalities has its own merits and shortcomings, but can be considered complementary depending on the policy contexts for TK protection in which each is proposed. The foregoing discussion thus leads to the conclusion, in accord with the general hypothesis of this thesis, that the protection of TK may be achieved through modalities that fit the diversity of communities that hold TK, the diversity in different categories of TK, and the various ways of using such knowledge.

In regard to the use of TK in agricultural production, which is of primary importance in this thesis, further analysis is warranted to identify and develop a modality of TK protection that responds to the need to recognize the value of TKBAPs in the global economy, as established in the previous Chapter.²⁸⁰ In this respect, the following Section explores issues that arise in considering TK in current conceptions of the “public domain.”

²⁷⁹ See *ibid.*

²⁸⁰ See Chapter 3 Section 3.5.

4.6.4 TRADITIONAL KNOWLEDGE AND THE PUBLIC DOMAIN

Historically, the idea of the public domain is construed in different ways.²⁸¹ As previously noted, the concept is applied in the regulation of the use and management of biological resources and associated TK at the international level.²⁸² In relation to the protection of TK, the public domain doctrine was invoked to justify the recognition of a rewards mechanism for ILCs for their “custodial” role in the preservation and supply of the “raw materials” of innovation.²⁸³ Under this construct, the public domain approach to the protection of TK contributes to the recognition of the ABS system in the CBD and in the multilateral system for ABS under the ITGRFA.²⁸⁴

In recent times, however, the public domain approach converges with the “access to knowledge” movement and is often raised as a defensive strategy for protecting TK.²⁸⁵ In this sense, the idea of the public domain is used as a tool to curb the expansive reach of

²⁸¹ See David Lange “Reimagining the Public Domain” (2003) 66 *Law & Contemp Probs* 463 (noting “In its usage to date, the term “public domain” is elastic and inexact”) Charlotte Waelde & Hector MacQueen, *Intellectual Property: The Many Faces of The Public Domain* (Cheltenham: Edward Elgar, 2007); Vincenzo Vinciguerra, *Contribution to the Understanding of the Public Domain* (2006) *bepress Legal Series Working Paper* 1639; Leticia Merino & Jim Robson, eds, *Managing the Commons: Indigenous Rights, Economic Development and Identity* (Mexico: CCMSS, 2005).

²⁸² See discussion of the notion of “public domain,” above, Section 4.6.4.

²⁸³ See Sunder, “Invention”, note 4, Chapter 1 at 5.

²⁸⁴ See discussion of ABS in the CBD, above, 4.3.3, for multilateral system of ABS under the ITPGRFA.; also, see Stephen B. Brush, “Bioprospecting the Public Domain” (1999) 14 *Cultural Anthropology* 535-555.

²⁸⁵ Activists in the “access to knowledge” movement try to avoid tension with the movement to protect TK by carefully distinguishing the concept of “public domain” from that of “commons,” and embracing the latter as a rhetoric tool against IPRs-driven privatisation. Those in the movement to protect TK emphasise that categorizing TK in the public domain should only amount to defensively protecting TK from privatisation by outsiders, and not to keep it in the “commons”. See GRAIN, “Freedom from IPR: Towards A Convergence of Movements” (October 2004) online: < <http://www.grain.org/seedling/?id=301>>; Amy Kapczynski, “The Access to Knowledge Mobilization and the New Politics of Intellectual Property” (2008) 117 *Yale L J* 262; See also Doris Estelle Long, “Traditional Knowledge and the Fight for the Public Domain” (2006) 5 *John Marshall Review of Intellectual Property Law* 317.

IPRs over “inventions” that utilize TK. TKDL is often presented as a strategy of protecting TK by warding off the public domain – to which TK has historically been considered a part – from private proprietary encroachment through patent claimants.²⁸⁶

It is important to note that opponents of the protection of TK also embrace the public domain approach to support their claim that TK falls outside the scope of any form of IP-based protection.²⁸⁷ Generally, it can be observed that arguments that rely on situating TK within the public domain stand, in essence, in contradiction to ILCs’ claims of ownership of their TK.²⁸⁸ Some adherents of the public domain approach consider TK and TK-related resources as “raw materials” for invention and, thus, only subjects of real property rights for which owners of TK could not claim IP of any kind. Even though benefits may be derived through ABS systems, a public domain approach to protecting TK rewards ILCs only as “wardens not also as cultivators.”²⁸⁹

²⁸⁶ UNU-IAS, “The Role of Registers & Databases in the Protection of Traditional Knowledge A Comparative Analysis” (2004) online: United Nations University <http://www.ias.unu.edu/binaries/UNUIAS_TKRegistersReport.pdf>; M Ruiz, *The International Debate on Traditional Knowledge as Prior Art in the Patent System: Issues and Options for Developing Countries* (2002) online: CIEL <http://www.ciel.org/Publications/PriorArt_ManuelRuiz_Oct02.pdf>. Traditional Knowledge Digital Library, *About TKDL* online: <<http://www.tkdl.res.in/tkdl/langdefault/common/Abouttkdl.asp?GL=Eng>>.

²⁸⁷ See Jim Chen, “There's No Such Thing as Biopiracy ... And It's a Good Thing Too” (2006) 37 *McGeorge Law Review* 1; Paul J. Heald, “Your Friend in the Rain Forest’: An Essay on the Rhetoric of Biopiracy” (2001) 11 *Cardozo J Int’l & Comp* 519; Cynthia M. Ho, “Biopiracy and Beyond: A Consideration of Socio-Cultural Conflicts with Global Patent Policies” (2006) 39 *U Mich J L Ref* 433.

²⁸⁸ See *supra* note 9 at 1334; Paul Kuruk, “Goading a Reluctant Dinosaur: Mutual Recognition Agreements as a Policy Response to the Misappropriation of Foreign Traditional Knowledge in the United States” (2007) 34 *Pepp L Rev* 629; Johanna Gibson, “Intellectual Property Systems, Traditional Knowledge and the Legal Authority of Community” in Leticia Merino & Jim Robson, eds, *Managing the Commons: Indigenous Rights, Economic Development and Identity* (Mexico: CCMSS, 2005); Jane E. Anderson, *Law, Knowledge, Culture: The Production of Indigenous Knowledge in Intellectual Property Law* (London: Edward Edgar, 2009).

²⁸⁹ For example, the CBD purports to benefit ILCs for their role in preserving the public domain through ABS systems. Under the system of ABS guided by the public domain approach, Sunder observes,

The relegation of TK to the public domain denies the intellectual worth and value of TK, and conflates TK with the so-called products of nature.²⁹⁰ Treating TK as part of the public domain and presenting it in binary contrast to IP amounts to invalidating TK as “ancient, static, and *natural*, rather than...modern, dynamic, *scientific and cultural invention*.”²⁹¹ In this sense, the idea of public domain as applied to TK diminishes its “contemporary context”²⁹²

Even in its defensive role, “protection” under the public domain approach through such mechanisms as ABS or even TKDL simplifies the critical relationship between ILCs and their knowledge resources. In the manner implemented through ABS, and TKDL, a public domain approach to TK accepts the “legitimation of the appropriation of traditional knowledge as its starting point” and may perpetuate the [mis]conception of TK as “unoriginal.”²⁹³ Considering TK an “anthropological object” that exists in the public domain as just a “raw material” for innovation and sharing of benefits with communities

“traditional knowledge holders may receive remuneration for conserving biodiversity and contributing the raw materials of innovation, but they are not recognized as intellectual property holders in their own right.” See Sunder, “Invention”, note 4, Chapter 1 at 106; CBD, note 1, Chapter 2.

²⁹⁰ Products of nature are unpatentable subject matters under the US patent law that are considered “manifestations of nature,” and thus, “free to all men and reserved exclusively to none.” *Diamond v. Chakrabarty*, 447 US 303, 305-06 (1980). See Mark Sagoff, “Intellectual Property and Products of Nature” (2002) 2 *The American Journal of Bioethics* 12. For criticism of public domain approach to TK, see Kloppenburg, *supra* note 53, Ch. at 185 (noting “the land races of the Third World, are most emphatically not simple products of nature.”); see detailed discussion on this topic in Ikechi Mgbeoji, “Lost in Translation? The Rhetoric of Protecting Indigenous Peoples’ Knowledge in International Law and the Omnipresent Reality of Biopiracy” in Peter Phillips & Chika Onwuekwe, eds, *Accessing and Sharing the Benefits of the Genomics Revolution* (Dordrecht: Springer Publishers, 2007) 118-124; also see Naomi Roht-Arriaza, “Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities” (1995) 17 *Mich J Int’l L* 919.

²⁹¹ Sunder, “Invention”, note 4, Chapter 1 at 6.

²⁹² Gibson, note 134, Chapter 3.

²⁹³ *Ibid.* at 184.

who might not have approved the utilization of the knowledge or biodiversity in the first place may be “the equivalent of stealing a loaf of bread and then sharing the crumbs.”²⁹⁴

In some cases, the protection of TK may be achieved through such strong IP-based protection models as a defensive community patent system due to the exclusionary power this model offers. While legitimate concerns arise regarding the expansive reach of IPRs in other realms (such as TCEs/folklore),²⁹⁵ in relation to TK, IP-based protection may be necessary in relevant circumstances when the needs and expectations of the community so demands.²⁹⁶ Chander and Sunder aptly summarise the risks of adopting the public domain approach to TK:

[Public domain approach] may: (1) legitimate the current distribution of intellectual property rights, (2) mask how current constructions of the public domain disadvantage and subordinate indigenous and other disempowered groups globally, and (3) impair efforts by disempowered groups to claim themselves as subjects of property — that is, as autonomous individuals with constitutive personhood interests in property — rather than as mere objects, or someone else’s property.²⁹⁷

In a diverse mechanism of TK protection, IP-based protection may be needed in certain categories of TK, without necessarily excluding any form of *sui generis* modalities that may be suited to a particular context of TK protection.²⁹⁸ The frontiers of

²⁹⁴ Vandana Shiva, *Protect or Plunder?: Understanding Intellectual Property Rights* (London: Zed Books, 2001) at 64.

²⁹⁵ See Farley, *supra* note 240; also see Chapter 2 Section 2.2.1.

²⁹⁶ See Visser, note 4, Chapter 1.

²⁹⁷ *Supra* note 9 at 1335.

²⁹⁸ Doris Estelle Long, “Traditional Knowledge and the Fight for the Public Domain” (2006) 5 J Marshall Rev Intell Prop L 317 at 322.

“creativity” in the field of TK are expressed through wide areas of practice, such as agricultural, medicinal, spiritual, and cultural. Certain “exclusions” from IP protection may be needed for some categories of TK that have spiritual and cultural significance, the commercialisation or disclosure of which ILCs absolutely oppose.²⁹⁹ Similarly, it may be acceptable for ILCs to derive benefits through acceptable modes of commercialisation of TKBAPs that are necessary to achieve their economic independence.³⁰⁰

The qualities embedded in TKBAPs as well as their authenticity may need greater recognition and legal protection beyond the traditional circle in a way that remains appropriate, useful and beneficial for the communities who maintain TK. As important as some of the approaches and modalities – especially the *sui generis* options – are to the protection of TK, choosing a particular modality of TK protection over another may obscure differences in the needs and interests of ILCs.³⁰¹ In a broad conceptualisation of TK, it might not be feasible or even desirable to find one form of protective regime that covers all aspects of TK, let alone to relegate all forms of TK to the public domain. As such, I argue that the holistic feature of TK might be better accommodated through protection based on different legal mechanisms that are suited to the different facets of TK for internal use (among the communities) and for external use (outside of the communities).³⁰²

²⁹⁹ Note 128, Chapter 2; Darrell Addison Posey & Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities* (Ottawa: IDRC, 1996).

³⁰⁰ See Stephen B. Brush & Doreen Stabinsky, *Valuing Local Knowledge: Indigenous People and Intellectual Property Rights* (Washington: Island Press, 1996).

³⁰¹ See *supra* note 298 at 322.

³⁰² See note 83, Chapter 2, at 72; WIPO, “Diverse”, note 82, Chapter 1 at 4; Srinivas, *supra* note 2 at 85.

The holistic nature of TK makes it difficult to confine TK to one particular model of protection, and brings about the dilemma of the proper approach to protect TK which, in the context of this thesis, may include the following inquiry: Should IP law be broadened and diversified to recognize the full context of TK and its linkages with the environment, culture and spiritual domain, or should it focus on those aspects of TK that are most readily or most commonly appropriated by third parties?³⁰³

Beyond a protection regime that merely restricts third parties from accessing TK or one that merely affords adequate compensation for the rights-holder, some proposals look to protect TK through creative ways of adapting the IP system to empower ILCs and to benefit from their resources. In relevant circumstances, IP-based protection may be advantageous in regulating the external use of TK because of an existing infrastructure, nationally and internationally, through the various IP treaties.³⁰⁴ GIs constitute aspects of IP that, with proper implementation, may be suited to the intrinsic features of TKBAPs in regulating the external use of TK. Before a detailed analysis of the link between GIs and TKBAPs in this respect, it is necessary to consider other approaches of TK protection that are modeled under the current IPRs regime.

4.6.5 PROTECTION UNDER CURRENT INTELLECTUAL PROPERTY RIGHTS

Given the effectiveness of IPRs in regulating economic relations, segments of stakeholders have recently become receptive to the possible use of IP as frameworks to

³⁰³ Note 21, Chapter 2, at 72.

³⁰⁴ See Howell, *supra* note 14, Chapter 2 at 9.

protect TK for external use.³⁰⁵ Proposals to protect TK through IP mostly include either the use of existing IPRs, or the use of their modified versions in some cases, and the use of their amended version in others. Examples in the latter category include the application of case law interpreting unmodified statutes of IPRs in a manner that responds to the interest of ILCs. In this line, the Australian Aboriginal artists successfully invoked claims of copyrights and unfair trade practices against carpets imported from Vietnam that replicated Aboriginal arts.³⁰⁶ In resolving the dispute that arose, the Federal Court of Australia granted compensatory damages for “personal suffering” to take account of cultural aspects.³⁰⁷ It decided that even though only individuals could be recognized as copyright owners:

[T]here may be scope ... for the distribution of the proceeds of the action to those traditional owners who have legitimate entitlements, according to Aboriginal law, to share the compensation paid by someone who has, without permission, reproduced the artwork of an Aboriginal artist.³⁰⁸

The jurisprudence developed from this and similar cases has generally helped to introduce the issue of TK into the Australian IPRs establishment.³⁰⁹ For example, the

³⁰⁵ See above, Chapter 3 Section 3.5; also, see the role of IP in global markets for agricultural products in in WIPO, *Review of Existing Intellectual Property Protection of Traditional Knowledge*, WIPO/GRTKF/IC/3/7 (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Third Session, Geneva, June 13 To 21, 2002) [Review of Existing IP].

³⁰⁶ *Milpurrurru and Others v Indofurn Pty Ltd and Others* (1994) 130 ALR 659, para. 129.

³⁰⁷ *Ibid.*

³⁰⁸ *Ibid.*, para. 129.

³⁰⁹ Cases such as *Foster v Mountford* (1976) 29 FLR 233; *Bulun Bulun v Flash Screenprinters* discussed in (1989) 2 EIPR 346-355. An attempt to disclose information of religious and cultural significance to particular Aboriginal people, supplied in confidence to the author, was enjoined as a breach of confidence. *Foster v. Mountford* (1976) 29 FLR 233 (FC); A third party recipient of protected confidential information can be readily enjoined so long as the information is still relatively secret. However, the particular

National Indigenous Arts Advocacy Association in Australia adopted the Indigenous Label of Authenticity in 1999 to help promote the marketing of the art and cultural products, and to deter the sale of products that are falsely labelled as originating from Aboriginal peoples.³¹⁰ The result of the certification of authenticity in this manner, however, has not proved fruitful and thus, the initiative has been abandoned.³¹¹

New Zealand uses existing IPRs to provide defensive measures of TK protection.³¹² The New Zealand Trade Marks Act was amended to prohibit the registration of trademarks that would likely offend a significant segment of the community, including the indigenous Maori people.³¹³ In addition, the Act allows the invalidation of a registered

proceeding concerned copyright infringement. The case, *Bulun Bulun*, concerned a painting “Magpie Geese and Water Lilies at the Water Hole” created in accordance with the customary law of the traditional community (the Ganalbingu people). The Aboriginal artist of the painting that had been infringed was bound by the customary law of his community to not exploit the painting in a manner contrary to the community’s customary law. This was sufficient for the artist to be under a fiduciary obligation to the community requiring him to take reasonable steps to remedy any infringement by a third party. However, the court rejected finding a “native title”, a “community title”, an “equitable title” or an express trust in favor of the community. *Bulun Bulun v. R & T Textiles Pty. Ltd.* (1998), 157 ALR 193 (FCA).

³¹⁰ O’Connor, note 8, Chapter 1, at 687.

³¹¹ The failure has been attributed to disagreements as to what constitutes authenticity; the fact that one mark was not seen as being able to accommodate the needs of all indigenous groups and the lack of proper funding for the administration of the mark. See Peter Drahos, *Towards an International Framework for the Protection of Traditional Group Knowledge and Practice* (UNCTAD-Commonwealth Secretariat Workshop on Elements of National *Sui Generis* Systems for the Preservation, Protection and Promotion of Traditional Knowledge, Innovations and Practices and Options for an International Framework, Geneva, 4-6 February 2004) at 32.

³¹² WIPO, *Specific Legislation for the Legal Protection of Traditional Cultural Expressions—Experiences and Perspectives of New Zealand*, Annex II, WIPO/GRTKF/IC/4/INF/2, para. 2 ff.

³¹³ According to New Zealand government officials, “Maori” refers to the indigenous peoples of New Zealand. New Zealand Trade Marks Act 1953, as amended by the Trade Marks Amendment Act of 1994 and 2002. The 2002 Act required the Commissioner to establish an Advisory Committee to provide advice on the registrability of trademarks which contain Maori signs, such as text or imagery. This took into account the new offensiveness test at Section 17(1) (b): an absolute ground for refusing registration of a trademark that would be likely to offend a significant Section of the community including Maori. See Trade Marks Act 2002 No. 49 (Reprinted as at 15 December 2005), at s 17 (1) (c). <http://www.legislation.govt.nz/act/public/2002/0049/latest/viewpdf.aspx?search=ad_regulation__2008-2009__ra_rcur_r&p=13>. The 2011 Waitangi Tribunal report recommended the establishment of a new

mark upon application by a person “culturally aggrieved,” even if the mark is distinctive of a registered owner.³¹⁴ Bearing in mind the holistic nature of TK, it combines the use of IPRs with initiatives for *sui generis* approach to TK.³¹⁵

In Canada, there has yet to be any amendments to IPRs legislation based on protection for TK and TK-based resources.³¹⁶ As a working paper from the Department of Indian and Northern Development indicates, however, indigenous peoples in Canada directly utilize existing Copyrights and Trademark systems to establish rights on the products of their knowledge.³¹⁷ This includes the use of copyrights in the wood carvings of Pacific coast artists, including masks and totem poles, and in the silver jewellery of Haida artists.³¹⁸ In the trademark regime, the Department of Indian and Northern Affairs uses

Commission that would replace the Māori trade marks advisory committee, “supported by a small new secretariat, to decide objections to the use of mātauranga Māori, taonga works, and taonga-derived works on a case-by-case basis, as well as to make early declaratory rulings, develop guidelines, maintain a kaitiaki register, and provide advice, amongst other functions.” Waitangi Tribunal, *Ko Aotearoa tēnei: A Report into Claims Concerning New Zealand Law and Policy Affecting Māori Culture and Identity*, Waitangi Tribunal Report (2011) at 713.

³¹⁴ *Ibid.* at s 73. Trade Marks Act 2002 No. 49 (As reprinted on 15 December 2005). Of course, the Act does not prohibit offensive use of a mark as an unregistered mark. Similarly, it does not prevent the non-offensive use of a trademark based on Māori text and imagery that the Maori may want to establish exclusive rights.

³¹⁵ *Ibid.* In a report into claims concerning New Zealand law and policy affecting Māori culture and identity, called the Waitangi Tribunal report, the Te Tai Tokerau and Ngāti Kahungunu tribes mentioned the lack of prevention of commercial exploitation of certain place names as one category of claims relating to omissions of the Crown that breach the promises made in the Treaty of Waitangi. See Waitangi Tribunal, *supra* note 313 at 389 & 390.

³¹⁶ For discussion of constitutional arguments that may apply to IP claims of ILCs over their traditional knowledge in Canada, see Gervais, “Spiritual”, note 6, Chapter 3 at 491 ff.

³¹⁷ See Minister of Indian Affairs and Northern Development, *Intellectual Property and Aboriginal People*, A Working Paper QS-7018-001-EE-A1, (1999) at 11 ff.

³¹⁸ WIPO, *Review of Existing Intellectual Property Protection of Traditional Knowledge*, WIPO/GRTKF/IC/3/7 (Intergovernmental Committee on Intellectual Property and Genetic Resources, TK and Folklore, Third Session, Geneva, June 13 To 21, 2002) at 121.

the symbol *Igloo* as a certification mark, which identifies Inuit artwork as authentic.³¹⁹ In addition, members and groups of Aboriginal peoples protect a number of marks as official marks and certification marks to identify a wide spectre of goods and services, ranging from traditional art and artwork to food products, clothing, tourist services, and enterprises.³²⁰

As these examples illustrate, and as will be indicated in the discussion of GIs below, there is a general trend to adopt IP systems in the context of a particular category of TK in circumstances where the use of IP is considered relevant and effective. This trend is consistent with the opinion of many commentators who suggest methods for positively protecting TK on the ground that a mere defensive system of protecting TK is insufficient to satisfy the needs and expectations of ILCs in the diverse contexts of TK.³²¹ It is true that a TK-protection regime should respond to the need for preservation and upkeep of

³¹⁹ See Indian and Northern Affairs Canada, “How do I know if my Inuit Sculpture is Authentic?” in *Frequently Asked Questions about the North* (2001) online: < <http://www.ainc-inac.gc.ca/ai/mr/is/info115-eng.pdf>> at 1.

³²⁰ For example, the Cowichan Band Council has received a certification mark on the words and design for “Genuine Cowichan Approved” to protect such articles of clothing as sweaters. See Canadian Trade-Mark Data, GENUINE COWICHAN & DESIGN, Registration Number: TMA469023. The following are some of Aboriginal names that are registered, or are in the process of registration as “official marks:” SKATIN, KASKA, QUENEESH, NK’MIP and FIRST NATIONS SUMMIT. For detailed discussion of the use of various parts of the Trademark Act in relation to Aboriginal names and signs in Canada, see Barry Steven Mandelker “Indigenous People and Cultural Appropriation: Intellectual Property Problems and Solutions” (2000) 16 Canadian Intellectual Property Review 367; Boughton Law Co., *Protecting Aboriginal Marks* online: Boughton Law Corporation < http://www.boughton.ca/files/669020_1.pdf>.

³²¹ See for example, Gibson, *supra* note 234, Chapter 3, at 182-185 (arguing that defensive strategies of protecting TK “risk an ongoing paternalism and persistent historicising of the value of knowledge”); see also David R. Downes, “How Intellectual Property Could Be a Tool to Protect Traditional Knowledge” (2000) 25 Colum J Envtl L 253 at 258; Madhavi Sunder, “IP³” (2006) 59 Stanford Law Review; Sunder, “Invention”, note 4, Chapter 1; Visser, note 4, Chapter 1; Terri Janke, *Minding Culture: Case Studies on Intellectual Property and Traditional Cultural Expressions* (Geneva: World Intellectual Property Organization, 2003) at 36; Daphne Zografos, “Can Geographical Indications be a Viable Alternative for the Protection of Traditional Cultural Expressions” in Fiona Macmillan & Kathy Bowrey, ed., *New Directions in Copyright Law*, (Cheltenham: Edward Elgar, 2006); Brad Sherman & Leanne Wiseman, “Towards an Indigenous Public Domain?” in P. Bernt Hugenholtz & Lucie Guibault, eds, *The Future of the Public Domain* (The Hague: Kluwer Law International, 2006).

TK in the face of the aforementioned global challenges in multiple ways; however, TK should not be seen as having only the features of “adversity,... [as being] a site for contested claims and interests.”³²²

Defensive approaches, and more pertinently, culture-specific protocols of *sui generis* systems are important aspects of TK protection. However, these systems are not sufficient by themselves, as they do not offer the urgently needed affirmative way of recognising TK as “a complex and viable [i]ndigenous philosophy and epistemology” that plays a key role in the current global knowledge economy.³²³ The following Section provides a brief overview of the major considerations that necessitate a positive protection of TK through an IP-based model.

4.7 NEED FOR INTELLECTUAL PROPERTY-BASED PROTECTION

Several reasons can be cited to justify the development of a positive protection system for TK using general proprietary instruments. The first relates to the need to preserve and protect TK that has economic and cultural significance to ILCs.³²⁴ Protecting the cultural aspect of TK would require that the relevant ILCs be equipped with a means by which they can prevent third parties from commercialising their TK and simply reducing it to a set of economic rights.³²⁵ In general, owners of IP acquire the rights to say “no” to third parties (and, consequently, the right to say “yes” to a person who requests permission to

³²² Note 89, Chapter 1 at 7; see discussion on the challenges that underline the protection of TK in Chapter 3 Sections 3.2.2, 3.3 & 3.4.

³²³ See *ibid.*

³²⁴ See note 75, Chapter 2, para. 15.

³²⁵ *Ibid.*

use the protected subject matter). As a WIPO study concludes, properly crafted IP-based protection would enable ILCs to acquire the “crucial right of saying ‘no’ to third parties that engage in the unauthorized and/or distorting use of their traditional knowledge, regardless of its commercial nature.”³²⁶ As such, a properly designed IP-based protection of TK may be used to empower traditional communities to exclude third parties. The use of IP, in this sense, “does not *commodify* TK *per se*.”³²⁷

In the context of TKBAPs, the exclusionary use of an IP-based model helps to prevent the misappropriation of farmers’ varieties, landraces, and wild species in the market. Most TKBAPs from ILCs are sold in the markets of the industrialized world at a premium price, but the process of commercial transaction tends to benefit non-indigenous intermediaries the most.³²⁸ In addition, inauthentic agricultural products that do not truly originate from the communities are sold in the markets of the industrialized countries, bearing the same identification as the original products.³²⁹ A properly crafted IP-based protection of these products would equip ILCs in the agricultural sector with the tools necessary to bring equitable power relations with outside commercial powers – intermediaries – to the provision of their products for the market. An IP-based model of

³²⁶ *Ibid.*

³²⁷ WIPO, “Composite Study on the Protection of Traditional Knowledge” (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Fifth Session Geneva, July 7 To 15, 2003) WIPO/GRTKF/IC/5/8, para. 18 [*emphasis added*].

³²⁸ See discussion above Chapter 3 Section 3.4.2.

³²⁹ In a loosely derived form from the term biopiracy, such incidents are sometimes referred to as “agropiracy.” See Maria Fonte, “Slow Food’s Presidia: What do Small Producers do with Big Retailers?” (2006) 12 *Research in Rural Sociology and Development* 203; also Muhamaad Saeed, “WTO: Coldiretti Claims Agro-Piracy Top Priority” (15 June 2004) 4:11 *The World Trade Review* online: <<http://www.worldtradereview.com/news.asp?pType=N&iType=A&iID=84&siD=8&nID=15472>>.

protection would, therefore, respond to agricultural producers' interest in preventing counterfeits in agricultural products.

No country, and for that matter no community, has the luxury of just conserving biological resources and the underlying TK without reference to use.³³⁰ Unlike most “products of nature,” properly managed biodiversity resources are renewable, and their abundance and heterogeneity is developed and maintained for generations through practices of use that incorporate TK-based practices. In the discourse to protect TK and TKBAPs, it is unlikely that representatives of developing countries and ILCs are interested in the “quixotic pursuit of common heritage”; rather, they are interested at “establishing control over and realizing some benefit from the appropriation and utilization.”³³¹ In proper contexts, therefore, TK holders may legitimately aspire to “commodify” their knowledge or “at least certain selected parts of it.”³³² An IP-based protection may, in this case, be properly used to recognise the value of commercially available TK-based products, so that ILCs would gain economic advantages by fairly participating in the global economy.³³³

Treating commercially available and non-commercially available TK separately may attract criticism for “disintegrating the holistic aspect of TK.”³³⁴ However, indigenous

³³⁰ See Michael Petit et al, *Why Governments Can't Make Policy: The Case of Plant Genetic Resources in the International Arena* (Washington: International Potato Center, 2001) at 18.

³³¹ Jack Ralph Kloppenburg, *Seeds and Sovereignty: the Use and Control of Plant Genetic Resources* (Durham: Duke University Press, 1988) at 194.

³³² *Supra* note 328, para. 34.

³³³ See *ibid.* Also see Chapter 3 Section 3.5 for discussion of “Recognising the Value of TKBAPs.”

³³⁴ See Note 43, Chapter 2, nn.62.

peoples' own protocols of knowledge-protection may classify a certain category of TK as commercially available. In recognition of the holistic aspect of TK, for example, Panama's *sui generis* system of TK protection distinguishes between TK "suitable for commercial use" that can be covered under collective IP rights, and "all other traditional forms of expression of indigenous peoples" which cannot be "the subject of exclusive rights of any kind."³³⁵ Similarly, WIPO suggests that the function of managing "sacred knowledge" should be allocated to customary law, while international and national laws should regulate commercially relevant TK.³³⁶

Another justification for IP-based protection of TK relates to an argument that has been raised to promote the global enforcement of IP that "its absence in foreign countries leads to an unfair advantage of the local manufacturers, since they do not need to compensate the IP right holder, or to recover the costs of research and development."³³⁷ Given the importance that TK has to ILCs in their daily lives, and given the effort and resource that they spend in the making of TK-based products in general, the same is true with the "commercial interests of traditional communities that make use of their TK in their economic life" through the provision of their agricultural products for international markets.³³⁸ In this respect, an IP-based protection for TK addresses concerns for recognition and reward of farmers' contribution to the development and management of

³³⁵ See *Special System for the Collective Intellectual Property Rights of Indigenous Peoples Act 20* (Gaceta Oficial (Official Gazette) No. 24,083 of June 27, 2000) at Art. 1 (1) and (2).

³³⁶ WIPO, *Adopted Report: Document prepared by the Secretariat*, (Eleventh Session, Geneva, July 3 to 12, 2007) WIPO/GRTKF/IC/11/15; also see note 42, Chapter 2, nn. 62.

³³⁷ See note 75, Chapter 2, para. 15.

³³⁸ WIPO, *supra* note 336; also, see discussion above in Chapter 3 Sections 3.2, 3.3. & 3.4

genetic resources over the ages. Their approval and involvement in the commercialisation of their own inventions and creativity using IP can be a means of accomplishing this objective.

Indeed, most ILCs live in poverty though they are actually rich in knowledge. If the communities so wish, the establishment of IP rights over their knowledge would enable them to “transform [their knowledge] into capital.”³³⁹ This contributes to the achievement of their economic independence.³⁴⁰

Articulating the argument in this Section in terms of the proposition to utilize GIs as IP tools to protect TKBAPs, it should be observed that the primary proposition in this thesis is based on the recognition of the role IP for protecting TK in limited circumstances. Potentially, GIs may be used as IP-based modality where non-IP modalities of protection cannot address the need and concerns of ILCs over TKBAPs in the context of their participation in international trade.

The next Section provides additional background for an examination of the instrumentality of GIs in protecting TKBAPS, which is done in later Chapters. It reviews the origins of proposals for GIs to be used as modalities to protect TKBAPs in various settings.

³³⁹ *Ibid*, para., para. 21.

³⁴⁰ One way ILCs could achieve economic independence could be, for example, through the establishment of commercial ventures within the traditional communities” or using their property title as “collateral security for giving traditional communities facilitated access to credit.” See *Ibid.*, para. 21.

4.8 GEOGRAPHICAL INDICATIONS AS MODALITIES OF PROTECTION

An increasing number of academics and ILCs' interest groups currently push for a better protection of GIs at international, regional, and national levels as a means of protecting TK.³⁴¹ In a WIPO-commissioned study, for example, Terri Janke observes: “[G]iven that indigenous peoples’ cultural expression reflects their belonging to land and territories, [GIs] may allow some scope for indigenous peoples to use geographic indications for their clan names, and language words for regions.”³⁴² Similarly, Zografos contends that GIs “can be viable alternatives for the protection of traditional cultural expressions.”³⁴³ Sherman and Wiseman also argue that “the regimes used to protect geographical indications could be used as a model for a *sui generis* scheme to protect indigenous knowledge.”³⁴⁴

³⁴¹ See for example oriGIn, the first international network of GI producers that now represents over one million producers of traditional products from more than 30 countries. Homepage: <<http://origin.technomind.be/>>. Established under the umbrella of the Arab League in October 2008, the Arab Society for Geographical Indications (ASGI) has outlined its objectives to being “protect and promote Arab heritage and local products as well as [encourage] Arab countries to develop GI laws and regulations, and [join] international treaties related to geographical indications and [update]and modernising the existing geographical indications laws in the Arab countries.” Homepage: <<http://www.ip-watch.org/weblog/2008/10/27/new-arab-group-aims-at-protecting-local-products-with-geographical-origins/>>; Research projects financed by the EU and Switzerland have their purpose to “strengthen international research on geographical indications”: The DOLPHINS (Development of Origin Labelled Product Humanity, Innovation and Sustainability) & SINNER-GI (Strengthening International Research on Geographical Indications) Homepage: <<http://www.origin-food.org/2005/index.php?r=1&Largeur=1280&Hauteur=800>>; also see discussion in above, Chapter 1 Section 1.6.

³⁴² Terri Janke, *Minding Culture: Case Studies on Intellectual Property and Traditional Cultural Expressions* (Geneva: World Intellectual Property Organization, 2003) at 36, online: <<http://www.wipo.int/tk/en/studies/cultural/minding-culture/studies/finalstudy.pdf>>.

³⁴³ Zografos, note 320, Chapter 4, at 55.

³⁴⁴ Brad Sherman & Leanne Wiseman, “Towards an Indigenous Public Domain?” in P. Bernt Hugenholtz and Lucie Guibault, eds, *The Future of the Public Domain* (The Hague: Kluwer Law International, 2006) at 275.

In international IP law-making, many countries request the review of the TRIPS Agreement in a manner that recognizes higher international standards of GIs protection on the ground that GIs would help to preserve cultures of agricultural production.³⁴⁵ For some developing countries, GIs contribute to “a remunerative marketing of an agricultural production based upon traditional cultivation methods.”³⁴⁶ Many developing countries – such as Chile, Brazil, India, Malaysia, Singapore, Thailand, Jordan, and Egypt and others – adopted *sui generis* systems of GIs legislation between 1996 and 2004 alone.³⁴⁷ For instance, India favours GIs protection in international negotiations because culture is an integral part of its economy.³⁴⁸

WIPO’s review of existing IP protection of TK shows that Venezuela and Vietnam claim to use GIs for protecting TK.³⁴⁹ In its latest “development agenda,” WIPO aims to support developing and least-developed countries “in the appropriate use of IP,

³⁴⁵ Council for Trade-Related Aspects of Intellectual Property Rights, *Communication from Bulgaria et al*, WTO Doc. IP/C/W/353, 24 June, 2002, para. 6.

³⁴⁶ See WTO Council on Trade-related Intellectual Property Rights, *Communication from Bulgaria, Cuba, Cyprus, the Czech Republic, Estonia, the European Communities and their fifteen Member States, Georgia, Hungary, Iceland, India, Jamaica, Kenya, Liechtenstein, Malta, Mauritius, Pakistan, Romania, the Slovak Republic, Slovenia, Sri Lanka, Switzerland, Thailand and Turkey*, 24 June 2002, WTO Document IP/C/W/353; Ernst-Ulrich Petersmann, ed, *Developing Countries in the Doha Round: WTO Decision-making Procedures and Negotiations on Trade in Agriculture and Services* (San Domenico di Fiesole: The Robert Schuman Centre for Advanced Studies, 2005) at 259; Panizzon, note 19, Chapter 3., at 26.

³⁴⁷ See O’Connor and Company & Insight, *Protection of Geographical Indications in 160 Countries around the World, Part II of the Guide “Geographical Indications and TRIPs: 10 Years Later... A Roadmap for EU GI Holders to Gain Protection in Other WTO Members”* (2007) online: <http://trade.ec.europa.eu/doclib/docs/2007/june/tradoc_135089.pdf>.

³⁴⁸ These distinct cultures include, for example, products in the form of saris (traditional dress worn primarily by Hindu women), specialty teas (Darjeeling, Assam), and rice varieties (such as Basmati). See European Commission, *External Trade, Intellectual Property, TRIPs and Geographical Indications: EU Submits Three Communications on Geographical Indications, Brussels, 24 June 2002*, online: <http://europa.eu.int/comm/trade/issues/sectoral/intell_property/wto_nego/intel4.htm>.

³⁴⁹ According to the report, products protected as geographical indications include “Cocuy the Pecaya,” a liquor made from the agave, in Venezuela, and “PhuQuoc” fish, soya sauce, and “Shan Tuyet Moc Chau,” a variety of tea, in Vietnam. See O’Connor, note 8, Chapter 1.

particularly geographical indications ... in product branding.”³⁵⁰ Similarly, the African Group – an influential negotiating bloc of African countries in the WTO – has openly supported the extension of GIs protection to agricultural products. In its submission in 1999, the African Group stated that GI protection should be extended “to other products recognizable by their geographical origins (for example handicrafts and agro-food products).”³⁵¹ The African Group reiterated its interest in GIs as a means to protect TKBAPs by stating:

[GIs]...will protect the originality of the African products and enhance both the market potential for resources emanating from the continent and the accrual of tangible benefits to the African Countries from which these resources originate. It will also be a good marketing tool that will ensure that African products do not lose identity in the global markets.³⁵²

The growing interest of a coalition of representatives of developing countries in GIs has opened up a policy interest in GIs beyond the familiar forums of law and policy for IP, namely, the WIPO and the WTO. The FAO is increasingly interested in GIs as possible instruments of policy intervention to remedy inequities in global commodity markets in respect to TKBAPs.³⁵³ In 2009, FAO organized a “technical forum” on GIs, which

³⁵⁰ See WIPO, *Project on Intellectual Property and Product Branding for Business Development in Developing Countries and Least-Developed Countries (LDCs)* (Committee On Development and Intellectual Property (CDIP), Fifth Session, Geneva, April 26 to 30, 2010) CDIP/5/5.

³⁵¹ See WTO, *Preparations for the 1999 Ministerial Conference – The TRIPS Agreement* Communication from Kenya on Behalf of the Africa Group (1999) WT/GC/W/302.

³⁵² Uhuru Kenyatta, On Behalf of the African Group, *Press Statement* (The WTO Mini-Ministerial Meeting, Geneva, 25th July 2008) online: < [http://www.trade.go.ke/downloads/Press per cent20Releases/PRESS per cent20RELEASE per cent20-THE per cent20AFRICAN per cent20GROUP per cent20AT per cent20THE per cent20WTO per cent20MINI-MINISTERIAL per cent20MEETING per cent20,GENEVA, per cent2025TH per cent20JULY per cent202008.pdf](http://www.trade.go.ke/downloads/Press%20Releases/PRESS%20RELEASE%20-THE%20AFRICAN%20GROUP%20AT%20THE%20WTO%20MINI-MINISTERIAL%20MEETING%20,GENEVA,%20per%2025TH%20JULY%202008.pdf)>, para. 11.

³⁵³ See FAO and Siner-GI, note 236, Chapter 2; Dwijen Rangnekar, “The Law and Economics of Geographical Indications: Introduction to Special Issue of J World Intell Prop” (2010) 13 J World Intell Prop 77 at 78 [Rangnekar, “Law and Economics”].

concluded that protecting agricultural products through GIs “can contribute to food security in rural areas, as far as they are considered and implemented as a rural development tool, and not only a commercial or legal one.”³⁵⁴

The FAO runs a “quality & origin” project in which it reiterated its commitment to “the development of procedures focusing on origin-linked specific quality that will contribute to rural development.”³⁵⁵ Simultaneously, it lends its support to the WTO negotiations over GIs, eyeing the “potential to use GIs to protect traditional products.”³⁵⁶ It also recommends that “the link between GIs and the debate on traditional knowledge needs to be explored further.”³⁵⁷ The FAO continues to explore conditions for the use of GIs as “public policy” instruments to “support rural development.”³⁵⁸ Similarly, the United Nations Development Program focuses on the rural development potential of GIs through its “technical cooperation activities and financing” schedule.³⁵⁹

³⁵⁴ Hajnalka Petrics & Richard Eberlin, eds, *Global Food Security – A Global Challenge for Politics and Industry* (Forum International Green Week – Technical Forum, 16 January 2009, Berlin, Germany).

³⁵⁵ See FAO, *Quality Linked to Geographical Origin: Product, People and Place*, online: Quality and Origin <<http://www.foodqualityorigin.org/eng/index.html>>.

³⁵⁶ FAO, *FAO Support to the WTO Negotiations – Trade-related Aspects of Intellectual Property Rights: Geographical Indications* in Factsheet for the Sixth WTO Ministerial Conference online: FAO <<ftp://ftp.fao.org/docrep/fao/meeting/010/j6832e.pdf>>.

³⁵⁷ *Ibid.*

³⁵⁸ See FAO, *Creating Conditions for the Development of GIs: the Role of Public Policies* online: FAO <<http://www.fao.org/docrep/012/i1057e/i1057e07.pdf>>.

³⁵⁹ See, UNCTAD Secretary-General, *Review of the Technical Cooperation Activities of UNCTAD and their Financing: Annex I- Review of Activities Undertaken in 2009* (Trade and Development Board Working Party on the Strategic Framework and the Program Budget, Fifty-sixth Session, Geneva, 6–8 September 2010, Item 3 of the provisional agenda) TD/B/WP/222/Add.1; also see Swarnim Wagle, *Geographical Indications as Trade-Related Intellectual Property: Relevance and Implications for Human Development in Asia-Pacific*, UNDP Asia-Pacific Trade and Investment Initiative Discussion Paper (2007).

Many non-governmental organizations (NGOs) have also recently turned their attention to GIs in the wake of the “proliferation of socially generated appellations that are suggestive of different moral economies of concerns related to the conditions of production in distant locations” (such as fair trade and labelling initiatives).³⁶⁰ As opposed to other IPRs that only protect “real” innovations in the final stage of the supply chain of commodity products, GIs are viewed as “mechanism[s] for rewarding and adding value in all the other stages” of traditional agricultural products.³⁶¹ In short, GIs have recently acquired significant reputation as potential instruments to protect the “creativity” and “collective rights” of groups and communities that are otherwise neglected by the existing IPRs regime.

The current global IPRs regime has encountered wide criticism and opposition for systematically excluding TK and TK-based resources from the realm of protection.³⁶² It is rare that developing countries and ILC interest groups demand stronger protection of, so to speak, other breeds of IP. Beyond the questions raised as to their instrumentality in protecting TK and TK-based resources, the renewed interest in GIs in the IPR discourse – yet in a very different sense from trademarks – has provoked numerous analyses and commentary within the IP community. For this reason, there is a need for a thorough analysis of the legal and structural nature of GIs. After an

³⁶⁰ See Rangnekar, “Law and Economics” *supra* note 353 at 78; See Chapter 3 Section 3.6 above, for discussion of fair trade and labelling initiatives.

³⁶¹ Tom Dedeurwaerdere et al, “A New Market Road: Bioprospection Beyond Intellectual Property Rights” <http://perso.cpdr.ucl.ac.be/dedeurwaerdere/articles%20Tom/Dedeurwaerdere%20Pascual%20Vijesh%20_2005_%20version%20site%20oct%202006%E2%80%A6.pdf>.

³⁶² See Chapter 3 Section 3.2.2.2, above.

exploration of the scope and nature of GIs in the next Chapter, the rest of the thesis assesses the applicability of GIs to protect TKBAPs.

4.9 CONCLUSION

This Chapter started by introducing normative concepts that guide the development of legal regimes governing the use, ownership, and management of TK and associated biological resources at the international level. The discussion explored a range of initiatives to protect TK and TKBAPs in the institutional contexts of relevant international negotiations. The various Sections in this Chapter identified, discussed, and examined different modalities for protecting TK and TKBAPs.

The discussion reveals a general traction regarding the need for a system of TK protection in various sites of international law and policy. Generally, the key institutions for international IP law and policy address the protection of TK in a multifaceted manner. To achieve comprehensiveness in the protection of TK, both the CBD and the WIPO recognize the need to devise protection methods that are suited to different categories of TK. WIPO emphasises the role of IP in providing defensive and positive protection for relevant aspects of TK.

Similarly, the CBD focuses on the development of *sui generis* options that are suited to the intrinsic features of TK embedded in the culture and values of ILCs. The CBD encourages biological stewardship through ABS systems in the use of TK associated with genetic resources. To recognize the contribution of TK in the area of biological resources for food and agriculture, the FAO explores various mechanisms that may be used to implement Farmers' Rights in national jurisdictions. The idea of diverse systems of

protection to suit different categories of TK is consistent with the approach of this study. The discussion in this Chapter explored various modalities for protecting TK in general, in order to accommodate and specifically assess the applicability of GIs to protect TKBAPs in later Chapters.

The different modalities of protecting TK and TKBAPs emanate from diverse points of view about the role of IP. Earlier approaches to the protection of TK mainly focused on fending off the reach of IPRs as part of protecting the public domain which genetic resources and associated TK have been considered to be a part of.³⁶³ The discussion in this Chapter has indicated a shift from this focus to allow a degree of IP-based enclosure that is necessitated by a desire to enhance the competitiveness and overall empowerment of ILCs in their participation in the global economy. The limitations of each of the modalities in this regard, and the conditions that necessitate an IP-based approach to protection, as considered in this Chapter, allow for a shift in strategy towards a focused approach of TK protection. Such a protection system can possibly be designed based on pertinent models of IP that may fit a particular category of TK: TKBAPs.

Given the increasing awareness of the valuable potential of TKBAPs to commercial viability, a protection system for TK should incorporate a form of IP-based protection fashioned, or refashioned, to meet the needs and expectations of ILCs. In this respect, this Chapter has shown that GIs have gained broad attention in many forums where they are considered important tools to protect TKBAPs.

³⁶³ See discussion in above Section 4.2; Also see detailed discussion in Brad Sherman, “From the Non-original to the Ab-original: A history” in Brad Sherman & Alain Strowell, eds, *Of Authors and Origins: Essays on Copyright Law* (New York: Oxford University Press, 1994); James Boyle, *The Public Domain: Enclosing the Commons of the Mind* (London: Yale University Press, 2008).

The second part of the thesis examines the applicability of GIs as forms of IP-based protection for TKBAPs, based on their relevance in tackling economic, biodiversity, food security, and cultural challenges to ILCs as indentified in Chapter Three. The next Chapter surveys the legal terrain in the regulation, operation, and protection of GIs under different legal frameworks. The discussion analyzes the scope, nature, and form of GIs protection in national and international spheres. The Chapter also identifies the unique features of GIs that accommodate the multi-dimensional nature of TKBAPs, and develops theoretical foundations for their use as protective instruments for TKBAPs.

PART TWO: THE APPLICABILITY OF GEOGRAPHICAL INDICATIONS FOR
PROTECTING TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL
PRODUCTS

CHAPTER 5: GEOGRAPHICAL INDICATIONS AND THEIR LINK TO TRADITIONAL KNOWLEDGE

5.1 INTRODUCTION

The discussion in the first part of the thesis identified problematic areas in the protection of TK and TKBAPs in international IP law and policy. The sheer volume of initiatives, modalities, and techniques for protecting TK in the various forums indicates the significant interest in addressing these problems in multiple contexts under international law. Regarding the use of IP tools to protect TK-based products, GIs emerged as potential instruments for the purpose in view of the challenges ILCs face in the global economy.

This Chapter locates GIs in the current IP landscape by examining the nature, form, and extent of their protection in national, regional and international legal frameworks. In order to understand the functional features of GIs that lend support to their applicability to protect TKBAPs, the discussion in this Chapter draws attention to the structural features, legislative frameworks, and policy rationale for GIs protection. It appraises recent developments regarding the protection of GIs, and identifies issues that often arise in multilateral negotiations and in international disputes over the subject. The discussion also examines the link between TK and GIs by outlining common features of the two concepts, and considers the justifications for the use of GIs to protect TKBAPs in light of contemporary IP theories.

Section 5.2 and Section 5.3 briefly describe the legal contexts of origin and development of GIs protection. Section 5.4 surveys the current protection of GIs in the

WTO under the TRIPS Agreement, and considers the future protection of GIs under the multilateral trade negotiation within the WTO. Overall, the analysis covers the scope of existing and future protection of GIs at the international level in the context of its implication for TKBAPs.

The current scope of GIs protection in the WTO represents a compromise of diverse interests in GIs in member countries. WTO members hold divergent assumptions regarding the nature, form and rationale of GIs protection. A closer examination of these assumptions is essential to understand the interface, or lack thereof, between GIs and TK. In this respect, Section 5.5 examines GIs protection in different jurisdictions, focusing on key stakeholders in the international negotiations over GIs, namely, the US and the EU. This Section analyzes the different theoretical justifications, the distinct policy purposes, and the competing rationales for GIs protection in each jurisdiction. Sections 5.6 and 5.7 briefly highlight major legal and practical issues at stake in the international negotiations and the disputes that arise over the differences in the regulation of GIs. Section 5.6 discusses the issues of genericity in GIs, and Section 5.7 focuses on the relationship between GIs and trademarks.

To assess the suitability of GIs to protect TKBAPs, Section 5.8 illustrates the structural and functional fitness of GIs as protective instruments for TK. After a brief overview of the distinction and similarity of GIs to major strategies for differentiation of agricultural products in Section 5.9, Section 5.10 explores normative justifications under IP law for the adoption of GIs as instruments to protect TKBAPs. This Section discusses

various conceptual lenses for viewing the use of GIs in recognition of ILCs' proprietary rights over their TKBAPs.

5.2 ORIGINS OF GEOGRAPHICAL INDICATIONS

As a form of IP, GIs received wide attention after their inclusion in the TRIPS Agreement of 1994. However, they have deeper roots in long-established international treaties and in the law of different jurisdictions. In order to understand the structure and function of the current forms of GIs, understanding the evolution of their use is essential.

GIs are part of the most ancient distinctive designations the use of which dates back to the time when brick-makers in ancient Egypt indicated the origin-related quality of bricks and stones with which pyramids were made.¹ The use of GIs to designate the quality of products can also be traced to ancient Greece, where Thasian wine (from the island of Thasos in the Macedonia region of Greece) attracted the premium price of one drachma per litre.²

Aspects of present-day GIs originate from the Civil Law traditions of the thirteenth century during which products like *Parmigiano* or *Comté* were popular in present day Italy and France, respectively.³ As the discussion below demonstrates, the process of

¹ European Commission, note 100, Chapter 1. Other examples of the use of origin to identify quality of products include Egyptians' use of seals and marks in the 12th century to indicate the vintage and provenance of wine. See Dwijen Rangnekar, *Geographical Indications and Localization: A Case Study of Feni*, CSGR Report (2009) online: <www.esrc.ac.uk/my-esrc/.../4fcff116-d65b-4ed1-8540-9e10c2dfcca9> [Rangnekar, "Localization"].

² Drachma is a currency unit in Greece until replaced by the euro. See European Commission, *ibid*.

³ Named after the producing areas near Parma and Reggio of Italy, *Parmigiano* is a hard granular cheese, cooked but not pressed. Similarly, *Comté* is a French cheese made from unpasteurized cow's milk in the Franche-Comté region of eastern France. See Giovanni Boccaccio et al, *Opere volgari di Giovanni*

developing GIs has relatively long roots in France.⁴ France introduced the early GIs protection in the form of prohibition of false designation of geographical origin.⁵ In 1824, criminal statutes were enacted to proscribe misrepresentations in the labelling of the geographic origin of a product.⁶ Given that the focus of these measures lies just on criteria of physical geography, they were considered inadequate to protect products that have distinctive quality.⁷

In 1919, therefore, France introduced legislation for stronger protection of “appellations of origin.”⁸ This legislation sets criteria of quality as a factor in the production of goods covered under the protection.⁹ In addition, it provides that a product qualifies for appellations of origin only if all of its ingredients come exclusively from the region indicated by the appellation.¹⁰ Because of these developments, the criteria for the

Boccaccio: Decameron [incl. Fiacchi's “Lezione,” “Osservazioni” ed “Il corbaccio” (New York: Peril Magheri, 1827); Comte.com, *Comte, 1st A, Cheese in France: A Traditional Craft Over A Thousand Years Old* online: < <http://www.comte.com/comte-1st-aop-cheese-in-france,6,0,17,2,1.html>>.

⁴ See Section 5.5, below.

⁵ In 1411, for example, King Charles VI granted a charter protecting Roquefort cheese makers and the caves within which the cheese is still produced. Christina White, “Something Is Rotten in Roquefort” *Businessweek* (31 Dec 2001) online: <http://www.businessweek.com/magazine/content/01_53/b3764082.htm>; also see P. Roubier, *Le Droit De La Propriete Industrielle* cited in Lori E. Simon, “Appellations of Origin: The Continuing Controversy” (1983) 5 Nw J Int’l L & Bus 132 at 137.

⁶ See Louis C. Lenzen, “Bacchus in the Hinterlands: A Study of Denominations of Origin in French and American Wine-Labeling Laws” (1968) 58 Trademark Rep 145 at 175; Roubier, *ibid.* at 755-756.

⁷ Lenzen, *ibid.* at 178; see also Catherine Seville, *EU Intellectual Property Law and Policy* (Cheltenham: Edward Elgar, 2009).

⁸ See Leigh Ann Lindquist, “Champagne or Champagne? An Examination of US Failure to Comply with the Geographical Provisions of the TRIPS Agreement” (1999) 27 Ga J Int’l & Comp L 309 at 330–32; also see Simon, *supra* note 5 at 138.

⁹ Lindquist, *ibid.* at 332 citing *Code de la consommation*, Art. L.115-5 (Fr.)

¹⁰ *Ibid.*

protection of appellations of origin evolved in two different ways, providing a basis for the modern day distinction between appellations of origin and indications of source.¹¹ The distinction between the two concepts has featured in the evolution of the concept of GIs at the international level, as well. The following Section provides additional discussion of the development of GIs in pre-TRIPS era.

5.3 HISTORICAL DEVELOPMENT OF THE INTERNATIONAL PROTECTION OF GEOGRAPHICAL INDICATIONS

At the international level, the protection of GIs has its origin in the *Paris Convention of 1883*, the earliest international treaty on the protection of IP.¹² The Paris Convention deals with indications of source through detailed provisions, and recognizes Appellation of Origins (AOs) as one aspect of IP.¹³ The protection of indication of source was strengthened by the establishment of a special union under the *Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods*.¹⁴ The Madrid Agreement prevents not only the use of “false” indications of source – as did the Paris Convention – but also proscribes the use of indications of source that are literally true but deceptive in their nature.¹⁵ The agreement provides exceptional treatment for “regional

¹¹ See Chapter 2 Section 2.7 above, for distinction between appellations of origin and sources of indications.

¹² Paris Convention, note 204, Chapter 2.

¹³ See *ibid.* Arts. 1 (2), 9 (1), 10 and 10*ter*.

¹⁴ See Madrid Agreement, note 209, Chapter 2.

¹⁵ Indications of source become literally true but deceptive in their nature when a given geographical name used for products originating from a certain country is used by other producers from a place in another country that has the same name. See Madrid Agreement, note 209, Chapter 2, Art 1(1) & (2).

appellations concerning the source of products of the vine.”¹⁶ However, the Madrid Agreement attracted a limited number of signatories because its protection does not extend to AOs.¹⁷

The Lisbon Diplomatic Conference of 1958 sought to improve the international protection of AOs, and thus, adopted the *Lisbon Agreement for the Protection of Appellations of Origin and their International Registration*.¹⁸ Unlike the Madrid Agreement which was concerned with just indications of source, the Lisbon Agreement is primarily concerned with the protection of AOs. The Lisbon Agreement incorporates the provisions of the Paris Convention and the Madrid Agreement in relation to indications of source; it also introduced a new standard of protection for AOs. The Lisbon Agreement provides for the prohibition of not only a misleading use of a protected AOs, but also of “any usurpation or imitation [of protected AOs], even if the true origin of the product is indicated or if the appellation is used in translated form.”¹⁹ The Agreement also creates a system of international register for AOs that are already protected in the country of origin of contracting parties, so that such AOs are published and notified to all other contracting parties.²⁰

¹⁶ The protection of indications of source in relation to products of vine is determined by the country in which protection is sought, instead of the country of origin. See Madrid Agreement, note 209, Chapter 2, Art. 4.

¹⁷ See WIPO, “Historical Background” note 271, Chapter 2, para. 49.

¹⁸ Lisbon Agreement, note 128, Chapter 1.

¹⁹ Lisbon Agreement, note 128, Chapter 1, Art. 3.

²⁰ See the *Lisbon System for the International Registration of Appellations of Origin*, online: WIPO <<http://www.wipo.int/lisbon/en/>>; Lisbon Agreement, note 128, Chapter 1, Art. 1.

In the mid-1970s, WIPO's Committee of Experts prepared a draft treaty to revise the Lisbon Agreement in a manner that accommodates the terminological distinctions between AOs and indications of source.²¹ To accommodate the two concepts within its scope of protection, the draft treaty adopted the expression of "geographical indications" for the first time.²² The work on the draft treaty was discontinued, however, following preparations for a comprehensive revision of the Paris Convention in the late 1970s.

The proposal for the Revision of the Paris Convention adopted the broader terminology of "geographical indications," and included proposals to resolve potential conflicts between AOs and trademarks.²³ A significant feature of the proposal for the draft Revision relates to the special consideration that it provided for developing countries.

In the course of international trade in agricultural products, industrialized countries have permitted the registration of geographical names from developing countries where distinctive agricultural products are cultivated as trademarks in relation to other plant varieties.²⁴ This registration poses a particular difficulty to some developing countries in their effort to access larger markets in industrialized countries. As a solution, the draft

²¹ WIPO, *Revision of the Lisbon Agreement or Conclusion of A new Treaty (Committee of Experts on the International Protection of Appellations of Origin and Other Indications of Source* (Second Session, Geneva, December 1 to 5, 1975) TAO/II/3 online : <http://www.wipo.int/mdocsarchives/TAO_II_75/TAO_II_3_E.pdf>

²² *Ibid.*, para. 4.

²³ The revision proposal provided for extensive protection of appellations of origin and indications of source against their use as trademarks. See WIPO, *Basic Proposal* (Diplomatic Conference on the Revision of the Paris Convention, Geneva, February 4 to March 4, 1980) PR/DC/4 at Art. 10quater.

²⁴ See Walter R. Brookhart et al, *Current International Legal Aspects of Licensing and Intellectual Property* (Chicago: American Bar Association, 1980) at 11.

treaty incorporated a provision that allows developing countries to reserve a certain number of potential geographical names so that even if they were not yet used as GIs, they could not be used as trademarks in other countries in the future.²⁵

Work on the revision of the Paris Convention and on the amendment of the Lisbon Agreement was not completed mainly due to the limited acceptance of the two instruments among WIPO members. Instead of amending and revising the treaties, WIPO members felt that effective protection of GIs could only be achieved through the establishment of a new worldwide treaty.²⁶

WIPO established the Committee of Experts on the International Protection of Geographical Indications, in the hope of drafting a treaty for GIs protection that is acceptable to most WIPO members.²⁷ Efforts to draft an agreement for the international protection of GIs continued after the establishment of the Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications (SCT) in WIPO.²⁸

²⁵ *Supra* note 23.

²⁶ See WIPO, *The Need for a New Treaty and its Possible Contents* (Committee of Experts on the International Protection of Geographical Indications, First Session, Geneva, May 28 to June 1, 1990) GEO/CE/1/2; also see WIPO, “Historical Background”, note 271, Chapter 2, para. 84.

²⁷ Among measures adopted to make the “new treaty” attractive include proposals for the replacement of the concepts of “appellation of origin” and “indication of source” by the notion of “geographical indication” to cover all existing concepts of protection; establishment of a new international registration system; flexibility in the manner GIs can be protected in the country of origin, rather than requiring a specific form of protection; and protection of geographical indications against degeneration into generic terms. See WIPO, “Historical Background”, note 271, Chapter 2, para. 82.

²⁸ See WIPO, *General Report* (Adopted by the Assemblies of the Member States OF WIPO Thirty-Second Series of Meetings, Geneva, March 25 to 27, 1998) A/32/7, para.93.

However, no consensus has been reached to date regarding key issues considered pertinent to the establishment of a new treaty.²⁹

So far, we have seen that the international protection of GIs developed since the recognition of AOs and indications of source in the Paris Convention and their comprehensive coverage under the Lisbon Agreement. WIPO achieved significant progress in its attempts to revise and amend the two instruments. Though the negotiation did not result in a new treaty, some accomplishments are of interest to for my purposes here.

In an effort to increase the participation of developing countries in the Lisbon system, WIPO proposed a special consideration for distinctive agricultural products from developing countries. In addition, the WIPO process contributed to the development of a broad definition of “geographical indications” which, in terms of scope of protection, makes GIs plausible instruments to accommodate TKBAPs.³⁰ Moreover, the scope of protection for AOs in the WIPO-administered Lisbon Agreement applies equally to any

²⁹ For latest developments in the negotiations of the WIPO for better protection of GIs, see WIPO, *Outcome of Third Session of Working Group on the Development of the Lisbon System (Appellations of Origin)* Third Session, Geneva, May 23 to 27, 2011, LI/WG/DEV/3/3, online: WIPO <http://www.wipo.int/meetings/en/details.jsp?meeting_id=22282>

The issues upon which consensus was sought as a basis for a new treaty include:

What should be the subject matter of protection? What should be the general principles of protection, including the conditions of protection, its contents, and the mechanisms for its enforcement and for setting disputes arising under the new Treaty? Should there be a system of international registration and, if so, what should it consist of?

See WIPO, “Historical Background”, note 271, Chapter 2, para. 84

³⁰ See the relevance of the broad definitional scope of GIs to the applicability of GIs to protect TKBAPs in above, Chapter 2 Section 2.7.

category of product, unlike the TRIPS Agreement's distinction between wines and spirits vis-à-vis other products.³¹

Reflecting on the historical experience of the implementation of AOs in European countries, the EU has shown a keen interest in the establishment of a treaty for GIs under WIPO.³² The European Community (EC) adopted a system of GIs for all agricultural products in 1992.³³ It also took the initiative to include the subject of GIs in the “trade-related intellectual property” negotiations in the Uruguay Round of negotiations that resulted in the conclusion of the TRIPS Agreement.³⁴

International law-making on GIs, therefore, shifted to the WTO, perhaps as part of the “forum-shifting” trend in international negotiations on IP.³⁵ Given the limited role of developing countries in the Uruguay negotiations,³⁶ it is questionable whether the scope of GIs protection under the resulting TRIPS Agreement reflects the progress in WIPO to provide a special consideration for the names of distinctive agricultural products from

³¹ See Commentary from Francis Gurry - WIPO Director General, *Address at Ceremony to Mark the 50th Anniversary of the Adoption of the Lisbon Agreement*, 31 October 2008 online: WIPO <http://www.wipo.int/about-wipo/en/dgo/speeches/gurry_lisbon_08.html>.

³² GIs has unique historical origins from European countries, particularly, France. See Section 5.5.3, below; see also S Escudero, *International Protection of Geographical Indications and Developing Countries*, South Centre Trade Working Paper No. 10, 2001 at 23; OB Arewa, “TRIPS and TK: Local Communities, Local Knowledge, and Global Intellectual Property Frameworks” (2006) 10 Marquette Intellectual Property Law Review 156 at 160.

³³ See Council Regulation (EC) 1493/1999 of 17 May 1999 on the Common Organization of the Market in Wine, [1999] O.J. L /1791 (laying down general rules on the definition, description and presentation of spirit drinks.)

³⁴ Olufunmilayo B. Arewa, “TRIPS and TK: Local Communities, Local Knowledge, and Global Intellectual Property Frameworks” (2006) 10 Marquette Intellectual Property Law Review 156 at 160.

³⁵ See Chapter 4 Section 4.2, above, for discussion of negotiations process over IP and the phenomenon of “forum-shifting.”

³⁶ See Chapter 4 Section 4.3.1, above.

developing countries. The following Section examines the protection of GIs under the TRIPS Agreement, and considers GI-related issues in ongoing negotiations in the WTO.

5.4 GEOGRAPHICAL INDICATIONS IN THE WORLD TRADE ORGANIZATION

The negotiation process for the protection of GIs in the Uruguay Round of negotiations was polarized between the EC and the US, both of which introduced contradictory proposals. The EC recommended comprehensive protection for GIs through specific provisions in the TRIPS Agreement.³⁷ This protection applies to all agricultural products, including products of the vine, to the extent that such protection is accorded in the country of origin. Though the US took “a strongly [sic] pro-protectionist, pro-property position” in the Uruguay Round of negotiations, it opposed comprehensive protection of GIs in the manner the EU proposed.³⁸ The US proposed to protect only GIs “that certify regional origin by providing for their registration as certification or collective marks [through the trademarks regime and thus without a need for specific GIs regime].”³⁹ As such, the US opposed the inclusion of specific provisions in the TRIPS Agreement for the protection of GIs.⁴⁰ In contrast, a group of developing countries, led by Brazil and India, called on countries “to provide protection for geographical indications including

³⁷ Gervais, “Drafting History”, note 214, Chapter 2 at 294; Sergio Escudero, *International Protection of Geographical Indications and Developing Countries*, South Centre Trade Working Paper No. 10 (2001) at 23.

³⁸ See Farley, note 240, Chapter 4, at 75.

³⁹ GATT Secretariat, *Communication from the United State*, 11 May 1990 (GATT doc. MTN.GNG/NG11/W/70) online: WTO < http://www.wto.org/gatt_docs/English/SULPDF/92100144.pdf> at Art. 18 (“contracting parties shall protect geographic indications that certify regional origin by providing for their registration as certification or collective marks.”).

⁴⁰ See Albrecht Conrad, “The Protection of Geographical Indications in the TRIPS Agreement” (1996) 86 *Trademark Rep* 11 at 29.

appellations of origin against any use which is likely to confuse or mislead the public as to the true origin of the good.”⁴¹ Differences in the scope and nature of GIs protection generated intense arguments between the EC and the US as each routed for different treaty texts.⁴² The final draft of the negotiations provided for the protection of *geographical indications* as autonomous IP rights for the first time.⁴³

5.4.1 SCOPE AND NATURE OF PROTECTION

Unlike the WIPO-administered treaties, the TRIPS Agreement provides for a strong enforcement of IPRs in general, and GIs in particular, through in-built procedures of compliance, monitoring, and dispute settlement.⁴⁴ Largely as a compromise between the US and EU proposals, the TRIPS Agreement presents two levels of GIs protection for different agricultural products: A basic level of protection for all agricultural products, and a higher level of protection for wines and spirits.⁴⁵ Art. 22 provides for basic level of GIs protection for all agricultural products, requiring WTO members to provide:

⁴¹ GATT Secretariat, *Communication from Argentina, Brazil, Chile, China, Colombia Cuba, Egypt, India, Nigeria, Peru, Tanzania and Uruguay*, 14 May 199(GATT doc. MTN.GNG/NG11/W/71), Art 9 online: WTO <http://www.wto.org/gatt_docs/English/SULPDF/92100147.pdf>.

⁴² *Communication, European Community—Draft Agreement on Trade-Related Aspects of Intellectual Property Rights*, MTN.GNG/NG11/W/68 (29 March 1990); *Communication from United States—Draft Agreement on the Trade-Related Aspects of Intellectual Property Rights*, MTN.GNG/NG11/W/70 (11 May 1990).

⁴³ See Gervais, “Drafting History”, note 214, Chapter 2 at 294 [*emphasis added*] (noting that the TRIPS Agreement introduced the concept of “geographical indications” in a groundbreaking manner); also see GATT Secretariat, “*The Dunkel draft*” from the GATT Secretariat: *Draft Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations*, 20 December 1991 (Geneva: W.S. Hein, 1992).

⁴⁴ See TRIPS Agreement, note 13, Chapter 1, part III, V & VII.

⁴⁵ Christine Haight Farley, “Conflicts between US Law and International Treaties Concerning Geographical Indications” (2000) 22 Whittier L Rev 73 at 77 [Farley, “Conflicts”]

[T]he legal means for interested parties to prevent:

- (a) the use of any means in the designation or presentation of a good that indicates or suggests that the good in question originates in a geographical area other than the true place of the origin in a manner which misleads the public as to the geographical origin of the good;
- (b) any use which constitutes an act of unfair competition within the meaning of Article 10*bis* of the Paris Convention...

In short, the basic level of protection requires WTO members to declare illegal any use of a GI in a manner that misleads the public or in a way that may constitute an act of unfair competition. This protection is applicable to any product that bears a GI.

Art. 22 makes it incumbent upon aggrieved parties to prove not only that the use of a GI is not correct, but also that the use of GIs may mislead the public, or that it constitutes unfair competition. The protection against unfair and misleading use of GIs means that the level of protection in a particular case may vary in accordance with the domestic legal system of a member state. The use of a designation identical or similar to a GI may be possible, in this case, under a number of scenarios.

The use of a designation similar to another GI may be allowed, for example, because the indication has become or has always been a generic term in another country.⁴⁶ Such a use may also be possible in cases where a designation that resembles a GI is protected as a trademark and perceived by consumers as such.⁴⁷ In this case, the designation may be considered indicative of a particular manufacturer and not the geographical origin of the product. In addition, a designation that is similar to a protected GI may be sufficiently

⁴⁶ See Section 5.7 below, for discussion of generic use of GIs.

⁴⁷ See discussion below Section 5.5; also see discussion of the dispute between the US and the EU in the case of *European Communities – Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs* (DS174, 290).

different from the GI to the extent that consumers are not misled as to the origin of the product.⁴⁸

The use of a designation or indication that is similar to a protected GI might not be prohibited under the three circumstances because such a use may not mislead consumers, or may not constitute unfair competition.⁴⁹ Therefore, the protection of GIs under Art. 22 is not absolute. Effective GIs protection under Art. 22 entails proof of “unfair competition” or “misleading of the public.” This may involve arduous and costly legal proceedings, especially in cases when the indication is used in another jurisdiction.⁵⁰

Under Art. 23, the TRIPS Agreement provides a higher level of protection to GIs for wines and spirits. Wines and spirits enjoy an absolute degree of exclusivity, which prevents the use of designations similar or identical to a GI by others in all cases. Proof is not required on the degree of or the existence of consumer confusion and unfair competition. The absolute degree of protection for wines and spirits prohibits the use of a GI or its translated form even with such measures as the use of clear indications of the true geographical origin of the good in question, or the use of the GI sign or term “accompanied by expressions such as ‘kind’, ‘type’, ‘style,’ ‘imitation’ or the like.”⁵¹ In

⁴⁸ This occurs, for example, in the case of GI-protected South African port wine. Competitors in other countries create a new association to their products in consumers’ mind with such descriptions as a “port style wine” produced in the United States, Canada, and Australia. See William A. Kerr, “Enjoying a Good Port with a Clear Conscience: Geographic Indicators, Rent Seeking and Development” (2006) 7 *The Estey Centre Journal of International Law and Trade Policy* 1-14 at 10.

⁴⁹ See discussion in note 222, Chapter 1.

⁵⁰ See Chapter 6 Section 6.4.2.2, below, for discussion of the implication of the differential levels of GIs protection to protect TKBAPs.

⁵¹ See TRIPS Agreement, note 13, Chapter 1, Art. 23 (1).

addition, the Agreement provides for the refusal or invalidation of trademarks for wines or spirits that contain GIs that identify other wines or spirits.⁵²

The differential level of protection between GIs for wines or spirits and those for other products was adopted during the Uruguay negotiations as a compromise between the US and the EC.⁵³ By focusing on wines and spirits, the compromise does not address the interest of developing countries that sought for a higher level of GIs protection for their distinctive agricultural products, most of which are TKBAPs.⁵⁴

In view of the controversy that ensued from the differential level of protection for different products, Art. 24.1 of the TRIPS Agreement obliges WTO members “to enter into negotiations aimed at increasing the protection of individual geographic indications under Art.23.”⁵⁵ In addition, Art. 24.1 warns WTO members against the use of the numerous exceptions to the protection of GIs provided under paragraphs 4 through 8 as an excuse for refusal to conduct negotiations.⁵⁶ To facilitate the protection of GIs for wines, the Agreement provides that “negotiations shall be undertaken in the Council for

⁵² See *Ibid.* at Art. 23 (2).

⁵³ See discussion above, Section 5.4. As previously noted, the US opposed the inclusion of specific GIs provisions in the TRIPS Agreement, and opted for a model that mimicks its own trademark based protection. The EC, on the otherhand, proposed for the inclusion of broad provisions of GIs that accommodate the EC system of GIs adpted in 1992.

⁵⁴ See the position of developing countries in the Uruguay negotiations regarding GIs in discussion above, Section 5.4; also see GATT Secretariat, *Communication from Argentina, Brazil, Chile, China, Colombia Cuba, Egypt, India, Nigeria, Peru, Tanzania and Uruguay*, 14 May 199(GATT doc. MTN.GNG/NG11/W/71), Art 9; also Ernesto D. Aracama-Zorraquin, “The Protection of Geographic Indications in South America” in Jehoram, Herman Cohen *Protection of Geographic Denominations of Goods and Services* (Alphen aan den Rijn: Sijthoff & Noordhoff, 1980).

⁵⁵ TRIPS Agreement, note 13, Chapter 1.

⁵⁶ See exceptions to the protection of geographical indications in TRIPS Agreement, note 13, Chapter 1, Arts. 24 (4)-(8).

TRIPS concerning the establishment of a multilateral system of notification and registration of geographical indications for wines eligible for protection in those Members participating in the system.”⁵⁷ Accordingly, WTO members started negotiation over GIs soon after the conclusion of the TRIPS Agreement.

5.4.2 ONGOING NEGOTIATION OVER GEOGRAPHICAL INDICATIONS

Current WTO negotiations over GIs have two aspects: The first aspect is the negotiation to extend the enhanced protection for wines and spirits to all other agricultural products; the second is establishing a multilateral system of notification and registration for wines and spirits. In regard to extending the higher level of GIs protection for wines and spirits to all other agricultural products – a proposition that has particular relevance to this thesis – the debate in the WTO is effectively polarised between two camps that do not necessarily fit within the traditional WTO lines of developing countries and developed countries.⁵⁸ On the one hand, the EC and its supporters seek to achieve a higher level of protection for a wide range of agricultural products, in addition to wines and spirits. On the other, the US and its allies (mainly Canada, Australia, and Argentina) oppose extending the existing protection for wines and spirits to other products.⁵⁹

The group of countries that oppose the expanded protection of GIs consider proposals for enhanced GI protection of agricultural products as another form of agricultural

⁵⁷ See TRIPS Agreement, note 13, Chapter 1, Art. 23 (4).

⁵⁸ See Catherine Grant, “Geographical Indications: Implications for Africa” (2005) 6 *Tralac Trade Brief* at 3.

⁵⁹ See Note 222, Chapter 1.

protectionism.⁶⁰ These countries do not even consider the text of the TRIPS Agreement as allowing sufficient negotiating mandate to extend the enhanced protection of GIs for products other than wines and spirits.⁶¹ The US argues that amending the TRIPS Agreement to extend a higher level of GI protection to agricultural products other than wines and spirits imposes “significant new costs on WTO members, especially developing and least developed members, which will far outweigh any potential benefits.”⁶² Consequently, the US opposes demands for the expanded protection of GIs on the ground that these efforts would impose economic burden on WTO members.

The US and its allies did not question the negotiation mandate to establish a multilateral register system under the WTO.⁶³ However, the US-led group insists on a voluntary system of registry that includes wines and spirits only, whereas, the EU and its supporters seek to include agricultural goods in a mandatory registry system for all members.⁶⁴

To relate this discussion to the primary focus of this thesis, i.e., the role of GIs to protect TKBAPs, it can be observed that the TRIPS Agreement lays down only minimum

⁶⁰ See generally Panizzon, note 19, Chapter 3.

⁶¹ See Office of the United States Trade Representative (USTR), “US and Other Trade Partners Present Positions and Proposals to Prevent Unauthorized Use of Geographic Names,” USTR Press Release 20 September 2002 online: <http://www.ustr.gov/Document_Library/Press_Releases/2002/September/US_Other_Trade_Partners_Present_Positions_Proposals_to_Prevent_Unauthorized_Use_of_Geographic_Names.html>.

⁶² *Ibid.*

⁶³ Art. 23(4) of the TRIPS Agreement clearly provides the mandate for negotiation to establish multilateral registry. See TRIPS Agreement, note 13, Chapter 1.

⁶⁴ See Tim Josling, “The War on Terroir: Geographical Indications as a Transatlantic Trade Conflict” (2006) 57 *Journal of Agricultural Economics* 337 at 338.

standards of protection. As such, member states may, at their discretion, provide for GIs protection standards that are higher than those the Agreement requires. They can also adopt a system of registry that suits their domestic needs and interests. As far as the adoption of GIs in the domestic policy of a country is concerned, therefore, the pace of progress in the current negotiation over GIs in the WTO will not affect countries that may choose to adopt a higher level of GIs protection based on their domestic realities. Given their need for IP-based protection that empowers ILCs,⁶⁵ developing countries may decide on the level of GIs protection that accommodates agricultural products of their choice, including those products based on TK. However, these products cannot enjoy the exclusive protection that attaches to wines and spirits in other countries.

The basic level of protection under the TRIPS Agreement makes it difficult to enforce GIs rights outside a country of origin because it subjects rights holders to a significant burden to prove and enforce the rights in cases of unfair competition and as regards the misleading use of a GI by competitors.⁶⁶ In addition, the establishment of a multilateral system of GIs registration and notification at the global level, as set out in the ongoing WTO negotiations, would help ILCs to easily prove their rights in foreign jurisdictions. Perhaps a mandatory system of GIs registry would oblige domestic authorities in other jurisdictions to consult and take into account the register when making decisions regarding the registration of GIs or trademarks. The relevance of categorized levels of GIs

⁶⁵ See Chapter 4 Section 4.7, above.

⁶⁶ See discussion above 5.4.1.

protection to the question of applicability of GIs to protect TKBAPs is considered in some detail below.⁶⁷

For the aforementioned reasons, progress on the agenda items of negotiation over GIs remains crucially important in assessing the instrumentality of GIs to protect TKBAPs. Given the diverse interests and the distinct country positions on the subject, the direction of the current negotiations over GIs is unknown.⁶⁸ Competing national interests that underlie the protection of GIs in domestic legislation primarily guide international standard setting. The status and future of the international protection of GIs and, thus, the role of GIs as modalities of protecting TKBAPs cannot, therefore, properly be assessed without an understanding of differences in the form and nature of GIs protection in national jurisdictions.

The discussion in the following Section examines the dominant forms of GIs protection in the framework of major jurisdictions, namely, the US and the EU. The Section provides an understanding of divergences in the rationales for and in the approaches to the protection of GIs across these jurisdictions.

5.5 GEOGRAPHICAL INDICATIONS IN NATIONAL AND REGIONAL JURISDICTIONS

WTO members protect GIs in various forms of protection. Since the TRIPS Agreement does not require members to adopt a particular legal means to carry out the obligation of protecting GIs, states have retained different forms of protection in their

⁶⁷ See Chapter 6 Section 6.4.2.2, below.

⁶⁸ See discussion, above, Chapter 5, Section 5.4.2.

jurisdictions.⁶⁹ At the national level, states protect GIs by two dominant systems: Protection through a special *sui generis* system, and protection through conventional IPRs, particularly, through the trademarks regime.

The *sui generis* system refers to the system of GIs protection, mainly in European countries, which provide protection through legislation directly concerned with GIs. The trademark-based protection of GIs is provided in many common law jurisdictions through trademarks legislation, the rules of passing off, and the law of unfair competition – all within the framework of the conventional IPRs regime.

Significant differences can be seen in the protection of GIs within the two systems. As WIPO notes, these differences bear on important questions that determine the instrumentality of GIs, such as the “condition of protection, entitlement to use and scope of protection.”⁷⁰ For this reason, the following sub-Sections elaborate on the dominant systems of GI protection as between the US and the EU.

5.5.1 THE UNITED STATES’ APPROACH TO GEOGRAPHICAL INDICATIONS

GIs do not have jurisprudential precedent in the common law in general, and in US legal and jurisprudential history in particular.⁷¹ However, various indications of geographical origin have been used in these jurisdictions in the same sense that GIs were used in other jurisdictions. For example, Schechter attests to the use of “geographical

⁶⁹ See TRIPS Agreement, note 13, Chapter 1, Art. 22 (2), providing that “Members shall provide the legal means for interested Parties.”

⁷⁰ See WIPO, “Historical Background”, note 271, Chapter 2.

⁷¹ See Jim Chen, “A Sober Second Look at Appellations of Origin: How the United States Will Crash France's Wine and Cheese Party” (1996) 5 Minn J Global Trade 29.

trademarks” in relation to different products, such as simple manufactured goods and agricultural products since the sixteenth and seventeenth centuries.⁷²

In terms of policy, the US does not consider GIs as a separate category of IP. Prior to TRIPS, in the post-TRIPS period, the US protects GIs through its trademarks law. Like other common law jurisdictions, it utilizes certification marks, collective marks, and in some cases, ordinary trademarks. Generally, the protection of GIs through these mechanisms in the US and in other common law jurisdictions stands as an exception to the rule that individual trademarks must not be geographically descriptive.⁷³

Certification marks are marks that indicate that the goods that bear them have certain characteristics, including geographical origin. According to the US Trademarks Act, certification marks can be described as “any word, name, symbol, or device used by a party or parties ... to certify regional or other origin, material, mode of manufacture, quality, accuracy, or other characteristics of . . . [the] goods or services or the work or labour on the goods or services.”⁷⁴ Thus, certification marks may indicate any of the following three attributes of a good: 1) Regional or other origin; 2) Material, mode of manufacture, quality, accuracy or other characteristics of the goods/services; or 3) The performance of the work or labour on the goods/services. Certification marks protect GIs

⁷² Frank I. Schechter, *The Historical Foundations of the Law Relating to Trademarks* (Clark: The Lawbook Exchange, 1925) at 88, 126; see also M.G. Coerper, “The Protection of Geographical Indications in the United States of America, with Particular Reference to Certification Marks” (1990) *Industrial Property* 232.

⁷³ For example, the Lanham Act prohibits the registration of marks that are “primarily geographically descriptive.” 15 USC § 1052 (e) (1988); similarly, the Canadian Trademarks Act prohibits the registration of marks as trademark if they are “clearly descriptive ... of their place of origin.” *Trade Marks Act*, R.S.C. 1985, c. T-13, S. 12 (1) (b).

⁷⁴ § 45 15 USC. § 1127 (2008).

when marks are used to certify “regional...or other origin” of a product. The owner of the marks certifies that the goods are compliant with requirements of geographical origin of production, but does not use the marks for his/her products.⁷⁵

Collective marks are broadly similar to certification marks; unlike certification marks, collective marks must be owned by a collective body, such as producers’ association or trade association whose members are entitled to use the mark on their products. In the case of collective trademarks that protect GIs, membership in the association that owns the collective mark is, generally speaking, subject to compliance with requirements for the geographical area of production of the goods on which the collective marks is used.

In addition, GIs may be protected in the US as ordinary trademarks if, through continuous use, consumers associate a geographical name with a particular manufacturer. In such cases, the geographic name is deemed to have acquired a “secondary meaning” in addition to the primary meaning of denoting the geographical place; thus, it has “acquired distinctiveness.” The GI may, therefore, be registered as any other trademark.⁷⁶

GIs protection may also be achieved in common law jurisdictions through rules of unfair competition and passing off and, in some cases, through administrative statutes that

⁷⁵ See United States Patent and Trademark Office, *Geographical Indication Protection in the United States*, at 3 online: USPTO <http://www.uspto.gov/web/offices/dcom/olia/globalip/pdf/gi_system.pdf>.

⁷⁶ Certain categories of marks may not be registered even if they acquired secondary meaning. Sections 1052 (e) (3) of the US Lanham Act expressly bar registration of marks that when used in connection with the goods of the applicant is primarily geographically deceptively misdescriptive of them. See 15 USCA 1052 (e) (3). See 15 USCA 1052 (f). See the equivalent of this restriction in the Canadian Trademarks Act, *Trade Marks Act*, R.S.C. 1985, c. T-13 s 12. (1) (b).

prohibit false statements in advertisements and labelling.⁷⁷ The protection of GIs through the prohibition of unfair competition is achieved through remedies for competitors' unlawful or dishonest practices as to the geographical origin of the GI product.⁷⁸ A product acquires GIs protection under the common law rules of passing off if the product has established goodwill or reputation in the market. In this case, a claimant of GIs rights in relation to a product acquires remedies if another person misrepresents his products as being the GI products of a claimant, thereby, misleading the public, and causing the plaintiff damages.⁷⁹ Finally, protection for GIs may be achieved in the US through regulatory measures that focus on consumer protection or through regulations that prescribe acts of honest business practices in relation to geographical origin.⁸⁰

Protection through rules of unfair competition, passing off, and regulatory measures does not constitute protection of property rights in the GIs. Rather, passing off constitutes the protection of a property right in the business or the goodwill that is likely to be injured because of a misrepresentation.⁸¹ Similarly, the law of unfair competition protects holders

⁷⁷ See the protection of GIs in Canada in note 259, Chapter 2; see different methods of protecting GIs in different legal systems in WIPO, "Historical Background", note 271, Chapter 2, para. 84.

⁷⁸ The Lanham Act also prohibits the registration of "deceptive" marks See 15 USC §1052(a) (1988). Also, a right of action exists against use of a mark that is likely to cause confusion or to deceive. See 15 USC. § 1125 (a); also see Farley, "Conflicts", *supra* note 45 at 79.

⁷⁹ See WIPO, "Historical Background", note 271, Chapter 2, para. 84; see also Institut National Des Appellations D'Origine Des Vins Et Eaux-De-Vie, et al, v. Andres Wines Ltd. et al, (1987) 16 CPR (3d) 385 (Ont. H CJ), affirmed by the Ontario Court of Appeal, (1990) 30 CPR (3d) 279.

⁸⁰ See Mariano Riccheri et al, *Assessing the Applicability of Geographical Indications as a Means to Improve Environmental Quality in Affected Ecosystems and the Competitiveness of Agricultural Products*, The IPDEV project Workpackage 3 Final Report online: <http://ideas.repec.org/p/ess/wpaper/id847.html> at 13.

⁸¹ See note 260, Chapter 2 at 5, citing A.G. Spalding & Bros. v. A.W. Gamage, 32 RPC 273 (1915).

of GIs rights against unauthorised use by third parties.⁸² As such, these methods of GIs protection might not be options for ILCs who want recognition of IP rights for their TKBAPs.

All forms of GIs protection reviewed in this Section provide the basic level of protection that the TRIPS Agreement requires its Members to reciprocally extend to other Members' GIs. Concerning wines and spirits, the US and other common law jurisdictions, including Canada, have amended their trademarks law to be compliant with the higher standard of protection under the TRIPS Agreement.⁸³

5.5.2 EUROPEAN UNION'S APPROACH TO GEOGRAPHICAL INDICATIONS

As previously explained, countries in the EU have a history of protecting GIs through a complex system of *sui generis* legislation.⁸⁴ The EU system of GIs evolved from traditions of the individual wine-producing members, largely influenced by the system of

⁸² See *supra* note 80 at 27.

⁸³ See, for example, the protection of GIs for wines and spirits under the Trademarks Act: *Trade Marks Act*, R.S.C. 1985, c. T-13 s 12(1) (g) & s 12(1) (h) of the Act stipulate that a trade-mark is not registerable if it is, in whole or in part, a protected geographical indication for wines and spirits, respectively. s 11.14, 11.15 & s 11.18 (2) stipulate heightened protection for GIs for wines and spirits. In addition, representatives of the Canadian government and the EC announced an agreement in June 2003 which, when fully implemented, will remove most wine and spirit names from the list of generic names, and thus, subject to trade-mark protection, under s 11.18(3) & s 11.18(4) of the Trademarks Act. See Antonio Turco, "Generic No More—Expanded Protection of Geographical Indications in Canada" (2003) *Blakes Bulletin on Intellectual Property* 3. In the US, a clause was added to the Lanham Act specifically prohibiting the use of a geographical indication, which when used in connection with wines and spirits, identifies a place other than the origin of the goods. See 15 USC §1051-1127 (1994) at Section 2 (a).

⁸⁴ See Farley, "Conflicts", *supra* note 45 at nn. 2 (noting that "continental European countries such as France, Italy, Germany, and Switzerland still provide a comprehensive system of protection for their domestic geographic indications")

AOs in France.⁸⁵ The *sui generis* system of protection has expanded from the country to the regional level in the EU framework, and to the global arena under the TRIPS Agreement.

The EU protects GIs through a set of legislation which introduces three different types of GIs protection:⁸⁶ Protected Designation of Origin (PDO), Protected Geographical Indication (PGI), and Traditional Specialty Guaranteed (TSG). The EU Regulation 510/2006 covers the first two categories of GIs, and Regulation 509/2006 provides for protection of TSGs.

Art. 2 .1 (a) of the EU Regulation 510/2006 defines PDO as:

[T]he name of a region, a specific place or, in exceptional cases, a country, used to describe an agricultural product or a foodstuff:

- originating in that region, specific place or country
- the quality or characteristics of which are essentially or exclusively due to a particular geographical environment with its inherent natural and human factors, and;
- the production, processing and preparation of which takes place in the defined geographical area.

In light of the conceptual difference in the terminological distinction between AOs and GIs, it can be observed that PDO is defined in a slightly different, but essentially similar manner to AOs.⁸⁷ To qualify for a PDO protection, according to EU Regulation

⁸⁵ See Lori E.Simon, “Appellations of Origin: The Continuing Controversy” (1983) 5 Nw J Int’l L & Bus 132; Michael Blakeney, “Proposals for the International Regulation of Geographical Indications” (2001) J World Intell Prop 629–652.

⁸⁶ See Council Regulation (EC) 510/2006 of 20 March 2006 on the Protection of Geographical Indications and Designations of Origin for Agricultural Goods and Foodstuffs, [2006] O.J. L 93/12; Council Regulation (EC) No 509/2006 of 20 March 2006 on Agricultural Goods and Foodstuffs as Traditional Specialities Guaranteed, [2006] O.J. L 93/1.

⁸⁷ See Chapter 2 Section 2.7 above, for discussion of the conceptual difference between AOs and GIs.

510/2006, the indication has to be the *name* of “a region, a specific place or, in exceptional cases, a country” from which the product originates. In addition, the product needs to have a “quality or characteristic...due exclusively or essentially” to a defined geographical environment. Also, all the production, processing, and preparation of the product should occur within the designated area.

Art. 2.1 (b) of the same regulation defines PGI. The link between the product and attribute of the product seems to be loose in the case of PGIs. Unlike PDO which requires that the “production, processing and preparation” of the product take place in the defined geographical area, the requirement in PGIs is that either the production, processing or preparation of the product take place in the area that the geographical name designates. Thus, a product which is produced in a designated geographical area but processed in another geographical area may be protected under PGI whereas, the same product may not get PDO protection.

PGI protects an agricultural product or a foodstuff with “...reputation or other characteristics ... attributable” to (not “essentially or exclusively due to” as in the case of PDO) the geographical origin. In addition, indirect GIs – indications that do not necessarily suggest geographical origin, but that identify a product as having particular qualities or characteristics – cannot be registered as PDOs. Products with such indications can, however, be registered as PGIs.⁸⁸

⁸⁸ The practical significance of the distinction between PGIs and PDOs has, in this regard, been elaborated in the *Spreewalder Gurken* case in which the Advocate-General of the European Court of Justice argued that:

EU Regulation 509/2006 provides protection for the third type of GI: TSG. Art. 2.1 (c) of the regulation defines TSG as “a traditional agricultural product or foodstuff recognized by the Community for its specific character through its registration under this regulation.” This regulation clarifies elements of TSG, defining the term traditional as “proven usage on the Community market for a time period showing transmission between generations.” “Specific character” is defined as “the characteristic or set of characteristics which distinguishes an agricultural product or a foodstuff clearly from other similar products or foodstuffs of the same category.”⁸⁹ Unlike PGI and PDO, the specific character that a product should possess to qualify for protection under the TSG category derives not necessarily from the geographical origin, but from the “traditional raw materials or ... a traditional composition or a mode of production.”⁹⁰ Therefore, the TSG option accommodates products that are reputed for their traditional character, and which may not qualify for protection under the category of either PDOs or PGIs.

Regulation 510/2006 provides PDOs and PGIs an equal level of protection. Art. 13 offers broad protection for PDOs and PGIs against:⁹¹

(a) any direct or indirect commercial use of a registered name in respect of products not covered by the registration in so far as those products are

[T]he Spreewalder gherkins were known to consumers to originate from the Spreewald area and therefore have certain qualities that makes them eligible for registration as a PDO, rather than just as a PGI, which would have been appropriate had the term been regarded by consumers as simply referring to the style of processing or recipe of the gherluns.

See Opinion of the Advocate-General, 5 April 2001, in *Cad Kuhne GmbH & Co. u. Juho fimmf&ik GmbH G Co. KG*, Case C-269/99

⁸⁹ EC Regulation No 509/2006, *supra* note 86 at Art 2.1 (a) & (b).

⁹⁰ *Ibid.* at Art 4 .1 –Art. 4.2.

⁹¹ Council Regulation 510/2006, *supra* note 86, Art. 13.

comparable to the products registered under that name or in so far as using the name exploits the reputation of the protected name;

(b) any misuse, imitation or evocation, even if the true origin of the product is indicated or if the protected name is translated or accompanied by an expression such as ‘style’, ‘type’, ‘method’, ‘as produced in’, ‘imitation’ or similar;

(c) any other false or misleading indication as to the provenance, origin, nature or essential qualities of the product ...

(d) any other practice liable to mislead the consumer as to the true origin of the product.

As seen in preceding discussion, the scope of protection offered under this provision is equivalent to, the higher level of protection under the TRIPS Agreement for wines and spirits. In addition, TSGs are offered a similar but slightly different protection.⁹²

Applications for PDO, PGI and TSG registration are accompanied by specifications which, among others, include details about the *authentic and unvarying local methods* of production as well as the link between the origin and qualities of the products.⁹³ After the grant of the rights under any of the categories of GIs, EU member states are required to *verify and monitor* the continued application of the specifications in the particular geographical area.⁹⁴

⁹² Unlike an outright prohibition in the use of PGOs and PGIs, the Regulation 509 prohibits 1) “any misuse or misleading use of the term ‘traditional speciality guaranteed’, the abbreviation ‘TSG’” and 2) any practice liable to mislead the consumer, including practices suggesting that an agricultural product or foodstuff is a traditional speciality guaranteed.” See EU Regulation 509/2006, *supra* note 86, Art. 17.

⁹³ Applicants are also required to specify details such as geographical limits of production, product’s special character of the product, and typical production methods. See Council Regulation 510/2006, *supra* note 86 [*emphasis added*], Art. 4.

⁹⁴ EU Regulation 510/2006, *supra* note 86, Art. 4, Art. 6; EU Regulation 509/2006, *supra* note 86 Art. 11 of Art. 6, Art. 8, Art.14 [*emphasis added*].

The EU protects wines, spirits, and mineral waters through separate regulations.⁹⁵ The EU also provides the possibility for registering GIs as collective marks, both under the Community's Trademarks Regulation at the regional level as well as in the national trademarks law of member states, as long as there is no pre-existing protection for a given GI.⁹⁶ The registration of trademarks that conflict with registered GIs is prohibited, unless the trademarks obtained *bona fide* protection in an EU member state prior to registration of a conflicting GI, or prior to January 1, 1996.⁹⁷

The stratified system of GIs in the EU is consonant with the broad scope of GIs because of the separate development of the concepts of AOs and indications of source.⁹⁸ The EU's system of GIs protection is, in this regard, remarkably different from the US's. The difference between the US approach to GIs and that of the EU has been a source of conflict which, in addition to the stalemate in current negotiations, resulted in disputes considered in the WTO Dispute Settlement Body (DSB).

In 2005, the WTO Panel considered a dispute arising from the US complaint that the 1992 EC Regulations on GIs violates the obligation of national treatment under the WTO

⁹⁵ Council Regulation 1493/99 as amended by Commission Regulation 753/2002 brings together a number of earlier Regulations on the protection of wines and covers the protection of geographical indications and traditional terms, Commission Regulation (EC) No 753/2002, 2002 O.J. (L 118) 1, Arts. 28–33, 14–18; Council Regulation 1493/1999 on the Organization of the Market in Wine, 1999 O.J. (L 179) 1, Arts. 50–53, 27–29. For spirits, Council Regulation (EC) 1576/89, 1989 O.J. (L 160) 1, and Mineral waters under Council Directive (EC) 80/777, 1980 O.J. (L 229) 1, *amended by* Council Directive 96/70, 1996 O.J. (L 299) 26 (EC).

⁹⁶ Council Regulation (EC) 40/94 on the Community Trade Mark, 1994 O.J. (L 11) 1 (EC) at Art. 66-69.

⁹⁷ Council Regulation 510/2006, *supra* note 86, Art. 14 (2).

⁹⁸ See Section 5.3 above, for the development of the concepts of AOs and indications of source in international law in pre-TRIPS Agreement era.

rules by discriminating between producers from the EU and those from the US.⁹⁹ The Regulation made GI protection for products from non-EC Members conditional upon the fulfilment of features inherent to the *sui generis* system of GIs, such as production inspection and monitoring requirements in the country of origin.¹⁰⁰ The US argued that if a product meets the basic standards of what constitutes a GI for the EC, a non-EC national should be able to register it regardless of whether its home government has an inspection structure similar to that in EC member states.¹⁰¹ The EU has since amended the requirements for GIs protection in a manner that responds to some of the complaints. However, differences between the two jurisdictions regarding the form and nature of protection of GIs continue to fuel trade conflicts.¹⁰²

The discussion so far in this Section has outlined the different forms of protecting GIs in the EU and in the US. The WTO negotiations over GIs reflect the differences between

⁹⁹ WTO, *EC-US Report* (15 March 2005) (Report by the Panel) WTO Documents WT/DS174R WT/DS290R

¹⁰⁰The EU regulation on GIs made GI protection for goods from non-EU Members conditional upon the fulfilment of three conditions: First, the non-EU Member must guarantee GI analogous to those obtained through the screening of an application for GI registration carried out by the competent authorities in an EU Member State. Second the State must have inspection procedures relating to the GI equivalent to those established for GIs in the EU. Third, the state had to be “prepared to provide protection equivalent to that available in the [EU] to corresponding agricultural goods for foodstuffs coming from the [EU].” See Council Regulation (EC) 2081/92 On the Protection of Geographical Indications and Designations of Origin for Agricultural Goods and Foodstuffs, 1992 O.J. (L 208) 1, Art. 12. The US filed a complaint with the WTO on grounds that the latter discriminates against non-EU GIs and that it does not provide sufficient protection to pre-existing US trademarks that may conflict with EU-designated GIs.

¹⁰¹ See *ibid.*, para. 7.392; for more detailed discussion of this dispute, see below Sections 5.6 and Section 5.7; see also Christophe Charlier & Mai-Anh Ngo, “An analysis of the European Communities: Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs Dispute” (2007) 10J World Intell Prop (2007) 171–186.

¹⁰² See Council Regulation (EC) 692/2003, 2003 O.J. (L 99) 1 ; Council Regulation (EC) 535/97, 1997 O.J. (L83) 3.

the two jurisdictions as to the form and method of GIs protection.¹⁰³ In connection to use of GIs to protect TKBAPs as this thesis proposes, developing countries will have to choose the legal means to effect protection, either through *sui generis* system or through trademarks-based system. The effectiveness of any means of GIs protection for TKBAPs depends on the policy context in which the distinct forms of protection operate. In this respect, it is pertinent to examine the rationales and theoretical underpinnings behind the distinct forms of GIs protection. Understanding the policy assumptions and practical significance of the *sui generis* and trademarks-based systems is necessary to grasp the dynamics of assessing the instrumentality of GIs. The following Section, therefore, identifies and explains the rationales for, and merits of, the distinct GIs protection in the US and the EU.

5.5.3 THE TRANSATLANTIC DIFFERENCE IN GEOGRAPHICAL INDICATIONS PROTECTION

Current negotiations in the WTO over GIs are often described as an attempt to reach “across two distinct cultures” that mirror “two philosophies of GI protection in international debate.”¹⁰⁴ The difference between the EU and the US in the form and scope of GIs protection reflects the disparate philosophical roots of GIs in the two jurisdictions. Generally, these differences can be traced to profound divergences in three areas: The

¹⁰³ See Tim Josling, “The War on Terroir: Geographical Indications as a Transatlantic Trade Conflict” (2006) 57 *Journal of Agricultural Economics* 337.

¹⁰⁴ Taubman, note 127, Chapter 1 at 261.

functional role assigned to GIs protection, the policy assumptions behind their protection and the cultural factors underlying their protection.¹⁰⁵

In terms of functionality, the EU system of GIs is designed to serve a public policy objective of achieving sustainable rural development.¹⁰⁶ In the EU, *sui generis* forms of GIs protection have been adopted as “frameworks to drive an integrated form of market-oriented rural development that can facilitate equitable participation among all of its stakeholders.”¹⁰⁷ The EU considers GIs as effective methods of advancing rural development objectives and, thus, encourages their use by agricultural producers.¹⁰⁸ In its position paper titled *Why do Geographical Indications Matter to Us?*, the EU reiterated that GIs advance its Common Agricultural Policy of enabling farmers to “compete internationally on quality rather than quantity.”¹⁰⁹ For this reason, *sui generis* forms of GIs are viewed as “intrinsically ... ‘public good’” designed to achieve public policy goals of rural development.¹¹⁰

¹⁰⁵ Raustiala & Munzer, note 18, Chapter 1 at 339.

¹⁰⁶ See Council Regulation 2081/92, “On the protection of geographical indications and designations for agricultural products and foodstuffs,” O.J. (L 208) 1 (24 July 1992), as amended by 535/97 of 17 March 1997, O.J. (L 83) 3 (25 March 1997). This regulation defines the objective of GIs to be the “diversification of agricultural production and promot[ing] products having certain characteristics to the benefit of the rural economy.” See also, Giovannucci, et al, note 236, Chapter 2, at 5 (noting that GIs form “an integral form of rural development that offers a valuable framework for powerfully advancing commercial and economic interests while potentially integrating local needs that are anchored in cultural tradition, environment and broad levels of participation”).

¹⁰⁷ *Ibid.* at 8.

¹⁰⁸ See European Commission, note 100, Chapter 1.

¹⁰⁹ *Ibid.*

¹¹⁰ See Giovannucci, et al, note 236, Chapter 2, at 8.

As a “publicly oriented” system, the *sui generis* formulation secures and enforces GIs rights through the active involvement of the state and its agencies.¹¹¹ In France, for example, a public agency ensures that collectively maintained techniques for production, which are the bases for the protection of a product through GIs, are protected from fraudulent claims and practices that could alter or weaken the distinctiveness of the product.¹¹² While regional producers establish and maintain tradition-based methods of production through cooperative associations, the government, represented by the *Institut National des Appellations d’Origine* (INAO), monitors adherence to standards of production, prosecutes violators of GIs rules, and defends GIs through legal action in other countries.¹¹³

For the US, GIs are just private business interests of individuals or corporations.¹¹⁴ As a result, the US does not support strong GIs protection to any greater degree than that can be provided under its existing trademarks regime. The US neither encourages nor discourages the use of GIs, and does not see the need for *sui generis* legislation on GIs.¹¹⁵

The primary responsibility for enforcement of GIs in the US rests with individuals or

¹¹¹ *Ibid.* at 14; see also Delphine Marie-Vivien, “The Role of the State in the Protection of Geographical Indications: From Disengagement in France/Europe to Significant Involvement in India” (2010) 13 J World Intell Prop 121–147.

¹¹² Created in 1935, the Institut National des Appellations d’Origine (INAO) is part of the Ministry of Agriculture charged with regulating French agricultural products with GIs. See <http://www.inao.gouv.fr/>.

¹¹³ See for example, INAO’s legal action in Canada: Chateau-Gai Wines Ltd. v. Institut National des Appellations d’Origine des Vins et Eaux-de-Vie et al, [1975] 1 S.C.R. 190; in US, Institut National Des Appellations d’Origine v. Brown-Forman Corp., 47 USPQ2d 1875 (TTAB 1998)

¹¹⁴ See Daniele Giovannucci, Elizabeth Barham & Richard Pirog, “Defining and Marketing “Local” Foods: Geographical Indications for US Products” (2010) 13 J World Intell Prop at 105 (observing, “[t]he somewhat ‘public good’ nature of GIs as a shared asset may be culturally less familiar ... even though there are certainly some experiences in the US”).

¹¹⁵ Stéphan Marette et al, “The Recent International and Regulatory Decisions about Geographical Indications,” Matric Working Paper 07-MWP (10 January 2007) at 9.

associations who own the rights to the relevant trademarks. GIs rights under the trademarks regime can easily be transferred as any business asset. In certification marks and collective marks, for example, a certification or monitoring of standards of production by a public agency is not *sine qua non* for their continued protection. In the case of infringement, it is up to the individual rights holders to defend their rights, even in trans-jurisdictional disputes.¹¹⁶

The difference in the scope and nature of protection of GIs also relates to the policy assumptions of each jurisdiction in the protection of GIs. In the US, the policy basis of the protection of GIs coincides with that for trademarks. Thus, the primary rationale behind the protection of GIs is to protect consumers from confusion and to limit their search cost, rather than to protect the rights of producers that use the indications.¹¹⁷ The rationale for trademarks arises from “information theory,” which espouses that “with asymmetric information [between buyers and sellers] and without means for differentiating products,” low-quality products will dominate the market.¹¹⁸

The asymmetrical information theory comes from the premise that the producer knows the attributes of his product,¹¹⁹ whereas consumers do not know these attributes,

¹¹⁶ In the EU system, for example, the *Institut National des Appellations d’Origine*, a public agency, defends and enforces GIs in other jurisdictions. See *Institut National Des Appellations D’Origine v. Vintners Int’l Co.*, 958 F.2d 1574, 1580, 22 USPQ2d 1190, 1195 (Fed. Cir.1992); also see Barham, “Localization”, note 224, Chapter 2.

¹¹⁷ The universally accepted justification for trademarks is: “they are protected so as to reduce the confusion and limit consumers’ search costs in the marketplace.” Rangnekar, “Demanding”, *supra* note 256 citing W. M. Landes and R. A. Posner, *The Economic Structure of Intellectual Property Law* (Cambridge: Harvard University Press, 2003) at 30.

¹¹⁸ *Ibid.*

¹¹⁹ See exposition of information theory in George Akerlof, “The Market for ‘Lemons’: Quality Uncertainty and the Market Mechanism” (1970) 84 *The Quarterly Journal of Economics*

and thus, can only determine them through search or experience.¹²⁰ The protection of producers' distinctive marks enables consumers to obtain more information through "ways of improving communication" such as advertising, quality signs and guarantee certificates, and labelling policies.¹²¹

In the US system, the geographical sign or term earns proprietary value to the owner if, through continuous use in relation to a product, the sign or term has become distinctive in the minds of consumers as an indicator of the source of the product.¹²² Of secondary importance to the search cost rationale, the protection of GIs through trademarks is justified on a utilitarian interpretation of GIs "as incentives for product qualities and reputation linked to a precise geographical area."¹²³ The protection of GIs in the US is,

¹²⁰ C Bramley & J.F Kirsten, "Exploring the Economic Rationale for Protecting Geographical Indicators in Agriculture" (2007) 46 *Agrekon* 69 at 75.

¹²¹ OECD, *Appellations of Origin and Geographical Indications in OECD Member Countries: Economic and Legal Implications*, Working Party on Agricultural Policies and Markets of the Committee for Agriculture Joint Working Party of the Committee for Agriculture and the Trade Committee, COM/AGR/APM/TD/WP (2000)15/FINAL. Paris at para 7.

¹²² See Farley, "Conflicts", *supra* note 45 at 76.

¹²³ Irene Calboli, *Expanding the Protection of Geographical Indications of Origin under TRIPS: Old Debate or New Opportunity?* Marquette University Law School Legal Studies Research Paper NO. 06-19 (2006) at 197. Justification for the protection of GIs based on this ground, referred to as Shapiro's model on reputation holds that:

[W]hen product attributes are difficult to observe prior to purchase, consumers may plausibly use the quality of products produced by the firm in the past as an indicator of present or future quality. In such cases a firm's decision to produce high quality items is a dynamic one: the benefits of doing so accrue in the future via the effect of building up a reputation. In this sense, reputation formation is a type of signaling activity: the quality of items produced in previous periods serves as a signal of the quality of those produced during the current period.

See Carl Shapiro, "Premiums for High Quality Products as Returns to Reputations" (1983) 98 *The Quarterly Journal of Economics* 659 at 659-660; also see London Economics, "Evaluation of the CAP Policy on Protected Designations of Origin (PDO) and Protected Geographical Indications (PGI): Final Report" (November 2008) at 122. Online: European Commission

< http://ec.europa.eu/agriculture/eval/reports/pdopgi/report_en.pdf >

therefore, premised on providing incentives for businesses to produce consistently high-quality goods and services with a view to build their reputation.

In the EU context, however, enhanced protection of GIs is primarily motivated by the need to protect the proprietary interest of producers from a geographical area in which topographical and human factors impart distinctive qualities to a product.¹²⁴ In the EU context, GIs convey proprietary rights in and of themselves, even before they are invested with meaning that results from use in the market.¹²⁵ For example, the EC justifies strong protection of GIs on the ground that GIs are “unique asset[s] for our producers in an increasingly liberalised world,” and that they “provide added value to our producers.”¹²⁶ In this respect, the allocation of GIs rights to producers in the EU is based on the essential link between location of the production of a product and a specific quality attributed to the product, represented by the French term *terroir*.¹²⁷ In its *Guide on Geographical Indications*, FAO describes *terroir* as:¹²⁸

[A] delimited geographic space, (2) where a human community, (3) has constructed over the course of history a collective intellectual or tacit production know-how, (4) based on a system of interactions between a physical and biological milieu, and a set of human factors, (5) in which the socio-technical trajectories put into play, (6) reveal an originality, (7) confer a

¹²⁴ See Barham, “Translating”, note 109, Chapter 1, at 131; see also FAO, “Promotion of Traditional Regional Agricultural Products and Food: A Further Step Towards Sustainable Rural Development” (Twenty-Sixth FAO Regional Conference for Europe, Innsbruck, Austria, 26-27 June 2008, Agenda Item 11

¹²⁵ Farley, “Conflicts”, *supra* note 45 at 76 ff.

¹²⁶ European Commission, note 100, Chapter 1.

¹²⁷ See Tobias Kiene, *Needs and Opportunities for the EU in the TK Debates: The Agricultural Dimension*, Iddri Paper No. 3 (2006).

¹²⁸ FAO and Siner-GI, note 237, Chapter 2.

typicality, (8) and can engender a reputation, (9) for a product that originates in that *terroir*.

Thus, the protection of GIs in the EU primarily responds to demands for protection of the proprietary interest of skilled producers in a *terroir* who, combining traditional techniques with unique geographical characteristics, produce distinctly authentic goods.

The US system of GIs does not distinguish between either producers or different kinds of products. GI-relevant products are not treated any differently from other commodity items under the trademark regime. Most of these items do not have cultural content – unlike those based on *terroir* – and thus, their identification and sourcing may easily be accomplished through protection under the trademarks regime. The link between geographic origin and quality seems weak in the US, as long as the GI can identify the source of a business.¹²⁹

The difference between the EU and US in the policy assumption behind the protection of GIs may also be illustrated through the grammatical, as well as the juridical distinction between the ideas of “indication” and “appellation”; terms relevant to the regimes of trademarks and *sui generis* forms of GIs, respectively.¹³⁰ The prohibition of “consumer

¹²⁹ Because the purpose of identification under the trademark regime is, mainly, to identify an individual or corporate owner, the link to geographical areas under the US certification marks are generally weaker than those for EU GIs. The Arizona grown, Florida (for citrus), and Wisconsin Real Cheese labels apply to numerous farmers and processors, which makes the link between indication and high-quality reputation relatively weak. Such broad-based geographical linkages operate primarily as a marketing device with little signalling role. See *supra* note 115 at 9. In such cases, the goods covered under these marks may not qualify as a GI under the WTO definition that the goods possess a “given quality, reputation, or other characteristic of the good ... essentially *attributable to its geographical origin*”[*emphasis added*].

¹³⁰ According to Ladas, “appellation, in French as well as in English, means a name given to a person or thing.” As a legal consequence of this definition, the word “indication and “appellation” are distinguished: “[Appellation] evokes the idea of susceptibility of appropriation or the idea of a property right;” whereas, “indication” refers to “what serves to indicate or point at something, or informs.” See Stephen Pericles

confusion” necessitates the recognition of an instrument of “indication,” a word that, in its linguistic understanding, refers to “what serves to indicate or point at something, or informs.”¹³¹ In this sense, the purpose of “indication” can easily be achieved through trademarks-based protection of GIs. As noted in the first Chapter, the term “appellation” in AOs (a category of GIs in the European *sui generis* system), evokes the idea of a property right that is susceptible of appropriation.¹³² The protection of appellations of origin, therefore, entails the recognition of proprietary interests of its own (even without a reputation developed through use).

Both *sui generis* and trademarks-based forms of GIs protection provide information that enables consumers to differentiate among products. As Mariano Riccheri, et al, point out, however:

[T]he nature of the content of the information given to the consumer by [*sui generis*] GI is different to that embodied in trademarks...; rather than signalling the entrepreneurial source of a product, GIs indicate a ‘quality link’ composed of three elements: the product, the geographical origin, and the quality of the product which is a result of its geographical origin.¹³³

In other words, the trademarks-led protection of GIs considers GIs as distinctive signs just like trademarks, whereas the *sui generis* modality views GIs as being descriptive of information about the product.¹³⁴ The description in GIs-based products which, according

Ladas, *Patents, Trademarks, and Related Rights: National and International Protection, Volume III* (Cambridge: Harvard University Press, 1975) at 1574.

¹³¹ See *ibid.*

¹³² See discussion in Chapter 2, Section 2.7; also see *ibid.* at 1574.

¹³³ *Supra* note 80 at 6.

¹³⁴ See note 223, Chapter 2 at 1257.

to the TRIPS Agreement, can be the “qualities, reputation or characteristics” the product possesses, is a basis of proprietary protection of GIs in the *sui generis* system.

Cultural concerns in the functional role of GIs and in the policy assumptions behind their protection fuel divergences in the entire construct of GI protection.¹³⁵ The EU system of GIs protection is designed to respond to the desire to preserve national and regional identity in the culture of agricultural production.¹³⁶ The US, however, does not assign cultural significance to GIs. At the root of this difference lies the cultural gap across the Atlantic, referred to as a difference between “the old and the new world.”¹³⁷

The dominant agricultural practice in the US is not typically identified as cultural in the context “culture” is understood in this thesis, because:¹³⁸

Dominant cultural traditions (except for those of indigenous communities) reflect only a few centuries of settlement and so have not built up the

¹³⁵ Broude, note 138, Chapter 1 at 633-692.

¹³⁶ See FAO, *supra* note 124.

¹³⁷ Due to an established cultural heritage in the production of wines and other agricultural goods, the EU countries (old world) have ample tradition in the protection of these rights, which is not found in the so-called countries of immigration (new world) such as the United States, Australia and Canada. See Leigh Ann Lindquist, “Champagne or Champagne? An Examination of US Failure to Comply with the Geographical Provisions of the TRIPS Agreement” (1999) 27 Ga J Int’l & Comp L 309 at 313; also see Stacy D. Goldberg, “Who Will Raise The White Flag? The Battle between the United States and the European Union Over the Protection of Geographical Indications” (2001)22 U Pa J Int’l Econ L 107. It is apparent that indigenous and local communities in developing countries as well as those in the industrialized countries lie in the “old world” category given their old-age and lived experience in the creation of knowledge. See Jose Manuel Cortes Martin, “The WTO TRIPS Agreement the Battle between the Old and the New World over the Protection of Geographical Indications” (2004) 7 J World Intellectual Property 287.

¹³⁸ Culture in the context of traditional knowledge is understood as “the entire web of social practices, rules, beliefs and ways of doing things that constitute and structure a group’s understanding of itself as a group.” Denise G. Reaume, “Justice between Cultures: Autonomy and the Protection of Cultural Affiliation” (1995) 29 U Brit Colum L Rev 117 at 119; see Chapter 2 Section 2.2.4.

empirical experience in adaptation to local conditions, or the sense of local cultural variation, that would support elaborate regional specialization.¹³⁹

Agricultural activity in the US highly emphasises the value of innovation, instead of tradition, because “production in key sectors like food has become industrially standardized with little regional variation.”¹⁴⁰ The EU justifies a higher level of GIs protection for agricultural production on cultural considerations because of a long tradition of regionally differentiated artisanal and agricultural production in its member countries.¹⁴¹ EU policy rationales for protecting TK and TKBAPs embrace both cultural and economic concerns in GIs.

With respect to cultural factors in GIs protection, the desire to preserve and to protect traditional agri-food production methods as a reputation relevant to GI protection resonates with developing countries, which justifiably assert their “old-ness” as far as the protection of TK is concerned.¹⁴² Given the cultural nature of most products that are based on TK, the rationale for the preservation of cultures of production through GIs is relevant to evaluating the suitability of GIs to protect TK and TKBAPs.

In the economic sphere, equivalency exists between developing countries’ need to protect TKBAPs in global markets,¹⁴³ and the US’s rationale for protecting GIs. In the US, the protection of GIs is justified on the need to “shield consumers from misleading

¹³⁹ Downes & Laird, note 83, Chapter 3 at 11-12.

¹⁴⁰ *Ibid.*

¹⁴¹ See Goldberg, *supra* note 137.

¹⁴² See Broude, note 138, Chapter 1, at 642.

¹⁴³ See Chapter 3 Section 3.4.

information on the origin of products,” and to protect “producers against the dilution of an indication, allowing [them] ... to receive, in principle, price premiums for producing high quality products.”¹⁴⁴ These economic rationales are consistent with the goals of developing countries, who wish to use GIs as a means of acquiring improved prices for their TKBAPs in the global market.¹⁴⁵ As discussed below in Section 5.10, the conceptualization of GIs as instruments to protect TKBAPs has theoretical foundations that combine the economic and cultural dimensions.¹⁴⁶

Cognizant of the potential of GIs, some developing countries have shown interest in the international protection of GIs. As indicated in the discussion above, WIPO attempted to increase the participation of developing countries in the Lisbon system through a special consideration for GIs from developing countries.¹⁴⁷ Developing countries have, in the negotiations in WIPO and in the Uruguay Round, requested the protection of geographical names for distinctive agricultural products from their territories.¹⁴⁸ However, the distinction that the TRIPS Agreement introduced in requiring a higher level of protection for wines and spirits, while allowing only a basic level of protection for

¹⁴⁴ Rangnekar, “Demanding,” note 257, Chapter 2, at 122.

¹⁴⁵ See discussion of “Traditional Agricultural Products in Global Markets” in Chapter 3, Section 3.4; also see discussion in below, Chapter 6, Section 6.4.2.1. In addition, see generally, UK Commission on Intellectual Property Rights, “Traditional Knowledge and Geographical Indications” in *Integrating Intellectual Property Rights and Development Policy* (2002) online: <http://www.iprcommission.org/graphic/documents/final_report.htm> (noting that “the main economic benefit of geographical indications would be to act as a quality mark which will play a part in enhancing export markets and revenues”).

¹⁴⁶ See discussion in Section 5.10.

¹⁴⁷ The draft treaty for GIs in WIPO allowed for the reservation of GIs from developing countries even if such GIs are not in use in the country of origin. See discussion in Section 5.3

¹⁴⁸ See discussion in Section 5.3, above.

other agricultural products, reflects a preference for the EU's domestic priority. In ongoing WTO negotiations, developing countries propose the revision of the TRIPS Agreement to expand the existing level of GIs protection for wines and spirits to cover other products of export interest, TKBAPs.¹⁴⁹ In this respect, the scope of GIs and, thus, the instrumentality of GIs in protecting TKBAPs, can be understood through a consideration of the legal consequences of the trans-atlantic difference regarding GIs in international disputes and negotiations.

The following Section discusses and evaluates the scope of GIs protection as refined in the course of negotiation and dispute settlement proceedings in the WTO in recent times. In this regard, two issues have received considerable attention in international negotiations and widely publicised disputes over GIs: The unique relationship between GIs and trademarks as distinct regimes, and because of this relationship, the issue of generic GIs.¹⁵⁰

¹⁴⁹ See Carlos María Correa, *Intellectual Property Rights, the WTO, and Developing Countries: The TRIPS Agreement and Policy Options* (New York: Zed Books, 2000) at 218.

¹⁵⁰ For extensive discussion of the relationship between GIs and trademarks in international law, see Thitapha Wattanaputtipaisan, "Trademarks and Geographical Indications: Policy Issues and Options in Trade Negotiations and Implementation" (2009) 26 *Asian Development Review* 166-205; Paul J. Heald, "Trademarks and Geographical Indications: Exploring the Contours of the TRIPS Agreement" (1996) 29 *Vand. J. Transnat'l L.* 635; Emily C. Creditt, "Terroir v. Trademarks: The Debate over Geographical Indications and Expansions to the TRIPS Agreement (2008) 11 *Vand J Ent & Tech L* 425.

5.6 THE RELATIONSHIP BETWEEN GEOGRAPHICAL INDICATIONS AND TRADEMARKS

The interaction between GIs and trademarks is described in various terms that indicate a conflicting relationship: “tempestuous,” “complex” and “cobweb like.”¹⁵¹ In essence, GIs and trademarks are different legal regimes. The two regimes have similarities in their functions, however.

Both trademarks and GIs incorporate exclusivity of use as a fundamental right. In trademarks, an owner prevents third parties from using identical or similar marks in transactions over identical or similar goods or services, where doing so would likely result in confusion. Similarly, owners of a GI, usually a group of producers in a geographical area, prevent outsiders from using the GI in relation to goods that do not originate from the region the GI designates. GIs owners can also prevent producers in the designated region from using the GI if the producers do not comply with the traditional methods of production specified as a basis for GIs protection. Due to the feature of exclusivity, conflicts between trademarks and GIs rights holders may occur under different scenarios.

First, a producer of a GI-relevant product and a trademark proprietor may lay claims to the same geographical sign or name within a jurisdiction. This occurs in situations in which a geographically significant term acquires a secondary meaning under that

¹⁵¹ Dwijen Rangnekar & Sanjay Kumar, “Another Look at Basmati: Genericity and the Problems of a Transborder Geographical Indication” (2010) 13 J World Intell Prop 202 at 209; note 223, Chapter 2, at 1253.

country's trademarks law.¹⁵² Second, conflict may arise between a prior trademark and a later GI that are registered in different jurisdictions.¹⁵³ Third, conflict may arise in the case of homonymous GIs: GIs derived from “one of two or more words spelled and pronounced alike but different in meaning.”¹⁵⁴ Homonymous GIs use identical indications for products that originate from different geographical areas.¹⁵⁵ The conflicts foreseen in each scenario become complicated legal disputes if products that bear the marks or indications are sold in the same marketplace.¹⁵⁶

A number of mechanisms are used to resolve conflicts between GIs and trademarks and that between homonymous GIs. In earlier times, such conflicts were resolved through

¹⁵² For example, the term BUDWEISER is an AO for beer made in the town of Ceske Budejovice, Czech

Republic, which has been registered under the Lisbon system since 1967. On the other hand, the name is also a trademark for Anheuser-Busch, a beer company incorporated and registered in the United States. Despite its AO status in the Czech Republic, BUDWEISER is recognised throughout the world as a trademark, and not as a geographical description. See Eva Gutierrez, “Geographical Indicators: A Unique European Perspective on Intellectual Property” (2005) 29 *Hastings Int'l & Comp L Rev* 29.

¹⁵³ Wellknown example of such a conflict is the Torres case in Spain and Portugal. Torres is a Spanish trademark for wine, established more than 90 years ago. The Portuguese Government recognized a GI for Torres-Vedras, a wine-producing area 1981. See Dietrich C. Ohlgart, “Geographical Indications and Trademarks: War or Peace?” (Paper Presented at European Communities Trade Mark Association 25th Annual Meeting, Warsaw, 2006) online : <http://www.ecta.org/IMG/pdf/Olghart_text_1_.pdf>.

¹⁵⁴ See *Merriam Webster's Collegiate Dictionary*, online: <<http://www.merriam-webster.com/dictionary/homonym>> “homonym”.

¹⁵⁵ Typical examples of homonymous GIs includes “Rioja”, La Rioja being the name of wine-producing regions that exist in both Argentina and Spain. See Vicki Wayne, “Assessing Multilateral vs. Bilateral Agreements and Geographic Indications through International Food and Wine” (2005) 14 *Currents: Int'l Trade L.J.* 56.

¹⁵⁶ See WIPO International Bureau, *Possible Solutions for Conflicts between Trademarks and Geographical Indications and for Conflicts between Homonymous Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Fifth Session, Geneva, September 11 to 15, 2000) SCT/5/3 at para 82 ff.

the application of the principle of territoriality.¹⁵⁷ This principle, generally associated with the protection of IP rights, espouses that identical trademarks used for identical goods or services can co-exist in different territories.¹⁵⁸ However, the rapid pace of globalization, as manifested through the expansion of international trade, the trans-border mobility of consumers, and the age of advanced borderless communications, has eroded the significance of the principle of territoriality.

As a result, the principle of priority is widely recognized as a solution for conflicts between trademarks and GIs.¹⁵⁹ This principle, also known as the “First in Time, First in Right (FITFIR)” approach, provides that exclusive rights to a sign or a name that is used as a trademark and a GI be attributed to the first person who registered or used it.¹⁶⁰ Similarly, the principle of speciality is often invoked to reconcile the two regimes.¹⁶¹ The principle of speciality provides that similar or identical trademarks can co-exist as long as

¹⁵⁷ See WIPO, *Geographical Indications and the Territoriality Principle* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Ninth Session, Geneva, November 11 to 15, 2002), para. 4.

¹⁵⁸ See detailed description of the application of this principle in other areas of IP in Graeme B. Dinwoodie, “Towards an International Framework for the Protection of Traditional Knowledge” in Twarog & Turner, eds, *Elements of National Sui Generis Systems for the Preservation, Protection and Promotion of Traditional Knowledge: Innovations and Practices and Options for an International Framework* (Geneva: U.N. Conference on Trade & Development, 2006); see also *ibid.*

¹⁵⁹ See WIPO International Bureau, *Possible Solutions for Conflicts between Trademarks and Geographical Indications and for Conflicts between Homonymous Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Fifth Session, Geneva, September 11 to 15, 2000) SCT/5/3.

¹⁶⁰ *Ibid.*, para. 55.

¹⁶¹ See *ibid.*,

they are used on different goods or services.¹⁶² The use of FITFIR in a global arena has broadly encountered criticisms on grounds of equitability.¹⁶³

Generally, efforts to resolve the conflict between trademarks and GIs include attempts to harmonise the application of the principles discussed above in domestic law.¹⁶⁴ In addition, Art. 16.1 of the TRIPS Agreement is interpreted as providing for the exclusivity of a prior trademark over a GI.¹⁶⁵ Art. 23.3 of the TRIPS Agreement addresses homonymous GIs for wines. It provides that protection shall be accorded to each GI on the condition that the indication does not falsely represent to the public that the product originates in the territory of another WTO Member. The scope of this provision is limited to homonymous GIs only for wines. Art. 23.3 also allows WTO members to determine the practical conditions under which the homonymous GIs will be differentiated from each other.

In addition, the TRIPS Agreement attempts to resolve the conflict between trademarks and GIs through the so-called “grandfathering” clause under Art. 24. Art. 23.2 of the TRIPS Agreement obliges WTO members to invalidate or refuse the registration of a trademark that contains or consists of a GI with respect to wines or spirits that do not

¹⁶² *Ibid.*,

¹⁶³ See arguments in note 223, Chapter 2 at 1269-1270.

¹⁶⁴ See Marshall A. Leaffer, “The New World of International Trademark Law” (1998) 2 Marq Intell Prop L Rev 1.

¹⁶⁵ Art. 16.1 of the TRIPS Agreement is widely interpreted as providing for the exclusivity of a valid prior trade-mark registered in good faith. See note 222, Chapter 1 at 973; TRIPS Agreement, note 13, Chapter 1, Art. 16.1.

originate from the territory indicated.¹⁶⁶ Sub-articles 4 and 5 of Art. 24 provide conditions in which such registration may be allowed as an exception to the obligation under Art. 23.2.¹⁶⁷

The interpretation of the conditions under which a trademark that contains or consists of a GI may be registered is not, however, uniform among all WTO members. The EU pursues a policy of coexistence between GIs and prior identical trademarks in all circumstances (but not vice versa).¹⁶⁸ The basis for this policy is, as indicated above, the peculiar importance that the EU ascribes to the protection of GIs.¹⁶⁹ The US and its allies initiated a long-standing dispute in the WTO Dispute Settlement Panel, when they requested consultations with the EC, contending that the EC Regulation which provided for co-existence between prior trademarks and subsequent GIs, infringes the exclusive rights of trademark owners that Art. 16.1 of the TRIPS Agreement recognizes.¹⁷⁰ In a

¹⁶⁶ See TRIPS Agreement, note 13, Chapter 1, Art. 22.3.

¹⁶⁷ Art. 24 .4 provides for the continued and similar use of GIs for wines and spirits in connection with goods or services by any of its nationals or domiciliaries who have used that geographical indication in a continuous manner with regard to the same or related goods or services in the territory of that Member either for at least 10 years preceding April 15, 1994, or in good faith preceding that date. Art. 24 .5 allows for eligibility of or validity of the registration of a trade-mark, or the right to use a trade-mark that is identical with, or similar to, a GI if the following conditions are fulfilled:

Where a trademark has been applied for or registered in good faith, or where rights to a trademark have been acquired through use in good faith either: (a) before the date of application of these provisions in that Member ...; or (b) before the geographical indication is protected in its country of origin

TRIPS Agreement, note 13, Chapter 1.

¹⁶⁸ See EC Reg. 2081/92 *supra* note 100, Art. 14 (2) & Art. 13 (4) and (5).

¹⁶⁹ Note 222, Chapter 1 at 973.

¹⁷⁰ See *European Communities - Protection of Trademarks and Geographical Indications for Agricultural products and Foodstuffs* – Request for Consultations by the United States (2003) G/L/619IP/D/19/Add.1WT/DS174/1/Add.1. Art. 16.1 of the TRIPS Agreement provides that “The owner of a registered trade-mark shall have the exclusive right to prevent all third parties not having the owner’s

2005 decision which satisfied both parties, the Panel agreed with the US and Australia that the TRIPS Agreement does not allow unqualified coexistence of GIs with prior trademarks, but ruled that the EU Regulation, as written, is sufficiently constrained to qualify as a “limited exception” to trademark rights under Art. 17 of the Agreement.¹⁷¹

5.7 GENERIC GEOGRAPHICAL INDICATIONS

The legal complexity regarding the protection of GIs in international law is neither confined to the scope, nature, and form of protection GIs should take, nor limited to the relationship between GIs and trademarks. Such complexity also arises in determining the kind of GIs that WTO Members should protect. The TRIPS Agreement exempts members from an obligation to protect GIs, the relevant indication of which is “identical with the term customary in common language as the common name for such goods or services” in their territories.¹⁷² This exemption brings the issue of genericity, which is one of the contentious issues in the international discussion and negotiations for the protection of GIs. A look at the scope and limitation of GIs protection on grounds of genericity is relevant to the question of how far GIs can be used to protect TKBAPs.

consent from using in the course of trade identical or similar signs for goods or services which are identical or similar to those in respect of which the trade-mark is registered where such use would result in a likelihood of confusion.” See TRIPS Agreement, note 13, Chapter 1, Art. 16.1.

¹⁷¹ See Panel Report, European Communities - Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs (Complaint by the United States) (2005) WT/DS174/R, para. 7.661.

¹⁷² See TRIPS Agreement, note 13, Chapter 1, at Art 24.6.

In most cases, GIs may protect a product for as long as the indication has not fallen into genericity.¹⁷³ A sign or term that represents a product is generic if it forms “part of the general cultural and gastronomic stock and may, in principle, be used by any producer.”¹⁷⁴ Once an indication becomes generic, a GI loses its geographic meaning and acquires another meaning based on qualities that do not necessarily relate to specific characteristics from the initial geographical origin.¹⁷⁵ In this case, the sign or term that serves as the indication of the place of origin of a product, instead acquires meaning as the designation of a kind of product.¹⁷⁶

The protection of GIs guards products against genericisation or dilution of the distinctive qualities of a particular agricultural product. Under the *sui generis* system of GIs, the protection of GIs in domestic legislation through requirements of, and monitoring of specific production methods as a basis of protection, is necessary to keep the distinguishing features of a product intact. Such protection differentiates a speciality product from a broader category of agricultural commodities.

¹⁷³ See Zografos, note 320, Chapter 4, at 55; Matthew Rimmer, “A Submission to the Joint Standing Committee on Treaties on the Agreement between Australia and the European Community on Trade in Wine” Submission No. 7 (2009) online: Bepress Selected Works <http://works.bepress.com/cgi/viewcontent.cgi?article=1068&context=matthew_rimmer>.

¹⁷⁴ Opinion of the Advocate-General Ruiz-Jarabo Colomer in *Canadane Cheese Trading AMBA and Adelfi G. Kouri Anonymos Emoriki Kai Viomichaniki Etaireia v Hellenic Republic* (C-317/95) [1997] ECR I-4681 at 28.

¹⁷⁵ Edi Defrancesco, Luigi Galletto & Mara Thiene, *Food, Agriculture and the Environment: Economic Issues* (Milano: FrancoAngeli, 2005) at 76; Shrabashi Ray & Gautam Anand, “Geographical Indications: Contextualizing the Case of ‘Darjeeling Tea’” online: Trademark Dhaba <http://www.trademarkdhaba.com/resource/GI_darjeeling_tea_case.pdf> at 3.

¹⁷⁶ For example, the term “cologne” now denotes a certain kind of perfumed toilet water, regardless of whether or not it was produced in the region of Cologne. See WIPO, *About Geographical Indications: What is a “Generic” Geographical Indication?* Online: WIPO <http://www.wipo.int/geo_indications/en/about.html#generic>.

Disputes arise when a sign or a term used as a GI in relation to a product and protected as such in one country is considered generic, and thus, open for appropriation by producers in another country. Typical examples are Champagne and Feta, which the EU protects as a PGI. The US allows the generic use of these terms by US wine and cheese producers on the ground that they are so widely used that consumers commonly view them as designating a class name or a category of all the products of the same type, rather than as a geographic origin for a particular product.¹⁷⁷ The risk of GIs acquiring generic status, often referred to as genericide, is a commonly recognized problem. However, the determination and proof of genericity often cause disagreements that involve competing interests of countries due to historical reasons.¹⁷⁸

In countries with a large number of European immigrant populations such as Australia, Canada, the US, and parts of Latin America, European place names were often borrowed to promote locally produced products that are similar to products in the initial origin.¹⁷⁹ As a result, producers in these countries treat most of these names and signs as generic.¹⁸⁰ A strong protection of GIs based on the names of initial origin of a product

¹⁷⁷ See Giovannucci, et al, note 236, Chapter 2, at 65.

¹⁷⁸ See Dev Gangjee, “Say Cheese! A Sharper Image of Generic Use through the Lens of Feta” (2007) 29 *European Intellectual Property Review* 172.

¹⁷⁹ See Giovannucci, et al, note 236, Chapter 2, at 15.

¹⁸⁰ Examples include Chablis, Champagne, Port/Porto, Bourgogne/ Burgundy, Rhin/Rhine, and Sauterne/Sauternes, See Jim Chen, “A Sober Second Look at Appellations of Origin: How the United States Will Crash France's Wine and Cheese Party” (1996) 5 *Minn J Global Trade* 29.

would adversely affect a large number of agricultural products in these countries, often referred to as “countries of immigration.”¹⁸¹

The EU states that its geographical terms and signs, mostly protected in the EU, are wrongfully considered generic in other territories.¹⁸² It even demands that existing trademarks on these terms or their translations be “clawed back” to enable communities in the EU to reclaim exclusive ownership.¹⁸³ Despite limited success in this effort, as demonstrated through the EU and Canada’s agreement to halt the generic use in Canada of 21 European GIs for wine, the EU has not succeeded in reclaiming most of these GIs names and signs.¹⁸⁴

¹⁸¹ Jose Manuel Cortes Martin, “The WTO TRIPS Agreement - The Battle between the Old and the New World over the Protection of Geographical Indications” (2004) 7 J of World Int Prop 287-326 at nn. 3; also see Giovannucci, et al, note 236, Chapter 2.

¹⁸² See European Commission, *Commission Communication — EU Best Practice Guidelines for Voluntary Certification Schemes for Agricultural Products and Foodstuffs*, 2010/C 341/04 (2010) online: EU <[http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010XC1216\(02\):en:NOT](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010XC1216(02):en:NOT)>.

¹⁸³ “Claw-back” is a technical term associated with EU’s policy in international negotiations over GIs in which the EU reclaims geographical names that originated from European countries and are considered as generic or semi-generic names by those who use them, but the EU sees as usurpations on a worldwide level. The EC has, in the negotiations in the WTO Agriculture Committee, proposed a “claw-back” list of 41 terms for which it has demanded immediate exclusivity in all WTO markets and in all translations. See EC, “The EC’s Proposal for Modalities in the WTO Agriculture Negotiations” (2003) online: EC Directorate-General for Trade <http://trade.ec.europa.eu/doclib/docs/2005/september/tradoc_112403.pdf>

¹⁸⁴ The bilateral agreement between the EU and Canada on GIs is designed to be implemented in three phases. As soon as the agreement comes into force First, the use of terms Bordeaux, Chianti, Claret, Madeira, Malaga, Marsala, Medoc/Médoc, and Mosel/Moselle will stop. The use of the terms Bourgogne/Burgundy, Rhin/Rhine, and Sauterne/Sauternes will cease by December 31, 2008. Finally, the generic status of Chablis, Champagne, Port/Porto, and Sherry will be terminated by December 31, 2013. The agreement also proposes to end the generic status of certain spirit names, Grappa, Jagertee, Korn, Ouzo, and Pacharan within two years of the agreement. See EU, Press Release, IP/03/883, “EU-Canada Wine and Spirits Agreement to end generic use of European names” (24 June 2003) online: Europa <<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/03/883&format=HTML&aged=0&language=EN&guiLanguage=en>>; also see Antonio Turco, “Generic No More—Expanded Protection of Geographical Indications in Canada” (2003) Bulletin on Intellectual Property 3. The EU has concluded similar bilateral agreement with Australia. See Dan Marsteller, “Geographical Indication Accord between EU, Australia Takes Effect” (September 2, 2010) online: Impact <<http://www.tradenewsonline.com/content/show/id/7617>>.

As a result, the issue of generic GIs remains part of an expanded policy debate outside of the negotiation for IP issues in the TRIPS Council. Recently, the EU invoked its “claw back” claim in relation to the longstanding, high-stakes negotiations over trade in agricultural goods in the WTO.¹⁸⁵ In addition, a number of bilateral frameworks, such as the proposed Canada-European Union Comprehensive Economic and Trade Agreement (CETA), address the issue of generic GIs.¹⁸⁶

The discussion so far in this Chapter has focused on understanding the legal and regulatory frameworks for the protection of GIs. The analysis in the previous Sections dealt with issues and concerns related to the nature, forms, and rationale of GIs protection in international and national legal frameworks. From a policy perspective, it can be concluded that GIs can serve multiple purposes depending on the context in which they are implemented. The EU considers GIs as a special category of IP tools to pursue public policy objectives of culturally sensitive rural development. The US considers GIs as private IP tools that mainly serve the economic objectives of private actors.

The next Chapter examines the potential of GIs as a strategy to protect TKBAPs. In so doing, it analyses the degree to which GIs may serve biodiversity, socio-economic, and cultural objectives in developing countries. The discussion in the following Section

¹⁸⁵ See Justin Hughes, “Champagne, Feta, and Bourbon: The Spirited Debate over Geographic Indications” (2006) 58 *Hastings L J* 299; ERS/USDA, “WTO: Beyond the Agreement on Agriculture, TRIPS” *Briefing Rooms* (12 April 2009) online: < <http://www.ers.usda.gov/briefing/wto/geoindications.htm>>.

¹⁸⁶ See Shayerah Ilias, *The Proposed Anti-Counterfeiting Trade Agreement: Background and Key Issue* (2010) Congressional Research Service < http://assets.opencrs.com/rpts/R41107_20100312.pdf >; Daniela Ida Zandonà, ACTA and the Protection of Geographical Indications: One Step Forward and Two Steps Back, (November 08, 2010) European Federation of Origin Wines online: <http://www.efow.eu/press/acta_and_the_protection_of_geographical_indications_one_step_id_80>; Joint Report on the EU-Canada Scoping Exercise (5 March 2009) <<http://www.international.gc.ca/trade-agreements-accords-commerciaux/assets/pdfs/Canada-EUJointReport2009-03-05.pdf>>.

provides background for such an analysis by examining the suitability of GIs as models for protecting TK.

5.8 GEOGRAPHICAL INDICATIONS AND TRADITIONAL KNOWLEDGE

The diverse policy objectives behind the EU's approach to GIs are, in some ways, similar to the imperatives for the protection TK in developing countries.¹⁸⁷ As a result, many developing countries in the WTO have joined the EU's demand for higher standards of GIs protection¹⁸⁸

The prospect of developing countries deploying GIs to protect TKBAPs derives from the understanding that the essential features of GIs accommodate the unique attributes of TK systems. As already noted in Chapter Three, the conventional IPRs do not adequately account for the defining attributes of TK.¹⁸⁹ Unlike other regimes of IP, many sceptics of the relationship between IP and TK systems now accept that, properly managed, GIs may be used to preserve and protect TK.¹⁹⁰ Interest in GIs as suitable instruments for

¹⁸⁷ See Chapter 3 Sections 3.2, 3.3 & 3.4 above, for discussion of underlying reasons behind demands to protect TK.

¹⁸⁸ See discussion in Chapter 4 Section 4.8.

¹⁸⁹ See discussion in Chapter 3 Section 3.2.2.2, above.

¹⁹⁰ See for example Sergio Escudero, *International Protection of Geographical Indications and Developing Countries*, South Center Trade Working Paper no. 10 (2001) at 34 (arguing that the most important "...category of intellectual property right that may be directly applied to the protection of traditional knowledge is that of geographical indication"; Madhavi Sunder, "IP³" (2006) 59 *Stanford Law Review* 257 (noting that despite TRIPS Agreement's challenges for developing countries, "GIs ... are hailed as the poor people's intellectual property rights, recognizing the knowledge of weavers, farmers, and craftspeople." Michael Blakeney, "Proposals for the International Regulation of Geographical Indications" (2001) 4 *The J World Intell Prop* 629 at 647 (noting that in the context of dispute on Basmati rice, "the resolution of this dispute would have been simpler had GIs regime been in place in the countries in which protection for these brands was sought"); see Giovannucci, et al, note 236, Chapter 2, at 17-18 (noting that in recent years, there has been growing interest in whether GIs can be enlisted to preserve traditional or cultural knowledge).

protecting TK arises mainly from the structural and functional compatibility between GIs and TK. The amenability of GIs to the tradition of collective production and collective decision-making is the most important factor in this regard.¹⁹¹

Most existing forms of IPRs do not protect TK because the TRIPS Agreement and the notions of IP incorporated therein recognize that IPRs are private property rights.¹⁹² However, TK is typically defined in terms of the collective and communal identity of its holders.¹⁹³ In the agricultural system of most ILCs, for example, the communities regard the efforts of traditional breeding and selection of plant varieties as a collective, rather than as an individual exercise.¹⁹⁴ As such, the protection of TK involves the recognition of the collective rights of the community that holds and identifies with it.¹⁹⁵

As distinct from most forms of IP, GIs allow for collective ownership.¹⁹⁶ GIs accord exclusive rights to an indefinite number of producers in a specific geographic area

¹⁹¹ Shivani Singhal, “Geographical Indications and Traditional Knowledge” (2008) 11 *Journal of Intellectual Property Law & Practice* 732 at 733; Aylwin et al, note 7, Chapter 1.

¹⁹² See TRIPS Agreement, note 13, Chapter 1, preamble; also see Chapter 3 Section 3.2.2.2, for discussion of the incompatibility between modern IPRs and TK on account of the collective feature of the latter.

¹⁹³ See discussion in Chapter 2 Section 2.2.4.

¹⁹⁴ In cases where the need for recognition of individual’s contribution in farming practices arises, particularly in cases of farmers’ contributions through breeding and selection, private IPRs in the form of PBRs can be applied, although the fact that current plant variety protection laws require levels of distinctness, uniformity and stability, which are often not met by farmers’ varieties. See Rene Salazar *et. al*, “Protecting Farmers’ New Varieties: New Approaches to Rights on Collective Innovations in Plant Genetic Resources” (2007) 35 *World Development* 1515 at 1523

¹⁹⁵ See note 21, Chapter 2, at 85. See also Anthony Taubman, “Is There a Right of Collective Personality?” 28 *European Intellectual Property Review* 485-492.

¹⁹⁶ WIPO, *Policies, Measures and Experiences Regarding Intellectual Property and Genetic Resources: Submission by The International Institute for Environment and Development (IIED)* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore Sixteenth Session, Geneva, May 3 to 7, 2010) WIPO/GRTKF/IC/16/INF/13, para. 4.

represented by a name or sign which typically defines a particular product.¹⁹⁷ Through the link that GIs create between three factors of production, namely “distinguishing characteristics,” “cultural aspects” or “quality” of a product and “geographic area” of production, GIs protect goodwill and reputation developed through the participation of a group of producers in an area.¹⁹⁸

GIs are not freely transferable from one owner to another and they emphasize the relationships between human cultures and their land and environment in a collective society.¹⁹⁹ Collective entities, such as cooperative bodies, associations composed of producers or members of an informal group or community, participate in the use and protection of GIs based on their adherence to traditional methods of production in a defined geographical area.²⁰⁰ Unlike most forms of IPRs in which an owner acquires exclusive rights during the term of protection, in GIs, whosoever adheres to methods of production that are established, maintained, and modified by producer groups – sometimes monitored by a public agency – qualifies for GI protection.

In a GIs system, no individual has an unqualified monopoly.²⁰¹ A producer loses the right to use the GI if its practices fall below the specified standards of production, or

¹⁹⁷ Panizzon, note 19, Chapter 3, at 349.

¹⁹⁸ Giovannucci, et al, note 236, Chapter 2, at 5; see also Cottier & Panizzon, note 151, Chapter 1 at 259.

¹⁹⁹ Siddhartha Prakash, *Indigenous Knowledge and Intellectual Property Rights IK Notes* No. 19 (2000) online: World Bank <<http://www.worldbank.org/afr/ik/iknt19.pdf>> (noting that GIs “lack the typical private-property characteristic of being freely transferable”).

²⁰⁰ O’Connor, “Law of GIs”, note 239, Chapter 2, at 374.

²⁰¹ See Frank Thiedig & Bertil Sylvander, “Welcome to the Club? An Economical Approach to Geographical Indications in the European Union” (2000) 49 *Agrarwirtschaft* 428-443.

outside the geographical area of production.²⁰² Thus, GIs do not imply monopoly control over knowledge represented by the indication; they condition access to the economic use of products based on adherence to TK-based production methods that are typical to a specific locality.²⁰³

In addition, the attendant cultural perceptions and ways of GIs most often relate to “old knowledge.”²⁰⁴ Most existing IPRs are unsuitable to protect TK-based products because the exclusive rights in global IPRs are intended to benefit persons who come up with new and inventive ways of producing an object.²⁰⁵ GIs, however, maintain recognized traditional production methods while allowing the evolution of locally unique farming techniques, food preservation methods, processing procedures, additives, packaging, etc. that contribute to the differentiation of the product.²⁰⁶ As Moran notes, the system of GIs reflects a strong commitment to traditional practices that grow out of “long periods of empirical experience and experimentation” throughout generations.²⁰⁷ Given the fact that TK reflects the relationship of ILCs to their land and territories, the potential

²⁰² *Ibid.* citing Louis Lorvellec, “You’ve Got to Fight for Your Right to Party: A Response to Jim Chen” (1996) 5 *Minnesota Journal of Global Trade* 65.

²⁰³ Blakeney, *supra* note 3.

²⁰⁴ See Marsha A. Echols, “Geographical Indications for Foods” (2003) 47 *Journal of African Law* 199 at 201; D. A. Cleveland and S. C. Murray, “The World’s Crop Genetic Resources and the Rights of Indigenous Farmers” (1997) 37 *Current Anthropology* 477 at 483-485.

²⁰⁵ See Chapter 3 Section 3.2.2.1.

²⁰⁶ See Giovannucci, et al, note 236, Chapter 2, at 17; Philippe Cullet & Andrea Nascimento, “Geographical Indications” in S. Biber-Klemm and T. Cottier, eds, *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (London: CAB International, 2006) at 252.

²⁰⁷ Warren Moran, “Rural Space As Intellectual Property” (1993) 12 *Political Geography* 263-277.

of GIs to accommodate trans-generational knowledge that is developed in a territory is an important factor that adds to their instrumentality to protect TKBAPs.²⁰⁸

Beyond their economic significance in rewarding tradition-based production in the market, GIs “aim to halt cultural appropriation by outsiders.”²⁰⁹ The need to resist factors of cultural appropriation in the form of biopiracy is, as seen in the second Chapter of this thesis, a concern that resonates strongly in an increasingly globalized world. As the long-standing tradition of GIs protection in the *sui generis* form demonstrates, GIs serve as important instruments to maintain unique cultural attributes of agricultural production.²¹⁰ In accord with ILCs’ practices, GIs emphasize the bond between culture, ancestral lands, resources and the environment.²¹¹

Another feature of GIs that makes them potentially suitable instruments to protect TK relates to the perpetuity of protection that they afford. GIs recognize the quality and reputation of productions as long as the following conditions are fulfilled: a) Natural and cultural characteristics of the product in the relevant place of cultivation are maintained, b) The indication has not fallen into genericity.²¹² GI rights remain valid, therefore, as

²⁰⁸ See Rangnekar, “Demanding,” note 257, Chapter 2, at 33 (noting that “[GIs] protection constitutes a legitimate safeguard of rights acquired by generations of producers of a region who have imposed on themselves a certain number of rules and disciplines”).

²⁰⁹ See Raustiala & Munzer, note 18, Chapter 1 (also noting that “it is unsurprising that GIs are championed by those who oppose aspects of contemporary globalization, especially its despatializing and homogenizing characteristics.”)

²¹⁰ See Daniel Gade, “Tradition, Territory, and Terroir in French Viniculture: Cassis, France, and Appellation Controlee” (2004) 94 *Annals of the Association of American Geographers* 848-867.

²¹¹ See Christopher Ray, “Culture, Intellectual Property and Territorial Rural Development” (1998) 38 *Sociologia Ruralis* at 12.

²¹² See Zografos, note 320, Chapter 4, at 55.

long as the rights holders maintain the collective tradition in a specified geographical area.²¹³

Given the compatibility between GIs and the essential attributes of TK, it is easy to understand why many consider GIs convenient instruments for TK protection.²¹⁴ The discussion in this Section suggests that the *sui generis* form of GIs protection is suited to the specific characteristics and features of TK, particularly, its collective, trans-generational, permanent, and land-based nature.

As previously observed, the effectiveness of any means of GIs protection for TKBAPs depends on the policy context in which the distinct forms of protection are implemented.²¹⁵ In assessing the applicability of GIs in the legal and policy contexts of protecting TKBAPs, the next Chapter explores the opportunities and barriers of GIs implementation in developing countries in light of the economic, biodiversity, and socio-cultural challenges identified in previous Chapters.²¹⁶

Developing countries' interest in GIs grew out of a need to recognize the value of TKBAPs as a means of localising economic control in the current global economic system.²¹⁷ In regard to protecting TKBAPs with GIs, a primary proposition in this thesis, the economic impact of GIs must be assessed according to the degree to which they allow

²¹³ Downes, note 320, Chapter 4, at 269.

²¹⁴ See Chapter 4 Section 4.8 above, for suggestions of GIs as modalities for protecting TK.

²¹⁵ See Section 5.5.3, above.

²¹⁶ See Chapter 6 Sections 6.5, 6.6, 6.7 & 6.8, below.

²¹⁷ See Chapter 3 Section 3.5, above.

ILCs to maintain control over TKBAPs in global markets.²¹⁸ GIs operate on the same platform as other strategies of differentiation in their objective to improve the market share of ILCs for TKBAPs.²¹⁹ In this respect, it is relevant to compare the attributes of GIs to those of the widely accepted strategies for the participation of ILCs in international trade through differentiation, fair trade and environmental labelling initiatives. This discussion is necessary to facilitate understanding of aspects of GIs that may be relevant to dealing with the shortcomings of similar differentiation initiatives. Lessons from the implementation of fair trade and environmental labelling are used in the next Chapter to assess the practical utility of GIs for protecting TKBAPs in developing countries.²²⁰

5.9 GEOGRAPHICAL INDICATIONS AS STRATEGIES OF DIFFERENTIATION FOR TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS

GIs can be distinguished from similar instruments of product differentiation that were reviewed in Chapter Three, namely, fair trade and environmental labelling.²²¹ GIs are similar to labelling initiatives in that they differentiate specialty agricultural products in the market from commodity products. Both designations serve the same policy objective of rural agricultural development under a market-based approach. Development strategists and IP policy-makers often grapple with choosing the most suitable instruments that may enable ILCs to acquire improved market share for their speciality

²¹⁸ See Chapter 6 Section 6.4.2.

²¹⁹ See Chapter 3 Section 3.6, above, for discussion of differentiation strategies in traditional knowledge-based agricultural products.

²²⁰ See Chapter 3 Section 3.6.3.

²²¹ See Chapter 3, Section 3.6.2.

agricultural products.²²² In a recent dispute between the Ethiopian government and Starbucks, for example, the question arose as to whether GIs or other labelling schemes should be applied to indigenous coffee varieties from the regions of *Sidamo*, *Harar*, and *Yirgacheffe* in Ethiopia.

Ethiopia is believed to be the birthplace of Arabica coffee.²²³ Besides cultural importance, coffee has an important place in the Ethiopian economy. Despite the reputation of the different coffee varieties from the country for their unique and distinctive qualities, the international price of coffee has significantly dropped, due mainly to global economic pressures.²²⁴ Ethiopian coffee farmers often collect only about ten percent of the profits from their coffee; the rest goes to industry players in the coffee market that control the retail price – international importers, distributors, and roasters like Starbucks Coffee Company.²²⁵ With the support of its development partners, the Ethiopian Intellectual Property Office (EIPO) launched an initiative to control the market distribution of its specialty coffee varieties.²²⁶

²²² See U. Grote, “Environmental Labeling, Protected Geographical Indications, and the Interests of Developing Countries” (2009) 10 *The Estey Centre Journal of International Law and Trade Policy* 94.

²²³ See Oxfam International, *Crisis in the Birthplace of Coffee*, “Oxfam International Research Paper” (2002) online: Oxfam <<http://www.maketrade4fair.com/assets/english/CoffeeCrisisKafaEthiopia.pdf>>; Néstor Osorio, “The Global Coffee Crisis: A Threat to Sustainable Development” (ICO Submission to Submission to the World Summit on Sustainable Development, Johannesburg, 21 August 2002)

²²⁴ See Ramona Teuber, “Geographical Indications of Origin as a Tool of Product Differentiation: The Case of Coffee” (Paper Presented at the 105th EAAE Seminar ‘International Marketing and International Trade of Quality Food Products’, Bologna, 8-10 March 2007).

²²⁵ Osorio, *supra* note 223.

²²⁶ See Nicolas Petit, “Ethiopia’s Coffee Sector: A Bitter or Better Future?” (2007) 7 *Journal of Agrarian Change* 245.

Starbucks opposed EIPO's strategy to register trademarks-based GIs protection on the ground that fair trade or other certification models similar to, for example, the Jamaican Blue Mountain Coffee, are better suited for the communities.²²⁷ Starbucks refused to acknowledge Ethiopia's rights to register trademark rights over its coffee varieties in any form.²²⁸ Yet, Starbucks has applied to register trademark rights that contain the coffee name *Sidamo* in the US Patent and Trademarks Office (USPTO) and at the Canadian Intellectual Property Office.²²⁹ The USPTO initially denied Ethiopia's trademark claim on the ground that the names of the three coffee-producing regions are generic.²³⁰

After a worldwide lobbying campaign and negotiation efforts, Starbucks finally agreed to recognize Ethiopia's right to control the use of its specialty coffee names.²³¹ In a successful appeal, the USPTO also accepted EIPO's argument that the geographic terms

²²⁷ See Alexia Garamfalvi, "Ethiopian Coffee Trade-mark Dispute With Starbucks Runs Hot and Cold" Legal Times (March 8, 2007) available at <<http://www.law.com/jsp/article.jsp?id=1173261800496>>.

²²⁸ See Global Trade and Regional Integration Program, "The Starbucks/Ethiopian Coffee Saga: Geographical Indications as a Linchpin for Development in Developing Countries" Policy Notes No. 3 (2008) online: The Nordic Africa Institute <http://www.nai.uu.se/publications/electronic_publ/notes_trade3.pdf> at 2; Christ de Rooij, "Starbucks' Concerns and Ethiopian Coffee Farmers' Sense of Equity" (2007) online: <http://christderooij.nl/library/2007_christderooij_essay_starbucks_concerns_and_ethiopian_coffee_farmers_sense_of_equity.pdf>.

²²⁹ Starbucks's claim for trademark concerned the use of SHIRKINA SUN-DRIED SIDAMO. See "Shirkina Sun-Dried Sidamo", Starbucks Corporation, Can 1219525 (08 June 2004) abandoned.

²³⁰ See Intellectual Property Research Institute of Australia (IPRIA), *Sidamo: A Teaching Case for WIPO* (2009) online: WIPO <http://www.wipo.int/export/sites/www/academy/en/ipacademies/educational_materials/cs4_sidamo.pdf>.

²³¹ In an aggressive lobbying effort spearheaded by Oxfam, Starbucks received over 70,000 phone calls and faxes from concerned consumers showing support for the coffee farmers. See generally WIPO, "The Coffee War: Ethiopia and the Starbucks Story" online: WIPO <<http://www.wipo.int/ipadvantage/en/details.jsp?id=2621>>.

have acquired distinctiveness.²³² The dispute over Ethiopia's coffee trademark and licensing initiative highlights many issues.²³³ The choice of different instruments to solve the problem that coffee producers faced stands out as relevant to this discussion. In what might be considered a self-serving position, Starbucks urged the use of non-proprietary options in the form of "geographic identification" through certification-based labelling.²³⁴

The issue at stake for Ethiopian farmers was not a lack of recognition for the high quality of their coffee in the market. Producers of coffee are rather concerned with the low price they get for what they grow, despite the high reputation and high consumer prices that their coffee attracts in the market. What is needed is a system that would enable coffee producers to capture more of the retail value for the coffee varieties in international trade. This could most likely be achieved with instruments that would strengthen the power of coffee producers in international trade law, vis-a-vis international importers, distributors, and roasters. It is in this setting that the distinction between GIs and other labelling schemes would be of particular interest.

²³² See *ibid.*; also see Donald DePas, "Starbucks vs. Ethiopia Corporate Strategy and Ethical Sourcing in the Coffee Industry" (2011) online: The Kenan Institute for Ethics at Duke University <<http://www.duke.edu/web/kenanethics/CaseStudies/Starbucks.pdf>>.

²³³ See detail discussion of the implication of Ethiopia-starbucks dispute in different dimensions in Teshager Dagne, "The Application of Intellectual Property Rights to Biological resources: A Technique for the Less Economically Developed Countries to Maintain Control over the Biological Resources in their Territories?" (2009) 17:1 African Journal of International and Comparative Law 150; Fiona Rotstein & Andrew Christie, "Blood, Toil, Tears and Sweat: The Battle of Sidamo" (2010) 32 European Intellectual Property Review 421-427.

²³⁴ In response to Oxfam's campaign, Starbucks stated that "were trademarks to be implemented – roasters might shy away from buying the coffees for fear of becoming embroiled in complicated legal disputes. Or worse, they may buy the coffees and just market them without the trade-marked names. Letting the high quality beans go to market without a geographic identification would completely undermine the value of the brand." See Selome Araya, "From Bean to Cup: the Battle Between Starbucks and Ethiopian Coffee Farmers" ArticlesBase (03 January 2008) online: <<http://www.articlesbase.com/politics-articles/from-bean-to-cup-the-battle-between-starbucks-and-ethiopian-coffee-farmers-295718.html>>

The fundamental difference between GIs and other labelling initiatives centers on the nexus of control the two instruments offer to the communities who embrace them. Unlike the labelling initiatives, GIs are IP instruments. As such, they grant rights holders all the attributes of ownership, including the essential sticks in the bundle of the rights of an owner: The power to control the resource, the right to determine what use is made of it and under what conditions, and most importantly, the right to exclude others from it.²³⁵ GIs “permit the aggregation of market power by small farmers to enable collective action by producer collectives in relation to the promotion and marketing of their products and in dealing with intermediaries.”²³⁶ As such, GIs provide their owners with some leverage to bargain for improved prices for their products by putting power into their hands. In addition, the power of control of use and access, which comes with the ownership of GIs, enables traditional farming communities and their representatives to defensively protect TKBAPs from incidents of biopiracy.

The fair trade and environmental labelling schemes are voluntary means of providing information to consumers through identification of the products. In relation to a particular product, GIs and labelling schemes may serve the same purpose as trademarks in signalling critical information that affects the decision of consumers to buy or not to buy a particular product. The information the two communicate is, however, different. Labelling schemes appeal to consumers who are mostly willing to pay an improved price in consideration of the socio-economic condition of agricultural producers, or in

²³⁵ Lior Jacob Strahilevitz, “Information Asymmetries and the Rights to Exclude” (2006) 104 Michigan Law Review 1835. Also see Elizabeth Cooke, *Modern Studies in Property Law* (Oxford: Hart Publishing, 2001).

²³⁶ Blakeney, “Food Security”, note 134, Chapter 1, at 186.

consideration of the environmental condition of their methods of production. GIs, however, appeal to consumers who are attracted to the quality, reputation, or other distinctive characteristics of the product itself.

GIs mostly fall under the category of the IP legal regime. Fair trade labelling schemes and environmental labelling schemes are generally voluntary initiatives and do not fall under a particular legal regime.²³⁷ Some labelling organizations, for example, the Fairtrade Labelling Organizations (FLO), have registered their labels as certification marks in order to achieve a higher level of protection. In such cases, labelling schemes become certification marks and, thus, fall under the category of trademarks.

Despite the difference between GIs and other methods of product differentiation, rural development strategists often suggest a convergence between the two for creating a successful rural development strategy.²³⁸ GIs are often aligned with fair trade initiatives as a means of conveying attributes of reliability, quality, and food safety to consumers.²³⁹ Given the increasing interest of consumers in fair trade and eco-labelling schemes, labelling initiatives may be functional in efforts to increase the market share of TKBAPs

²³⁷ Organic certification schemes are exceptions in this regard, as they are institutionalised through national legislations. Organic certification is generally overseen by governments, and producers cannot use the term “organic” without proper certification. See EC, Council Regulation on Organic Production and Labelling of Organic Products and Repealing Regulation (EEC) No 2092/91 [2007] O.J. L 834/2007; Organic Foods Production Act of 1990, Title XXI of the Food, Agriculture, Conservation, and Trade Act of 1990 (Public Law 101-624); *Organic Products Regulations*, RSC 1985 c. 20 (4th Supp). Internationally, multilateral efforts for the harmonisation of standards for organic certification are underway through the International Federation of Organic Agriculture Movements (IFOAM) see Homepage: < <http://www.ifoam.org/> > .

²³⁸ See FAO and SINGER-GI, note 236, Chapter 2, at 115; Petra van de Kop, Denis Sautier & Astrid Gerz, “Origin-Based Products: Lessons for Pro-poor Market Development” (2006) 372 *Bulletins of the Royal Tropical Institute* at 89-96.

²³⁹ See Giovannucci, et al, note 236, Chapter 2, at 25.

using GIs.²⁴⁰ The complementary implementation of GIs may, in this case, eliminate the shortcomings of labelling initiatives.

Given the structural and functional fitness between GIs with TK and TK-based agricultural systems, it is relevant, at this stage, to inquire whether GIs protection should be extended to TKBAPs. The answer to this inquiry depends on how far GIs can overcome the challenges faced by ILCs as identified in this thesis. Before considering this issue in detail, the question may arise whether, and how would the establishment of proprietary rights through GIs over TKBAPs be justified under contemporary justifications for IP? The following Section examines justifications that may account for the recognition of GIs as IP rights to protect TKBAPs.

5.10 JUSTIFICATIONS FOR THE USE OF GEOGRAPHICAL INDICATIONS

The current level of GIs protection for agricultural products other than wines and spirits is justified, to varying degrees, on protecting consumers from misinformation and on the utilitarian reason to reward producers for their efforts to build reputation. As previously indicated, the utilitarian justification for trademarks has its basis in the economic rationale of information asymmetry. Opponents of heightened protection for GIs often invoke the economic rationale as the sole justification for any kind of GIs

²⁴⁰ Labelling schemes have acquired popularity in recent times due to advocacy networks, campaigns and social movements. See Christoph B. Graber & Jessica Christine Lai, *Indigenous Cultural Heritage and Fair Trade: Voluntary Certification Standards in the Light of WIPO and WTO Law and Policymaking* (Lucerne: The i-call Research Centre, 2011); Cora Dankers & Pascal Liu, *Environmental and Social Standards, Certification and Labelling for Cash Crops* (Rome: FAO, 2003); Robert A. Rice, "Noble Goals and Challenging Terrain: Organic and Fair Trade Coffee Movements in the Global Marketplace" (2001) 14 *Journal of Agricultural and Environmental Ethics* 39-66.

protection.²⁴¹ As previously noted, however, GIs are used in broader policy contexts for products that, beyond economic interest related to commercial reputation, have cultural value to local communities.²⁴² As such, justifications for the use of GIs to protect TKBAPs should incorporate rationales that explain the interdependence and interaction between economic and cultural processes.

Generally, the use of GIs to protect TK and TKBAPs can be justified on an instrumentalist view of IP in the pursuit of economic and cultural goals. As indicated in Chapter One, contemporary thinking on the role of IP via the prism of social planning theories provides for the use of IP as a tool to foster a just and attractive culture.²⁴³ The social planning theories of IP focus on designing and understanding the role of IP law and policy to advance culturally appropriate initiatives in development thinking and practice.²⁴⁴

Similarly, the rights-based approach to development promotes the use of IP law and policy to pursue development objectives in a manner that facilitates cultural participation.²⁴⁵ The strong focus on the link between culture and development has

²⁴¹ See Raustiala & Munzer, *supra* note 18; *supra* note 185; C Bramley & J.F Kirsten, “Exploring the Economic Rationale for Protecting Geographical Indicators in Agriculture” (2007) 46 *Agrekon* 69 at 75; Broude, note 138, Chapter 1.

²⁴² See Section 5.5.3 above.

²⁴³ See Chapter 1 Section 1.5.

²⁴⁴ See Chapter 1 Section 1.5; also see Aylwin et al, note 7, Chapter 1.

²⁴⁵ See Chapter 1 Section 1.5. The right to development places positive and negative obligations on those against whom the right is asserted, namely, states. According to Bedjaoui, the right to development involves the right of a people to choose its own model of development (by implication a negative right, prohibiting states from imposing exogenous development models) as well as the right to receive a share of resources that under the principle of the common heritage of mankind belong to all states (by implication a positive right). See Mohammed Bedjaoui, “The Right to Development” in Mohammed Bedjaoui, ed, *International Law: Achievements and Prospects* (Paris and The Netherlands: Martinus Nijhoff, 1991) at 1177-1193.

brought a broad understanding of development in terms of expanding human capabilities. The capability of ILCs to exercise their cultural skills, competences, and knowledge as means of maintaining their survival and cultural identity through the use of GIs constitutes an aspect of the “enlargement of people’s choices” in the understanding of development as capacitation.²⁴⁶

Conceptualising IP law in terms of development policy requires a “broader understanding of intellectual property as both an end and means of development.”²⁴⁷ One way IP policy-making may contribute to development, based on the capabilities rationale, is by enabling ILCs to “recognize and market their own knowledge production ... so that they need ‘not be seen primarily as passive recipients of the benefits of cunning development programs.’”²⁴⁸ This endeavour requires the framing of IP policy to cater to broader social and economic goals, and essentially requires the recognition of “the importance of not just producing more knowledge goods, but also of participating in the process of knowledge creation.”²⁴⁹

As means of development, the use of GIs allows ILCs to “recognize and market their own knowledge production,” so that they are able to continue to preserve and appreciate their traditional lifestyles as bases for their economic development.²⁵⁰ In this respect, the

²⁴⁶ See Jan Nederveen Pieterse, *Development Theory: Deconstructions/Reconstructions* (London: Sage Publications Ltd, 2001)

²⁴⁷ Sunder, “Invention,” note 4, Chapter 1, at 26; see also discussion in Chapter 1 Section 1.5.

²⁴⁸ Sunder, *ibid.* citing Sen, *supra* note 124.

²⁴⁹ *Ibid.* at 28.

²⁵⁰ *Ibid.* at 123.

use of GIs to protect TKBAPs avoids the portrayal of ILCs “primarily as passive recipients of the benefits of cunning development programs.”²⁵¹ In keeping with Amartya Sen’s idea of development as capacitation, the adoption of GIs may prove that “with adequate social opportunities, individuals can effectively shape their own destiny and help each other.”²⁵² In using IP as an end of development, ILCs’ ability to employ GIs in strategies to participate in knowledge production and its meaningful utilization enhances the realization of their potentials.²⁵³ This is “the highest form of development” that IP law and policy is called upon to embrace in the contemporary understanding of its role as a tool of broader social policy implementation.²⁵⁴

The use of GIs to protect agricultural products that have economic and cultural significance to ILCs can be best understood as recognition of cultural values in the economic milieu. The consideration of culture in economic settings has grown from the “new emphasis on culture as a ‘resource’” in recent times.²⁵⁵ GIs serve the cultural and economic interests of ILCs by recognising, rewarding, and protecting their creativity and inventiveness in the realm of TK.²⁵⁶

²⁵¹ See Amartya Sen, *Development as Freedom* (London: Alfred A. Knopf, 1999) at 11.

²⁵² *Ibid.* at 11.

²⁵³ Oluwatoyin Dare Kolawole, “Situating Local Knowledge within Development Agenda: Some Reflections” (2009) 2 *Consilience: The Journal of Sustainable Development* 1 at 4.

²⁵⁴ *Ibid.*

²⁵⁵ See Aylwin et al, note 7, Chapter 1; also see in Chapter 1 Section 1.2.2 for discussion of factors of the global knowledge economy.

²⁵⁶ See Chapter 5 Section 5.10, below, for detailed analysis of the application of GIs on grounds of “just and attractive society.”

As explained in Chapter Two, TK is conceptualised as “...the totality of all knowledge and practices ... in the management of socio-economic and ecological facets of life.”²⁵⁷ As such, agricultural products that are based on TK cannot be considered commodity items that are outcomes of mere economic processes. TKBAPs such as landraces, farmer varieties, food items, wines, spirits, handicrafts, and other relevant items are, rather, economic goods that embody some essence of a particular culture.²⁵⁸

The theories of cultural economy and embeddedness emphasize “the need of the market to consider more than merely economic factors.”²⁵⁹ They provide room to include cultural considerations in economic policies, and vice-versa.²⁶⁰ It is argued that cultural economy “views the market in a similar way to [the] embeddedness concept: illustrating that the free market does not account for consumer wishes for [products with cultural] attributes ... because it does not allow for the protection of these products.”²⁶¹

²⁵⁷ John Mugabe, “Intellectual Property Protection and Traditional Knowledge: An Exploration in International Policy Discourse” at 3 online: WIPO <<http://www.wipo.int/tk/en/hr/paneldiscussion/papers/pdf/mugabe.pdf>>.

²⁵⁸ Chesmond chronicles that in some racial cultures, for example, sources of food were so important to survival that they acquired a spiritual meaning and an identity of their own. Chesmond, note 160, Chapter 1, at 382. Subbiah discusses such instances in Asian cultures of the significance rice plays as an integral symbolic role in creating myth stories and is treated as a divine gift. In Bali, it is believed that the Hindu god gave birth to rice, and another god taught people how to raise it; in Shinto belief, the Emperor of Japan is the living embodiment of the god of the ripened rice plant; in Burma folklore tells of people bringing the seeds of rice from the centre of the earth and were directed to the place where rice grew well. See S.Subbiah, “Reaping what they Sow: The Basmati Rice Controversy and Strategies for Protection of Traditional Knowledge” (2004) 27 Boston College International & Comparative Law Review 529 at 535.

²⁵⁹ Rachael Williams & Marianne Penker, “Do Geographical Indications Promote Sustainable Rural Development?” online: <http://oega.boku.ac.at/fileadmin/user_upload/Tagung/2008/Band_18/18_3_Williams_Penker.pdf> at 149.

²⁶⁰ *Ibid.*

²⁶¹ *Ibid.* at 22.

The notion of cultural economy explains the understanding of “culture as economy and the interpretation of culture as residing within an economic milieu.”²⁶² The use of GIs to protect TKBAPs effectuates development objectives through the promotion of three operational modes of the cultural economy: “[P]roducing value, distributing value, and re-producing a cultural basis.”²⁶³ In the first context, the recognition of the quality and reputation of TKBAPs through GIs encourages producers to maintain traditional methods of production that give a product its identifiable quality, reputation or other characteristic. In the second context, a public agency and producer groups oversee the maintenance of culturally-oriented traditional production methods. Likewise, the respective communities, mostly with assistance from public agencies, exploit, regulate, and control the use of GIs in domestic and international commercial transactions. As a consequence (and thirdly), the community is seen as an important source of knowledge and ability that can be used in development activity, and thus, “the local culture ... becomes more than an instrument to fuel trade in the global economy, and instead is rediscovered as the source of local wisdom and ethics.”²⁶⁴

²⁶² David Throsby, *Economics and Culture* (Cambridge: Cambridge University Press, 2001) at 11.

²⁶³ According to Iacovo, the three processes interact in the following manner:

[T]he first process activates private enterprises in the reorganization of local resources for their clients. In doing so, they mainly employ markets. In the second step, local public bodies are asked to define local criteria and institutions that could regulate the distribution systems ... In the third step, the local community is the primary source for producing and reproducing local cultural values as a basis for local identity and for internal and external communication.

Francesco di Iacovo, “New Trends in the Relationship Between Farmers and Local Communities in Tuscany” in Guido van Huylenbroeck & Guy Durand, *Multifunctional Agriculture: A New Paradigm for European Agriculture and Rural Development Perspectives on Rural Policy and Planning* (Hampshire: Ashgate, 2003) at 105.

²⁶⁴ *Supra* note 262 at 8.

An IP framework that utilizes GIs as instruments for protecting TKBAPs allows ILCs to participate in global economic processes that have impacts on their cultural well-being.²⁶⁵ The use of GIs to resist global economic pressures on traditional systems is supported by the theory of embeddedness. Reaffirming the integration of culture with economy, the theory of embeddedness rejects the view that economic processes are separate from social and cultural phenomena.²⁶⁶ As Barham observes, embeddedness is inherent in “label of origin systems [in the likes of GIs]” because the protection helps to “rebalance the direction of the overall economy to respond to the values the labels convey.”²⁶⁷ In the case of TKBAPs, the values that GIs convey arise from local and tradition-based production methods that form part of the cultural, historical, and geographic origin of the product. GIs, therefore, “re-embed a product in the natural processes and social context of its territory,” and as a result, serve as instruments of “localizing production within the framework of globalization.”²⁶⁸

To conclude, the discussion in this Section indicates that both economic and cultural rationales are factors that justify the recognition of GIs in a proprietary context. Although

²⁶⁵ See Chapter 3 Section 3.4, above, for discussion of the impact of global economic processes on ILCs.

²⁶⁶ See Hinrichs, C. Clare, “Embeddedness and Local Food Systems: Notes on Two Types of Direct Agricultural Market” (2000) 16 *Journal of Rural Studies* 295; Nicholas Parrott, Natasha Wilson & Jonathan Murdoch “Spatializing Quality: Regional Protection and the Alternative Geography of Food” (2002) 9 *European Urban and Regional Studies* 241; Colin Sage, “Social Embeddedness and Relations of Regard: Alternative ‘Good Food’ Networks in South-west Ireland” (2003) 19 *Journal of Rural Studies* 47–60; Greta R. Krippner, “The Elusive Market: Embeddedness and the Paradigm of Economic Sociology” (2001) 30 *Theory and Society* 775-810; Roberta Sonnino, “Embeddedness in Action: Saffron and the Making of the Local in Southern Tuscany” (2007) 24 *Agriculture and Human Values* 61–74; Mark Granovetter “Economic Action and Social Structure: The Problem of Embeddedness” (1985) 91 *The American Journal of Sociology* 481-510.

²⁶⁷ Barham, “Towards,” note 273, Chapter 3, at 350.

²⁶⁸ *Ibid.*

most often adherents of neo-liberal free-trade theories argue against an expanded protection of GIs purely based on economic rationales,²⁶⁹ cultural concerns remain important considerations that are worth the extra cost for states to get involved, particularly, in the adoption of GIs in *sui generis* forms.

5.11 CONCLUSION

Having identified GIs as a modality to protect TKBAPs in the previous Chapter, the discussion in this Chapter examined the protection of GIs under different legal frameworks. The discussion largely focused on the degree and form of GIs protection at international, regional and national levels. In addition, it identified the policy assumptions in the different legislative frameworks within which GIs operate.

As a concept, GIs encompass broad categories of rights that evolved in the form of legal protection for AOs and indications of sources. The TRIPS Agreement recognizes GIs rights in the most comprehensive sense, and this allows WTO members to determine the scope of GIs protection according to their domestic priorities. The analysis in this Chapter has shown that there are significant differences in policy and in the underlying rationales that affect the scope of GIs protection in different jurisdictions. It is notable that the US and its allies in the WTO find it difficult to recognize two essential attributes of GIs as: i) Unique varieties of IP, fundamentally distinguished from trademarks; and ii)

²⁶⁹ See Chapter 1 Section 1.6 above, for arguments against the extension of GIs based on market-based rationale for GIs. For example, Broude argues that market forces involved in the agri-food sector are “so pervasive, that GIs cannot in and of themselves, as legal agents, prevent market influence on local culture, leading to degrees of cultural transformation and international cultural homogenization.” Broude, note 138, Chapter 1 at 649.

Structurally and functionally designed to convey particularised information inherent in a product in and of itself, such as a given quality, reputation or other characteristic.

As regards the applicability of GIs to protect TKBAPs, the discussion in this Chapter has indicated that economic rationales that justify current levels of GIs protection in the WTO can be used to protect TKBAPs. Beyond economic rationales, other considerations, such as the preservation of local culture and the pursuit of rural development, affect the nature and scope of protection for GIs in international and domestic jurisdictions. Most agricultural products from ILCs are clearly distinct from other products to which the economic rationale for protection applies.

TKBAPs are distinguished because of quality, reputation or other characteristic acquired from the culture of production embedded in a *terroir*. The recognition of these attributes in TKBAPs through GIs entails, therefore, a form of absolute protection that can be defended against all usurpation and evocation.²⁷⁰ In consideration of this, the discrimination between wines and spirits vis-avis other agricultural products at the level of GIs protection under the TRIPS Agreement is unjustified. No legal reasons or substantive justifications exist for a discriminatory treatment between GIs for wines or spirits, and for other products.

²⁷⁰ Although the Lisbon Agreement describes the protection to AOs as a protection against “usurpation,” international law does not define describe acts that constitute “usurpation”. See Lisbon Agreement, note 128, Chapter 1, Art. 3. For the purpose of this thesis, “usurpation” can be understood in a property context as “the sale of an asset (or a right) in which one has no ... [proprietary] interest” Karl Widerquist, “Does She Exploit or Doesn't She?” in Karl Widerquist, Michael Anthony Lewis & Steven Pressman, *The Ethics and Economics of the Basic Income Guarantee* (Hampshire: Ashgate Publishing, Ltd., 2005). In this context, protection of GIs against “usurpation” refers to the protection of GIs rights holders against the use of the GIs by individuals that do not have recognition as rights holders to the GIs.

The discussion in this Chapter has also shown that the rationales for GIs protection in the EU share similar policy objectives with rationales to protect TKBAPs in other parts of the world. Developing countries' interest in GIs and their demand for equivalency between the level of protection for wines and spirits and other agricultural products should not be dismissed outright as another instance of a misguided symmetry argument.²⁷¹ The suitability of the protective features of GIs with the characteristics of TK indicates that GIs most closely match the needs of ILCs in protecting TKBAPs. As the next Chapter will show, there are similarities in the functional role that the EU assigns to GIs protection and in the policy expectations from GIs protection in developing countries. In this respect, the use of GIs as IP instruments to protect TKBAPs can be justified through a combination of theories that recognise the complementarity of the cultural and economic aspects of development.

Despite the potential of GIs to accommodate TK systems, the effectiveness of GIs as instruments to protect TKBAPs should be based on a careful examination of the impacts that GIs implementation would have in the lived reality of ILCs. The role of GIs in protecting TKBAPs can be satisfactorily answered through a careful consideration of the degree to which GIs address concerns that have been identified in previous Chapters.

The next Chapter examines the challenges and opportunities for using GIs to respond to the prevailing social, economic, cultural and ecological concerns in developing

²⁷¹ Symmetry argument refers to an argument in the line of “if Europe has it for wine, we should have it for coffee.” See Ben Shepherd, *Costs and Benefits of Protecting Geographical Indications: Some Lessons from the French Wine Sector*, GEM Working Paper (2006).

countries. In considering the potential of GIs to protect TKBAPs in those countries, attention is drawn to relevant features of GIs, mainly, the *sui generis* system of GIs in accommodating the attributes of TK. The discussion analyzes major questions associated with the implementation of GIs in developing countries, and assesses conditions for policy development regarding the applicability of GIs for protecting TKBAPs.

CHAPTER 6 THE RELEVANCE OF GEOGRAPHICAL INDICATIONS FOR PROTECTING TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS

6.1 INTRODUCTION

The discussion in previous Chapters outlined justifications for protecting TK in general, and TKBAPs in particular.¹ The attention that TK and TKBAPs received in international law-making demonstrates a broad recognition of the need and desire to protect TK systems and practices. Despite the inherent inconsistency between existing systems of IPRs and traditional and customary systems of ILCs, the role of IP is vital in the search for different modalities to accommodate the needs of ILCs in regard to different aspects of TK. GIs emerged on the international scene as an IP-based modality that has relevance to the regulation and protection of TK as it pertains to agricultural production.

The analysis in the preceding Chapter shows that GIs, at least in *sui generis* forms, are structurally and functionally suited to protect TKBAPs. The relevance of GIs for protecting TKBAPs should also be considered in terms of whether GIs meet the various needs and expectations of ILCs in agricultural production.² In this respect, the applicability of GIs can be determined based on the potential of GIs for use in pursuit of economic, socio-cultural and biodiversity objectives in the domestic policy of developing countries. To this end, the discussion in this Chapter examines opportunities, challenges and constraints of implementing GIs in developing countries in light of the impact that

¹ See discussion in Chapter 3 Section 3.2, 3.5 & Chapter 4, Section 4.7.

² See discussion of the the needs and expectations of ILCs, developed in the context of the threats and challenges to TKBAPs in the global economy, in Chapter 3 Sections 3.3 & 3.4.

their implementation may have on economic activities, food security, biocultural diversity and aspects of biopiracy.

The discussion in Section 6.2 starts with a brief account of the protection of GIs in the legal framework of some developing countries, namely, Ghana, India, Kenya, and Morocco. It recalls the distinctive features of GIs protection in these countries in comparison with those of the EU. Section 6.3 considers economic benefits that in general may be derived from GIs protection.

Section 6.4 examines key considerations that may influence outcomes in the implementation of GIs. As such, this Section focuses on the challenges and opportunities for establishing, operating and enforcing GIs protection in developing countries. To support the analysis in Section 6.4, I refer to secondary data from the marketing of TKBAPs from some developing countries, such as Vietnam in relation to its Phu Quoc fish sauce; Ethiopia in relation to its indigenous coffee varieties; and Benin with respect to its Gari Missè. Overall, the discussion in Section 6.3 and Section 6.4 aims to show whether, and how, economic concerns in the implementation of GIs weigh against broader goals of biodiversity, cultural and socio-economic policy.

From Section 6.5 to Section 6.8, the discussion considers the objectives that should be taken into account in assessing the use of GIs in non-economic policy areas, namely, policy contexts of GIs for the protection of biodiversity; the prevention of biopiracy; the achievement of food security; and the preservation of cultural identity. In Section 6.5, I examine the degree to which GIs may be relevant to the realization of biodiversity conservation objectives. Section 6.6 demonstrates the potential of GIs to contribute to the

promotion of food security. The discussion in Section 6.7 considers the contexts in which GIs may benefit developing countries in preventing biopiracy. Section 6.8 focuses on the the functions of GIs as measures that could be utilized to respond to the challenges that the process of globalization poses in cultural spheres.

The last part of the Chapter considers difficulties that may be encountered in the use of GIs for protecting TK and TKBAPs. Section 6.9 discusses the limitations and constraints of GIs protection in two respects. The first relates to difficulties that may arise in using GIs in the broad context of TK protection. Second, I explore limitations inherent in the system of GIs that should be acknowledged, despite their attractiveness for the protection of TKBAPs. These limitations relate, among others, to technical challenges of implementing GIs in cases of trans-border, and geographically scattered areas of production.

6.2 GEOGRAPHICAL INDICATIONS IN DEVELOPING COUNTRIES

It was explained in the previous Chapter that GIs protection can be acquired in WTO member countries only if there is strong protection at the local level in the country of origin.³ The establishment of GIs system in countries of origin is a *sine qua non* for international protection of GIs. The establishment of GIs system in the country of origin is important for a number of reasons.

First, the very nature of a GIs system is dependent on the link between a product and its geographical location which is a basis for the product's distinctive attributes. Under

³ See Chapter 5 Section 5.4.1; TRIPS Agreement, note 13, Chapter 1, Art. 24 (9): "There shall be no obligation under this Agreement to protect geographical indications which are not or cease to be protected in their country of origin, or which have fallen into disuse in that country."

the TRIPS Agreement, the description of GIs as “indications [which] identify a good as originating in the territory,” and the requirement that the “quality, reputation or other characteristic of the good [be] essentially attributable to [a] geographical origin,” necessitate the establishment of a qualitative link between the product and the geographical environment in which it is found.⁴ Once a product’s association with its geographical origin breaks down, i.e., if the GI does not denote the product’s geographical origin anymore, it falls into a generic category and, thus, the product is not protected in other countries.⁵ As the discussion below demonstrates, the territorial link that exists between a product and its area of production constitutes an essential part of considerations for assessing the instrumentality of GIs to protect TKBAPs.⁶ Given the land-based nature of most ILCs’ practice, the requirement of geographical link as a condition for GIs protection adds significant value to GIs as tools to contextualize policy objectives in the protection of biodiversity,⁷ the preservation of cultural identity,⁸ and the prevention of biopiracy.⁹

The protection of GIs systems in domestic legal frameworks is also required to prevent or reduce the likelihood of internal fraud (within the country of origin) that could

⁴ *Ibid.* at Art. 22 (1).

⁵ See Chapter 5 Section 5.7 above, for discussion of the concept of “genericity.”

⁶ See Chapter 2 Section 2.8 above, for discussion of the relevance of other aspects of the definitional elements of GIs for TKBAPs.

⁷ See discussion below Section 6.5.

⁸ See discussion below Section 6.8.

⁹ See below Section 6.9.

compromise the validity of GI protection for a product in other jurisdictions.¹⁰ This relates to the need to maintain the authenticity of the product in order to claim continued protection of the GI in other jurisdictions.

Many developing countries, and members and non-members of the WTO, have already introduced, or are in the process of introducing *sui generis* forms of GIs protection.¹¹ India introduced the *Geographical Indications Registration and Protection Act of 1999*, to set out conditions, standards and procedures for the registration of GIs rights.¹² It has also prepared detailed guidelines to cover practical aspects of its implementation.¹³ In Morocco, the law that regulates winemaking, stocking, and distribution of wines provides for the protection of Appellations of Origin.¹⁴ In 2008, Morocco adopted a new law that extends *sui generis* forms of GIs protection to products other than wines.¹⁵

¹⁰ Giovannucci, et al, note 236, Chapter 2 at 95.

¹¹ Among African countries, Algeria (non-WTO member), Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Gabon, Guinea, Ivory Coast, Mali, Mauritania, Mauritius, Mozambique, Niger, Senegal, Togo, Tunisia, Zimbabwe have adopted *sui generis* forms of GIs protection. See O'Connor and Company, note 346, Chapter 4.

¹² See Indian Parliament, *The Geographical Indications of Goods (Registration and Protection) Act*, The Gazette of India Extraordinary No. 48, New Delhi, 30 December 1999.

¹³ Ministry of Commerce & Industry (Department of Industrial Policy and Promotion), *The Geographical Indications of Goods (Registration and Protection) Rules* (March 8, 2002) New Delhi, online: <http://www.ipindia.nic.in/girindia/GI_Rules.pdf>.

¹⁴ *Decree Regulating Wine-Making and the Stocking, Circulation and Trading of Wines*, No. 2-75-321, 12 August 1977 (25 Shaban 1397) <<http://www.wipo.int/wipolex/en/details.jsp?id=2978&tab=2>>.

¹⁵ *Law Concerning Distinctive Signs of Origin and Quality for Foodstuff, Agricultural and Fishing Products*, No. 25-06, 23 May 2008; *Morocco Food and Agricultural Import Regulations and Standards – Narrative FAIRS Country Report*, 24 July 2009, GAIN Report Number MO9012.

South Africa protects wines and spirits through a *sui generis* system of GIs.¹⁶ GIs for other products are protected through the provisions of the trademark regime concerning certification and collective trademarks.¹⁷ Similarly, Kenya protects GIs through its trademark regime.¹⁸ The Kenyan parliament drafted the *Bill for the Geographical Indications Regulations*, which provides for a *sui generis* form of GIs protection.¹⁹ Other African countries, including Ghana, Ethiopia and Uganda are in the process of introducing legislation that provide for *sui generis* forms of GIs protection.²⁰

GIs legislation in most developing countries have two fundamental attributes that distinguish them from those in the EU system.²¹ First, the scope of protection for GIs in developing countries (proposed and existing) appears to be more extensive than that of the EU. For example, Ghana's proposed legislation extends protection to "natural and agricultural products and the products of handicraft and industry."²² Kenya's draft Bill

¹⁶ *Liquor Products Amendment Act*, 24 November 2008, No. 32 Cape Town

¹⁷ See *South Africa Trade Marks Act*, No. 194, December 22, 1993 online: <<http://www.wipo.int/wipolex/en/details.jsp?id=4074>>

¹⁸ See Giorgio Bocedi & GB Avvocati, *Country Paper, Kenya: Which Protection for GIs and What Potential GI Products?* (Paper Commissioned by the ACP-EU Program Trade.Com in the Frame of the ACP Regional Workshops on Geographical Indications, April - May 2010).

¹⁹ See *Ibid.* at 9.

²⁰ See The International Institute for the Advanced Study of Cultures, Institutions and Economic Enterprise, *Technical Assistance to the Uganda Ministry of Tourism, Trade and Industry in the Area of Intellectual Property Rights: Final Report* (2009) online: Tradecom < http://www.tradecom-acepu.org/Portals/49/IIAS_Final_Report.pdf>.

²¹ See detailed discussion of GIs legislation in the EU system in above, Chapter 5, Section 5.5.3.

²² See Ghanaweb, "Parliament Passes Four Bills" (12 December 2003) online: <<http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=48134>>.

covers “natural, agricultural, food, handicraft or industrial products;” and, Morocco’s new law extends GIs protection to “foodstuff, agricultural and fishing products.”²³

The expansive scope of GIs in the legislation of developing countries indicates that these countries expect to use GIs for a wide variety of agricultural products. In most developing countries where economies are essentially agrarian, agricultural production yields a broad variety of outputs from the dominant activities of farming, livestock keeping, forestry and fisheries.²⁴ In the industrialized countries of the EU where agricultural production represents a relatively minor proportion of national incomes, GIs protection is mostly applied to alcoholic and cheese products.²⁵ Thus, GIs have high importance to developing countries in terms of their exports of a wide variety of TKBAPs.

Second, the GIs system in most developing countries is not well developed to facilitate the coordination and participation of producer groups, administrative authorities and other stakeholders.²⁶ The successful implementation of GIs in the EU countries is the result of stakeholder participation at all stages of GIs implementation including in the

²³ Law 25-06 of 23 May 2008 Concerning Distinctive Signs of Origin and Quality for Foodstuff, Agricultural and Fishing Product; Morocco Food and Agricultural Import Regulations and Standards Narrative FAIRS Country Report, 24 July 2009, GAIN Report Number:MO9012

²⁴ See European Commission, *Agriculture and Preferential Trade Relations with Developing Countries: The Case of ACP Countries* (2008) online: Gateway to the European Union <http://ec.europa.eu/agriculture/developing-countries/publi/overview/text_en.pdf>.

²⁵ There are currently 2945 GIs registered in the EU for wines only, and 327 for spirits. But the combined number of registered GIs and pending applications for other agricultural products and foodstuffs is 1289, of which 240 are for cheese. For list of wines and spirits, see EC Database, *DOOR* online: <<http://ec.europa.eu/agriculture/quality/door/list.html>>; EC Database, *E-Spirits-Drinks*, online: <<http://ec.europa.eu/agriculture/spirits/>>; for agricultural products and foodstuffs, see EC Database, *E-BACCHUS* online: <<http://ec.europa.eu/agriculture/markets/wine/e-bacchus/index.cfm?&language=EN>>

²⁶ See Chapter 5 Section 5.5.2 above, for discussion of GIs in the EU context.

specification and monitoring of production standards, and the enforcement and defending of GIs rights.

The current state of legislative development for GIs in most developing countries allows for future determination of IP policy based on an *ex ante* judgement of the opportunities and challenges of GIs implementation in various policy areas. For effective use of GIs as instruments of protecting TKBAPs, countries that have already introduced GIs will need to recalibrate their systems of implementation, but, those in the process of introducing a legal framework will need to establish institutional and organizational structures of implementation that reflect their policy priorities. The discussion in the following Sections considers the various policy priorities that developing countries may take into account in deciding to adopt GIs for protecting TKBAPs.

The previous Chapters attempted to explain why IP-based protection of TK may be relevant in the specific context of TKBAPs.²⁷ In addition, the analysis of the functional and structural suitability of GIs has shown the potential of GIs as IP-based modality to protect TKBAPs.²⁸ In order to address the hypothesis in this thesis that GIs, properly designed, may serve the needs and expectations of ILCs in protecting TKBAPs, it is necessary to evaluate the significance of GIs for the realization of multiple goals in socio-economic, cultural, biodiversity and other policy contexts.²⁹ In this respect, arguments in favour of, or against the expanded protection of GIs in developing countries mostly arise

²⁷ See Chapter 4 Section 4.7, for discussion of the need for intellectual property-based protection.

²⁸ See Chapter 5 Section 5.8, for discussion of the suitability of GIs for TK protection.

²⁹ See Chapter 3 Sections 3.2, 3.3, and 3.4, for justifications to protect TK and TKBAPs in developing countries.

from an evaluation of the pros and cons of their protection in economic evaluation.³⁰ For this reason, the discussion in this Chapter assesses the challenges and opportunities for implementing GIs from economic perspectives, and proceeds by analyzing the role of GIs in different policy contexts.

In the economic analyses of GIs' applicability to TKBAPs, a major consideration is given to economic benefits that GIs may generate for developing countries.³¹ As the EU experience demonstrates, successful implementation of GIs brings economic benefits to agricultural producers whose economies depend on the sale of agricultural products in export and domestic markets.³² Before inquiring whether, and how, these benefits can be realized by developing countries, the following Section evaluates the potential economic benefits associated with the use of GIs for TKBAPs.

6.3 THE ECONOMIC POTENTIAL OF GEOGRAPHICAL INDICATIONS

The economic potential of GIs for agricultural products is broadly recognized.³³ Their significance on this score arises mainly from the opportunity they provide for recognizing

³⁰ See Justin Hughes, *Coffee and Chocolate – Can We Help Developing Country Farmers through Geographical Indications?* A Report Prepared for the International Intellectual Property Institute, Washington, D.C. (2009) online: IPIPI <http://www.iipi.org/reports/a-ip27E_Hughes.pdf>; Amy P. Cotton, "123 Years at the Negotiating Table and Still No Dessert? The Case in Support of TRIPS Geographical Indication Protections" (2007) 82 *Chicago-Kent L Rev* 1295; Stéphan Murette, "Can Foreign Producers Benefit from Geographical Indications Under the New European Regulation?" (2009) 10 *The Estey Centre Journal of International Law and Trade Policy* 65-76; Emily C. Credit, "Terroir v. Trademarks: The Debate over Geographical Indications and Expansions to the TRIPS Agreement" (2008-2009) 11 *Vand J Ent & Tech L* 425.

³¹ See list in *Ibid.*

³² See Chapter 5 Section 5.5.3 above.

³³ See Cerkia Bramley, Estelle Biénabe & Johann Kirsten, "The Economics of Geographical Indications: Towards A Conceptual Framework for Geographical Indication Research in Developing Countries" (2007) 46 *Agrekon* 109; Broude, note 138, Chapter 1; Sven Anders & Julie A. Caswell, "The Benefits and Costs of

the “added value” in TKBAPs.³⁴ GIs recognize the value of TKBAPs by changing the paradigm in which these products are made available to the market: From physical goods under the “trade-in goods” regime, to culturally oriented knowledge-based products in the “trade-related intellectual property” regime.³⁵

GIs add value to TKBAPs through the retention of economic benefits in a production region in two ways: Increase in the price of the products, and reduction in the cost of agricultural inputs. In the first way, for example, a UK Commission tasked to investigate the impact of IP on developing countries observes: “The main economic benefit of geographical indications would be to act as a quality mark which will play a part in enhancing export markets and revenues.”³⁶ In the face of a downward trend in prices for agricultural products from ILCs in the global market, as explained in Chapter Three, GIs are valuable instruments to generate premium prices for products that are based on tradition.³⁷

There is abundant evidence to substantiate the claim that GIs protection brings premium prices for products in bigger markets. A 2005 study in the EU found an average of ten to fifteen percent price difference between products protected by GIs and similar

Proliferation of Geographical Labelling for Developing Countries” (2009) 10 *The Estey Centre Journal of International Law and Trade Policy* 73; Sophie Reviron, et al, “Geographical Indications: Creation and Distribution of Economic Value in Developing Countries” NCCR Trade Regulation Working Paper No 2009/14 (2009).

³⁴ See Chapter 3 Section 3.5, for discussion of “Recognising the Value of TKBAPs.”

³⁵ See Chapter 4 Section 4.7 above, for discussion of the need to “add value” to TKBAPs, and to change the market setting for TKBAPs from “goods” to IP.

³⁶Note 145, Chapter 5, at 101.

³⁷ See Chapter 3 Section 3.4.2.

products without such protection.³⁸ Similarly, a 1999 survey on consumer interest indicates that forty percent of consumers in the EU are ready to pay a ten percent premium price for origin-guaranteed products.³⁹ Consumer interest in GIs-covered products can also be seen from a consumer survey in the US in which seventy-two percent of respondents believe that geographic characteristics, such as soils, influence the taste and quality of foods.⁴⁰ Fifty-six percent of consumers included in the survey were willing to pay ten to thirty percent more for locally produced food items.⁴¹

The economic significance of GIs is not necessarily restricted to a European setting, where the use of GIs is well developed and advanced. In China, for example, the extension of GIs protection to Zhangqui scallions from the city of Zhangqui resulted in an average price increase of twenty to thirty per cent per year.⁴² Similarly, the Beijing Administration for Industry and Commerce reports significant improvement in the income of local farmers of Pinggu Peach due to the rise of the market value of the product from one-and-half to four Yuan per kilo, after it was protected by GIs.⁴³ Similarly, the Jamaican Blue Mountain coffee is currently at “the pinnacle of its success,” following GIs

³⁸ D. Vivas-Eugui & C. Spennemann, *The Treatment of Geographical Indications in Recent Regional and Bilateral Free Trade Agreements*, UNCTAD/ITCSD Project on Intellectual Property and Sustainable Development (2006) at 24.

³⁹ See European Commission, *supra* note 100, Chapter 1; note 222, Chapter 5 at 105.

⁴⁰ DeCarlo, Thomas E., et al, “Consumer Perceptions of Place-Based Foods, Food Chain Profit Distribution, and Family Farms” Leopold Center for Sustainable Agriculture Competitive Grant Report MSP05-2004 (2006) at 9.

⁴¹ *Ibid.*

⁴² WIPO, “Geographical Indications: Tasting success in China” (2007) 4 WIPO Magazine 8.

⁴³ *Ibid.*

protection in the form of certification marks.⁴⁴ In general, a study conducted by the United Nations Conference on Trade and Development (UNCTAD) India Program indicates that the implementation of GIs can increase the price of agricultural products in the range of ten to fifteen per cent.⁴⁵

The economic benefits of GIs are realized, not only in the form of improved price, but also through reduction in the cost of agricultural production because of commitment to traditional methods of production, rather than modern industrial agricultural techniques.⁴⁶ Recent increases in the prices of agricultural products, despite low returns for farmers, are partly attributable to high costs of agricultural inputs such as fertilizers and energy.⁴⁷ Through adherence to traditional methods of production, which are often set as the bases of GIs protection, producers of TKBAPs can reduce the costs of expensive industrial agricultural inputs, such as hybrid crop varieties, fertilizers, herbicides and other weed control methods.⁴⁸

Among others, the economic benefits of GIs are expressed in terms of increases in agricultural production and in the number of people employed in the sector. In France, for example, increase in the production of *Lentilles vertes du Puy* from 13600 quintals in

⁴⁴ Giovannucci, et al, note 236, Chapter 2.

⁴⁵ See Abhijit Das, “Geographical Indications: UNCTAD’s Initiative in India” UNCTAD India Project (Organised by UNDP RCC, UNDP Cambodia and Economic Institute of Cambodia Phnom Penh, 4 September 2008).

⁴⁶ See Mevhibe Albayrak & Erdoan Gunes, “Traditional Foods: Interaction between Local and Global Foods in Turkey” (2010) 4 African Journal of Business Management 555-556.

⁴⁷ International Rice Research Institute, “The Rise Crisis: What Needs to be Done?” (2008) online: <http://www.irri.org/publications/today/pdfs/7-3/RT_The_Rice_Crisis.pdf>

⁴⁸ See Chapter 3 Section 3.3.1 above, for discussion of the economic impacts of transformation of agricultural production.

1990 to 34000 quintals in 1996 and 49776 quintals in 2002 is attributed to GIs protection.⁴⁹ In terms of employment, the number of producers of *Lentilles vertes du Puy* almost tripled from 395 in 1990, to 750 in 1996, and 1079 in 2002.⁵⁰ A case study of Boseong green tea in South Korea reveals that within only six years of implementation, GIs promoted the reputation of the product in the market, leading to increased production of this tea and the development of related industry in the region.⁵¹

GIs signify consumers' preference for origin-based, authentic, and quality products – attributes that characterize most TKBAPs.⁵² In a global economic system that promotes specialization and modernization as the only successful paradigms, GIs provide ILCs an alternative modality that is built on agricultural knowledge and practice.⁵³ In attracting premium prices for distinctive agricultural products, and by improving the overall economic condition of agricultural production, GIs contribute to the economic vitality of agricultural production in a defined territory.⁵⁴

⁴⁹ See O'Connor and Company, *Geographical Indications and the Challenges for ACP Countries* Agri-trade Discussion Paper (2005) at 3.

⁵⁰ *Ibid.* at 4.

⁵¹ See Jeongwook Suh & Alan MacPherson, "The Impact of Geographical Indication on the Revitalization of A Regional Economy: A Case Study of 'Boseong' Green Tea" (2007) 39 *Area* 518.

⁵² See Chapter 2 Section 2.6, above, for a more detailed discussion of the attributes and characteristics of TKBAPs; also see Chapter 2 Section 2.8 above, for discussion of the link between GIs and TKBAPs.

⁵³ See Chapter 3 Section 3.3.1 above, for discussion of the impact of dominant economic models; also see Hajnalka Petrics & Richard Eberlin, eds, *Global Food Security – A Global Challenge for Politics and Industry* (Forum International Green Week- Technical Forum, 16 January 2009, Berlin, Germany) at 9.

⁵⁴ See Rangnekar, "Review", note 210, Chapter 1.

Major doubts about the feasibility of using GIs to protect TKBAPs in developing countries arise from the fact that GIs systems are exclusively of European origin.⁵⁵ By 1998, for example, 766 GIs are protected under the Lisbon Agreement, of which European countries hold ninety-five per cent.⁵⁶ The EU producers have developed sizable market shares and brand recognition for distinctive agricultural products due to sustained marketing efforts over GIs products. It is noted that developing country producers will need significant investment in product development and advertising to break into the agri-food market, which is already controlled by EU producers.⁵⁷ Because GIs are not widely established in developing countries, it is often argued that cost challenges in adopting GIs to protect TKBAPs may outweigh any benefits.⁵⁸ The following Section explores the challenges to developing countries that may arise in efforts to implement GIs.

6.4 CHALLENGES AND OPPORTUNITIES FOR DEVELOPING COUNTRIES IN THE IMPLEMENTATION OF GEOGRAPHICAL INDICATIONS

Beyond the question whether the protective features of GIs are suited to TKBAPs – an issue addressed in previous Chapters – the applicability of GIs in developing countries

⁵⁵Note 145, Chapter 5 at 90; also see Jinghua Zou, “Rice and Cheese, Anyone? The Fight Over TRIPS Geographical Indications Continues” (2005) 30 Brooklyn J Int’l L 1141;

⁵⁶See Note 145, Chapter 5.

⁵⁷ See Note 185, Chapter 5.

⁵⁸ See arguments in this line, Kerr, note 48, Chapter 5; note 185, Chapter 5; Steven A. Bowers, “Location, Location, Location: The Case Against Extending Geographical Indication Protection Under the TRIPS Agreement” (2003) 31 AIPLA Q J 129 at 133–134; Valérie Boisvert, *From the Conservation of Genetic Diversity to the Promotion of Quality Foodstuff: Can the French Model of ‘Appellation d’Origine Contrôlée’ be Exported?* CAPRI Working Paper # 49 (2006); Sophie Reviron, *Geographical Indications: Creation and Distribution of Economic Value in Developing Countries*, Working Paper No 2009/14 (2009); Ben Shepherd, *Costs and Benefits of Protecting Geographical Indications: Some Lessons from the French Wine Sector*, GEM Working Paper, (2006).

may depend on, among others, considerations of the economic implication of GIs.⁵⁹ The implementation of GIs entails a range of tasks that include establishing the legal and institutional structures of GIs; maintaining the “quality, reputation or characteristics” of the products; enforcing and defending the rights; and building marketing initiatives in international markets. In economic terms, these tasks involve significant cost and efforts that, some believe, may outweigh benefits.⁶⁰ A closer look at the efforts and activities for the implementation of GIs is necessary to assess whether GIs are viable options for protecting TKBAPs in developing countries.

The tasks required for the implementation of GIs may, for the purpose of discussion in this thesis, be categorized into two: Those relating to the introduction of GIs, and those dealing with the operational use of GIs.⁶¹ The discussion in the following Section examines the practical aspects of GIs implementation in developing countries based on the burden and impact of introducing GIs. The discussion also considers specific

⁵⁹ See discussion in Chapter 5, Section 5.8; also see Sarah Bowen, “Development from Within? The Potential for Geographical Indications in the Global South” (2010) 13 *J World Intell Prop* 231–252; Nancy Kremers, “Speaking with a Forked Tongue in the Global Debate on Traditional Knowledge and Genetic Resources: Is US Intellectual Property Law and Policy Really Aimed at Meaningful Protection for Native American Cultures?” (2004-2005) 15 *Fordham Intell Prop Media & Ent L J* 1 at 131-132; Delphine Marie-Vivien, “Geographical Indications and the TRIPS Agreement: What Protection is Provided to Geographical Indications in WTO members?” (2010) 13 *J World Intell Prop* 121–147; Giovannucci, et al, note 236, Chapter 2, at 75; Julie A. Caswell & Sven Anders, “The Benefits and Costs of Proliferation of Geographical labelling for Developing Countries” (2010) 10 *The Estey Centre Journal of International Law and Trade Policy* 77-93.

⁶⁰ See Shepherd, *supra* note 58; Boisvert, *supra* note 55; Sophie Reviron, *Geographical Indications: Creation and Distribution of Economic Value in Developing Countries*, Working Paper No 2009/14 (2009); Kerr, note 48, Chapter 5, at 6.

⁶¹ The word “operational” can be used in many different ways. Broadly, its use may clarify the word “operationalizing” as “something that can be put into practice or used.” Operationalization in the social sciences field is the act of specifying exactly how a concept will be measured in quantitative research. Operational is used in this thesis to refer to the practical use of GIs. See Flavio Comim, *Operationalizing Sen’s Capability Approach* (Paper Prepared for the Conference Justice and Poverty: Examining Sen’s Capability Approach, Cambridge 5-7 June 2001).

circumstances and particular conditions that may be relevant to efforts to overcome the cost and burden of developing GIs systems.

6.4.1 INTRODUCING GEOGRAPHICAL INDICATIONS

As previously discussed, most developing countries do not have well-developed systems for IPRs, including GIs.⁶² In light of this, introducing a functional system of GIs requires the establishment of institutional, legislative and organizational frameworks. Many contend that increased protection of GIs would actually be disadvantageous to developing countries because they will be required to massively expand their legal and administrative capabilities.⁶³

As a first step, countries will need to introduce legislation that define, recognize and specify various GIs rights that will apply to diverse agricultural products. As seen previously, some developing countries already have GI-friendly legislative frameworks.⁶⁴ Beyond simply enacting a legal framework, countries will need to establish institutional and administrative mechanisms for the identification and registration of products eligible for GIs protection. There is also a need to build institutional infrastructure and expertise

⁶² See discussion above, Section 6.2.

⁶³ Felix Addor et al, “Geographical Indications: Important Issues for Industrialized and Developing Countries” (2003) 74 *The IPTS Report* at 29; Shepherd, *supra* note 58; Boisvert, *supra* note 55; Sophie Reviron, *Geographical Indications: Creation and Distribution of Economic Value in Developing Countries*, Working Paper No 2009/14 (2009); Kerr, note 48, Chapter 5 at 6.

⁶⁴ See discussion above Section 6.2.

required to establish, monitor and control production methods that contribute to the “quality, reputation or other characteristics” of the product.⁶⁵

Even after the introduction of legislative and administrative frameworks, producer groups and state agencies must contend with considerable costs in the process of registration, certification, and protection of GIs.⁶⁶ Active coordination and cooperation of national, regional and local administrative authorities with producer groups is required to adopt and to administer compliance mechanisms for agricultural production.⁶⁷ These efforts are needed once GIs protection is extended to the product, so that the GI does not become generic through unregulated production processes.

Depending on the requirements in the GIs legislation, producers may also be required to perform specific tasks in order to acquire GIs rights and to maintain them.⁶⁸ The organizational participation of producer groups in the form of associations or in informal

⁶⁵ See note 145, Chapter 5, at 101.

⁶⁶ See Giovannucci, et al, note 236, Chapter 2, at 13.

⁶⁷ See Dwijen Rangnekar, “The Limits of Geographical Indications” in Adil Najam, Mark Halle & Ricardo Meléndez-Ortiz, eds, *Trade and Environment A Resource Book* (Geneva: International Institute for Sustainable Development, 2007) at 126 [Rangnekar, “Limits”].

⁶⁸ These tasks may take the form of sampling and testing to determine if a product qualifies for GIs protection. Also, the inspection and monitoring required to maintain GIs rights may involve a number of trained people to undertake inspections and to penalise deviations from approved standards, while at the same time, ensuring that such standards are controlled and applied in a uniform manner. See Daphne Zografos, “Geographical Indications & Socio-Economic Development” Working Paper 3 (2008) at 55; Audrey Aubard, *The Use of Geographical Indications to Promote Economic Development: Issues, Opportunities, Policy Options* Paper commissioned by the ACP-EU TradeCom Facility in the context of the ACP regional workshops on Geographical Indications (2010) See also efforts required from producer groups in the registration of GIs in Penker M. & Klemen F., *Transaction Costs and Transaction Benefits Associated with the Process of PGI/PDO Registration in Austria* (Paper Prepared for the 116th EAAE-SYAL Seminar “Spatial Dynamics in Agri-food Systems: Implications for Sustainability and Consumer Welfare”, 2010, Vienna); Sarah Bowen & Ana Valenzuela Zapata, “Geographical Indications, Terroir, and Socioeconomic and Ecological Sustainability: The Case of Tequila” (2009) 24 *Journal of Rural Studies* 108-119.

co-operation networks is necessary to ensure that GIs and collective norms of production are adequately protected, regulated and supported.⁶⁹

Despite the aforementioned challenges, the practicality of GIs to protect TKBAPs should be evaluated on the basis of the capacity and potential of developing countries to contain the costs associated with the implementation of GIs. In this respect, the first concern relates to efforts required to set up legislative and institutional systems of registration and enforcement of GIs.⁷⁰ Indeed, the implementation of any IP system in developing countries causes disproportionate economic burdens in terms of administration, protection and enforcement.⁷¹ The implementation costs of IPRs included in the TRIPS Agreement were imposed on developing countries without serious consideration of the need to undertake financial or economic impact studies.⁷² Ironically, the same industrialized countries that lobbied for strong domestic enforcement of IPRs oppose the extension of GIs protection to products other than wines and spirits, on the ground that GIs engender costly administrative burdens for developing countries.⁷³ The

⁶⁹ See Boisvert, *supra* note 55.

⁷⁰ See for example, Dylan Barclay, *Advantages, Constraints, and Key Success Factors of Establishing Quality Signs Linked to the Origin and Traditions in Albania: The Case of Chestnuts from Tropojë* (Rome: FAO, 2010).

⁷¹ See Chapter 4 Section 4.3.1, for discussion of the treatment of concerns in the implementation of IP systems in developing countries.

⁷² D. Vaver, *Intellectual Property Rights: Critical Concepts in Law* (New York: Routledge, 2006) at 330.

⁷³ It is now well documented that the industrialized countries led by the US – who is now a strong opponent of the extension of GIs protection beyond wines and spirits – were the moving forces behind the TRIPS Agreement that set down rules on a wide range of intellectual property norms (patent, trademarks, copyright and industrial designs), mirroring norms that had been accepted in their domestic frameworks. GIs were included in the TRIPS Agreement as part of a compromise between the EU – which boasts a strong tradition of agricultural production – and the US. See Daniel Gervais, “Intellectual Property, Trade & Development: The State of Play” (2005) 74 *Fordham L. Rev.* 508–510; Gervais, “Drafting History”, *supra* note 214, Chapter 2.

cost of introducing GIs is not any more a burden than the cost of introducing other IP regimes that do not benefit most developing countries, at least, in respect to setting legislative and institutional systems of registration and protection.⁷⁴

In any event, the TRIPS Agreement requires developing countries to provide GIs protection to wines and spirits.⁷⁵ Developing countries are already subjected to considerable burdens of IP implementation, as most of them are required to comply with the requirements of the TRIPS Agreement.⁷⁶ Developing countries that already have GIs legislation will not be required to introduce new legal regimes if the scope of products for protection under Art. 23 of the TRIPS Agreement is extended from wines and spirits to other agricultural products.⁷⁷

The second economic consideration relevant to introducing GIs relates to the cost and burden for producer communities who seek to register GIs rights over TKBAPs. As previously noted, the successful implementation of GIs requires the presence of producers' organizations with a structure that allows collective participation in registering,

⁷⁴ Meir Perez Pugatch, *The Intellectual Property Debate: Perspectives from Law, Economics and Political Economy* (Cheltenham: Edward Elgar Publishing, 2006); Carlos Alberto Primo Braga, Carsten Fink & Claudia Paz Sepúlveda, *Intellectual Property Rights and Economic Development* (New York: World Bank Publications, 2000); Rangnekar, "Review", note 210, Chapter 1, at 28 (noting that "GI-extension does not entail any new obligation per se, but is only a demand for change in the product coverage of Article 23").

⁷⁵ Given that Art. 23 obliges members to give protection to wines and spirits, some developing countries have introduced legislative systems for GIs protection. See discussion in Chapter 5 Section 5.4; also see Section 6.2 above.

⁷⁶ See Chapter 4 Section 4.3.1 above, for discussion of the recognition and protection of IPRs in the World Trade Organization.

⁷⁷ See this line of argument in Aaron C. Lang, "On the Need to Expand Article 23 of the TRIPS Agreement" (2006) 16 *Duke J Comp & Int'l L* 487 at 500; also see Rangnekar, "Review", note 210, Chapter 1, at 28.

maintaining and protecting GIs rights.⁷⁸ The lack of strong organizational and technical skills among most agricultural producers in developing countries need not, however, be taken as a decisive factor with a potential to undermine successful adoption of GIs. In the use of GIs by small-scale agricultural producers, respective governing bodies are expected to play a limited role in overseeing production activities to ensure that collective methods of production are complied with. Farmers' cooperatives and self-governing local institutions that are abundant in most ILCs can easily play this role.⁷⁹

The emphasis to be placed on the organizational and structural governance of GIs partly differs depending on the approach that may be chosen to implement GIs protection. In a GIs system that is based on certification and collective marks, a collective entity, such as a certifying organization or producers' cooperative owns the rights.⁸⁰ As such, these entities bear the responsibility of registering, certifying and enforcing the rights to use the marks. Individual producers benefit from the protection of a certification mark either through membership in the organization that owns the collective mark, or through payment of fees to a certifying organization that owns the certification mark. Managing and administering GIs rights in this manner requires the creation of a corporate form of organization and governance. The introduction of bureaucratic structures of certifying organizations that are modelled on corporate governance is not advisable among small-

⁷⁸ See Section 6.4.1 above; also see INRA, Agriculture and biodiversity Benefiting from synergies (2008) online: < www.international.inra.fr/content/.../2335/.../ESCoABd-4pages-anglais.pdf> at 3.

⁷⁹ Kremers, *supra* note 59 at 131-132; Ching-Ping Tang & Shui-Yan Tang, "Negotiated Autonomy: Transforming Self-Governing Institutions for Local Common-Pool Resources in Two Tribal Villages in Taiwan" (2001) 29 Human Ecology 49-67.

⁸⁰ See Chapter 5 Section 5.5.1, for discussion of protecting GIs through certification marks and collective marks.

scale agricultural producers.⁸¹ As indicated in the discussion on the challenges and impacts of fair trade and eco-labelling initiatives, such a trend resulted in the disruption of economic relations within producer organizations and villages.⁸²

In the *sui generis* models, however, the institutional structure of GIs implementation need not be based on complex Organizational structures.⁸³ Under such forms of GIs protection, informal producers' cooperatives and collectivities may participate in the management of GIs rights, taking the responsibility away from corporate-driven groups.⁸⁴ The use of GIs in *sui generis* systems is not necessarily conditional upon membership in a particular collective entity that may have exclusive rights to use the GI; it is, rather, based upon adherence to the conditions of production in a geographical region.⁸⁵ In this respect, the feature of GIs as territory-based rights⁸⁶ increases the applicability of GIs to protect TKBAPs by alleviating the economic burden of implementing GIs in developing countries. This feature of GIs makes the latter's implementation in developing countries easier in two respects.

⁸¹ See Jorge Larson, *Relevance of Geographical Indications and Designations of Origin for the Sustainable Use of Genetic Resources* (Global Facilitation Unit for Underutilized Species Via dei Tre Denari, 472/a, 00057 Maccarese Rome, 2007) [Hereinafter, "Relevance"] at 57.

⁸² See Chapter 3 Section 3.7.

⁸³ See Kremers, *supra* note 59 at 98.

⁸⁴ See Wang Xiaobing & Irina Kireeva, "Protection of Geographical Indications in China: Conflicts, Causes and Solutions" (2007) 10 J World Intell Prop 79–96; Sudhir Kochhar, "Institutions and Capacity Building for the Evolution of Intellectual Property Rights Regime in India: IV– Identification and Disclosure of IP Products for their IPR Protection in Plants and Animals" (2008) 13 JIPR 336-343.

⁸⁵ Kremers, *supra* note 59 at 98.

⁸⁶ See the definitional feature of GIs as a territory-based IP rights in above, Section 6.2.

First, the lack of formally incorporated organizations, where membership is dependent on formal means of registration and payment of fees, creates an opportunity to empower and encourage collective social action among ILCs. The tasks of protecting and maintaining GIs rights may be accomplished through the strengthening of organizational and managerial capacities of farmers' cooperatives and farmers' marketing associations. More simplistic structural and functional apparatus in producers' cooperatives and farmers' associations easily fit with concepts of community membership that are often implicit (e.g., by birth) in collective entities among ILCs.⁸⁷ Existing social networks among groups who share common norms and values based on relationships, such as family, ethnic group, and origin from the same district, have proved effective channels to enforce production standards of GIs protection through mutual help and trust.⁸⁸

Secondly, the fact that rights in GIs in *sui generis* systems are not necessarily given to an exclusive use of a particular collective organization, as opposed to rights in certification marks and collective marks in the trademark-based system, makes it possible for relevant public agencies to take part in the implementation of GIs.⁸⁹ In terms of identifying potential TKBAPs to be covered in GIs protection – in registering the rights and ensuring standards of production are maintained – the *sui generis* form of GIs incorporates *ex parte* and *ex officio* protections.⁹⁰ The GIs system of the EU,

⁸⁷ Kremers, *supra* note 59 at 98.

⁸⁸ See for example, van de Kop, note 238, Chapter 5, at 35.

⁸⁹ See Chapter 5 Section 5.5, for discussion on the role of public agencies in the protection of GIs in the EU context.

⁹⁰ That is to say that protection provided at the request of an interested party, most of the times the producers themselves, and protection in which public authorities take the initiative in relation to a product without being asked to, respectively. See Georges Vassilakis, "The *Ex officio* Protection" (Minutes of the

Switzerland, Croatia and Japan allow *ex officio* protection of GIs.⁹¹ From developing countries, the GIs legislation of China, Algeria, Tunisia and Mauritius provide both *ex officio* and *ex parte* protections.⁹² Under the EU's GIs system, for example, States are expected to act and apply *ex officio* protection of GIs by establishing integrated control plans in sector specific areas.⁹³ The tasks that public authorities undertake, in these regards, are similar to those that producer organizations in countries with a well-developed system of GIs carry out, such as inspection and monitoring of production.⁹⁴

Round Table on Geographical Indications, Con contributo Mipaaf D.M. 2032 del 07/04/2008 in collaboration with OriGIn Brussels, 9 June 2009) online: Insight-Consulting <http://www.insightconsulting.eu/documents/uploads/news_en_minutes_of_the_round_table_on_the_ex_of_fico_protection.pdf>.

⁹¹ See Council Regulation (EC) 510/2006 of 20 March 2006 on the Protection of Geographical Indications and Designations of Origin for Agricultural Goods and Foodstuffs, [2006] O.J. L 93/12 at preamble, para. 16; Council Regulation (EC) No 509/2006 of 20 March 2006 on Agricultural Goods and Foodstuffs as Traditional Specialities Guaranteed, [2006] O.J. L 93/1, preamble, para. 9 & Art. 14; *Switzerland Federal Law on the Protection of Trademarks and Indications of Source*, entered into force on 1 April 1993; *Switzerland Federal Law on Agriculture*, entered into force on 1 January 1999; In Japan, ex-officio protection of GIs is allowed in relation to liquors see *Japan Standard for Indication in Relation to Geographical Indications* (Notification No. 4 of National Tax Agency), 28 December 1994.

⁹² See Chinese Gen. Admin. of Quality Supervision, Inspection and Quarantine, *Provisions for the Protection of Products of Geographical Indications*, entered into force 15 July 2005 online: <<http://www.wipo.int/clea/docs/new/pdf/en/cn/cn041en.pdf>>; *Algeria Executive Decree No. 76-121 on Procedures for Registration and Publication of Geographical Indications and the Establishment of the Relevant Fees*, entered into force on 16 July 1976; *Tunisia Law No. 2007-68 on Appellations of Origin, Geographical Indications and Indications of Source for Handicrafts*, entered into force on 27 December 2007; *Mauritius Geographical Indications Act No. 23*, entered into force 8 August 2002; also see O'Connor and Company, note 346, Chapter 4, at 28 ff.

⁹³ *Corrigendum to Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on Official Controls Performed to Ensure the Verification of Compliance With Feed and Food Law, Animal Health and Animal Welfare Rules* [2004] O.J. L/ 191, Arts. 54 and 55.

⁹⁴ In general, control of GIs products by responsible public authorities entails:

- Checking documents to identify the food and agricultural product, quality certificates, results of laboratory analyses and other documents that confirm the quality of the product;
- Checking the packaging, labeling, presentation of agricultural and food products and transport and storage conditions;
- Examining agricultural and food products;
- Sampling and laboratory analyzes;

The *ex officio* feature of GIs protection benefits small scale producers in developing countries because it allows competent authorities to take the lead, either directly in registering and maintaining GIs rights, or indirectly in building the capacity of producer groups. For example, the Chinese government established and maintained GIs systems in relation to different distinctive agricultural products.⁹⁵ It promotes the use of GIs by farmers free of charge, although farmers are not keen to participate in the scheme because of the controls such participation implies.⁹⁶ Similarly, the Indian government encourages active involvement of the state and its agencies in the registration of GIs rights.⁹⁷ Various branches of Indian state agencies participate in the system of GIs as applicants and, eventually, as proprietors of the rights.⁹⁸ In cooperation with the UK's Department for International Development and the United Nations Conference on Trade and Development (UNCTAD), the Indian government also carries out promotional activities to popularize the concept of GIs in India.⁹⁹

-
- Determining the category of agricultural and food products;
 - Controlling the way of production or correctness of processing.

See Georges Vassilakis, "The *Ex officio* Protection" (Minutes of the Round Table on Geographical Indications, Con contributo Mipaaf D.M. 2032 del 07/04/2008 in collaboration with OriGIn Brussels, 9 June 2009) online: Insight-Consulting <http://www.insightconsulting.eu/documents/uploads/news_en_minutes_of_the_round_table_on_the_ex_of_fico_protection.pdf>

⁹⁵ *Ibid.*

⁹⁶ *Ibid.*

⁹⁷ See Delphine Marie-Vivien, "The Role of the State in the Protection of Geographical Indications: From Disengagement in France/Europe to Significant Involvement in India" (2010) 13J World Intell Prop 121–147.

⁹⁸ See *ibid.*

⁹⁹ See Rangnekar, "Law and Economics," note 352, Chapter 4.

In addition, some reckon that producers would incur costs because of “changes” in production methods to meet standards of quality, reputation and other characteristics for GIs protection.¹⁰⁰ Producers may incur costs, in this case, through additional investment to guarantee reliable supplies of raw materials and to comply with quality control measures that form the basis of GIs protection.¹⁰¹ In assessing the costs and benefits of introducing GIs, it is also argued in some quarters that “the defense of ‘traditional’ production methods is unlikely to be as attractive to developing countries seeking to industrialize.”¹⁰² Indeed, some argue that resorting to “rural roots” of agricultural production may keep producers from the economic “benefits” of industrialized agriculture.¹⁰³

Concerns in relation to the cost implications of reverting to and maintaining traditional techniques of production are mostly based on a misguided assumption that only industrial methods of production can increase productivity and economic growth in agriculture.¹⁰⁴ Policy measures based on identical assumptions have, as explained previously, resulted in changes in traditional methods of production that eventually led to

¹⁰⁰ See INRA, *supra* note 78 at 3; Zografos, *supra* note 68 at 13.

¹⁰¹ See Zografos, *ibid.*

¹⁰² Shepherd, *supra* note 58 at 16.

¹⁰³ See *Ibid.* (wondering “would GI protection of Basmati rice imply that farmers would have to use animal traction for now and evermore?”).

¹⁰⁴ See generally Matin Qaim, “Benefits of Genetically Modified Crops for the Poor: Household Income, Nutrition, and Health” (2010) 27 *New Biotechnology* 552-557; Prabhu Pingali, “Agricultural Growth and Economic Development: A View Through the Globalization Lens” (2007) 37 *Agricultural Economics* 1–12; Christian Webersik & Clarice Wilson, “Achieving Environmental Sustainability and Growth in Africa: The Role of Science, Technology and Innovation” (2009) 17 *Sustainable Development* 400–413.

loss of autonomy by traditional farmers over their means of agricultural production.¹⁰⁵ Indeed, adherence to traditional methods of production results in “agricultural de-intensification” which, in turn, may result in cost savings from expenditures from the purchase of agricultural inputs such as chemical fertilizers and pesticides.¹⁰⁶

Given the potential of GIs in generating improved economic returns for TKBAPs,¹⁰⁷ any “decrease in yield” due to change of production methods may likely be offset through improved prices for TKBAPs that will be differentiated from generic products in commodity markets, via GIs.¹⁰⁸ In a hypothetical scenario where GIs protection is extended, for example, to *manoomin* rice variety, the only grain indigenous to North America, a condition of marketing the rice as *manoomin* would be requirements regarding specific standards of production and geographical origins of production.¹⁰⁹ Only rice varieties that are produced in the Great Lakes region, and which are based on the specific traditional techniques of production, can be sold in the market under the designation of *manoomin*, wild rice, or any other brand that suggests an association with the authentic rice grown by the Ojibwe people. In this case, there is no significant cost to traditional

¹⁰⁵ See above in Chapter 3 Section 3.3.3;also Section 6.7 below; also see Genetic Resources Action International, “Turning the Paddy Gold: Corn in Southeast Asia” (1999) online: GRAIN <<http://www.grain.org/seedling/index.cfm?id=98>>.

¹⁰⁶ Agricultural intensification refers to changes in farming in which additional energy is invested in agriculture in order to secure higher yields; in contrast, “agricultural de-intensification” is the intentional strategy to shift to less capital-intensive production systems for ecological reasons. See discussion of “intensification” of agricultural production in the current economic system in Section 3.3.1 &3.3.2.2; also, see INRA, supra note 78 at 3; Michael Ernest Smith, *The Aztecs* (Victoria: Wiley-Blackwell, 2003) at 65.

¹⁰⁷ See above, Section 6.3.

¹⁰⁸ See Chapter 3 Section 3.7, above, for discussion of challenges and impacts of differentiation schemes.

¹⁰⁹ See Susan Carol Hauser, *Wild Rice Cooking: History, Natural History, Harvesting, and Lore* (Guilford: Globe Pequot, 2004) at 43.

communities associated with the production of the rice in the region using traditional techniques of production.¹¹⁰

Perhaps, the requirements of traditional techniques of production and the restrictions of geographical regions of production may serve as strategies to deter the exploitation of commercially significant agricultural product by large-scale commercial producers. For example, different corporations currently produce *manoomin* rice in other geographical locations using high-tech agricultural production methods.¹¹¹ For these corporations, compliance with requirements of GIs protection would add additional costs, or may even make it difficult to participate in the production and marketing of the product as *manoomin* rice. Once a GIs regime is introduced, commercial growers of wild rice will be required to adhere to the bases of GIs protection, i.e., geographical restriction for production, and traditional methods of production. Commercial producers who do not comply with the requirements cannot continue marketing their products under the name *manoomin* or any other brand that suggests an association with *manoomin*.

The adoption of GIs discourages commercial producers from resorting to large-scale agricultural production methods, which are the only economically efficient methods of production for these producers. In addition, non-adherence to the requirements of GIs protection would force large-scale producers to re-brand their products. From the

¹¹⁰ See Center for Indigenous Environmental Resources, *Sharing the Story: Sustainable Initiatives in First Nations, Community Profiles and Project Information* (2005) online: CIER <<http://www.cier.ca/WorkArea/showcontent.aspx?id=602>>.

¹¹¹ For example, it is reported that by 1986, more than 95 percent of the wild rice harvested was paddy grown, the vast majority produced in California. See Native Harvest, *Manoomin and Patents* (2008) online: WELRP < <http://nativeharvest.com/node/249>>; see also Rachel Durkee Walker & Jill Doerfler, “Wild Rice: The Minnesota Legislature, a Distinctive Crop, GMOs, and Ojibwe Perspectives” (2009) 32 *Hamline L Rev* 499.

perspective of commercial large-scale producers, therefore, the adoption of GIs and the requirement for a change of production methods may result in significant cost burdens. The cost-based argument seems exaggerated, however, when it comes to the protection of GIs and the requirements of adherence to traditional methods of production by ILCs.

To conclude the discussion in this subsection, the preceding discussion on the mechanics for the establishment, protection and institutionalization of GIs shows that the introduction of GIs may not necessarily be a costly endeavour for developing countries. The cost implication of introducing GIs in developing countries might be limited because of the flexibility offered by the choice between *sui generis* and trademark-based systems of protection, the context for GIs protection in harmony with the practice and institutional settings of ILCs, and the involvement of the state in the process. Together, these factors help to mitigate the cost concerns usually presented in arguments against the adoption of GIs in developing countries. Developing countries may choose to weigh these considerations in assessing whether to introduce GIs systems in their jurisdictions.

The economic implication of GIs is not limited to costs associated with the introduction of legislative tools and the establishment of registration and protection systems. The feasibility of implementing GIs in developing countries is also seen in the light of requirements for running a functional system of GIs.¹¹² The following Section pays closer attention to efforts and costs that producers from developing countries may have to overcome in the operational use of GIs. The discussion assesses the extent to

¹¹² See above discussion in Section 5.4.

which these concerns may influence decisions as to whether to use GIs to protect TKBAPs in developing countries.

6.4.2 OPERATIONAL USE OF GEOGRAPHICAL INDICATIONS

The operational use of GIs involves activities to capture the market value of products, and to maintain and expand the market share of the products in foreign markets. In this regard, the cost of GIs implementation to producers covers activities that go beyond the task of actually filing for registration and complying with protection requirements. The operational use of GIs requires the accomplishment of tasks that are necessary to enhance export markets and to generate revenues from products that the GI law protects. In the following subsections, I evaluate the conditions under which GIs may be used to protect TKBAPs through tasks in the operational use of GIs, namely, tasks engaged by marketing for TKBAPs, and those required to enforce and defend GIs rights in foreign jurisdictions.¹¹³

6.4.2.1 Marketing Activities

In a functional system of GIs, a marketing strategy is required to “nurture, brand, and popularize susceptible local products to ensure their global reach and acceptability.”¹¹⁴ In this way, effective implementation of GIs in developing countries requires activities to convince consumers that products from a geographical area covered by the GIs have

¹¹³ See note 145, Chapter 5, at 101.

¹¹⁴ Chidi Oguamanam, “Patents and Traditional Medicine: Digital Capture, Creative Legal Interventions, and the Dialectics of Knowledge Transformation” (2008) 15 *Ind J Global Legal Stud* 489 at 501 [Oguamanam, “Digital Capture”] at 525.

attributes that are more valuable than competing products from other areas.¹¹⁵ In this regard, two views can be considered in analyzing the implication of marketing efforts in the use of GIs to protect TKBAPs.

One view begins with the premise that the overall function of GIs depends on the creation of improved consumer perception as to the product they protect through marketing efforts attached to the GI sign. As such, the adoption of GIs is effective only if there already is “an actual or potential market, or at least ... competition” for the product in foreign countries.¹¹⁶ Thus, the adoption of GIs in relation to new products would involve major long-term advertisement and promotion that, in the reality of most developing countries, is considered “to be expensive and ... not sustainable,” and thus, unjustified.¹¹⁷ This view has its basis in the theory of “information asymmetry” that proponents of trade-mark-based system of GIs consider as the sole justification for the protection of GIs.¹¹⁸

A view that is more consistent with the conceptualization of GIs in this thesis¹¹⁹ holds that the recognition and protection of GIs is neither conditional upon prior existence of a

¹¹⁵ Kerr, note 48, Chapter 5 at 8.

¹¹⁶ See *ibid.* (noting that the recognition and the protection of GIs in relation to new products, whether TKBAPs or other agricultural products, involves “expenditures to build a brand not tied to a geographic area”); also see Boisvert, *supra* note 55.

¹¹⁷ Kerr, note 48, Chapter 5 at 11

¹¹⁸ See discussion above Chapter 5 Sections 5.5.3 and 5.10. As argued in those Sections, the recognition of GIs rights exists independent of the presence of reputation for the product in the market. Given the broad justification of GIs laid down in the previous Chapters, the rationale of “information asymmetry” is not discussed in this thesis.

¹¹⁹ GIs are conceptualized as a broad category of rights, fundamentally distinguished from trademarks, whose protection exists independent of the justification for the protection of trademark rights. See Chapter 5

market share, nor on assessment of the ability of rights holders to create consumer demand through marketing efforts.¹²⁰ Given the broad justification of GIs protection on multiple grounds in the area of biodiversity, food security, cultural and socio-economic policy, the rights of ILCs may be recognized through GIs protection for their products “independently of their otherwise inherent substantive value on the market.”¹²¹ In this context, economic considerations can be one of the factors that the ILCs or their representatives may need to take into account in assessing the feasibility of using GIs to protect TKBAPs.¹²² If GIs protection is extended based on substantive considerations, advertising activities to promote the favourable features of GIs products may be required to improve their market share and profitability.

Advertisement and brand management initiatives are instrumental for the success of GIs protection, so that consumers may know a product’s quality, reputation or characteristic, and thus, the GI-product would acquire broad recognition in the market.¹²³

Section 5.10, above, for discussion of the justifications for such conceptualization; also, see Section 5.5.3, for the different conceptualization of GIs between the US and the EU system.

¹²⁰ See Pradyot R. Jena & Ulrike Grote, “Changing Institutions to Protect Regional Heritage: A Case for Geographical Indications in the Indian Agrifood Sector” (2010) 28 *Development Policy Review* 217-236; Felice Adinolfi, Marcello De Rosa & Ferruccio Trabalzi, “Dedicated and Generic Marketing Strategies: The Disconnection Between Geographical Indications and Consumer Behavior in Italy” (2011) 113 *British Food Journal* 419-435.

¹²¹ See Rangnekar, “Demanding,” note 257, Chapter 2.

¹²² See discussion of justifications for GIs based on “information asymmetry” in above Chapter 5., Section 5.5.3; see cf. Raustiala & Munzer, note 18, Chapter 1; also see Aylwin et al, note 7, Chapter 1, at 3 (deplores the case against GIs is “too often made in purely economic and philosophical terms”); Ramona Teuber, Sven Anders & Corinne Langinier, *The Economics of Geographical Indications: Welfare Implications*, Structure and Performance of Agriculture and agri-Products Industry Network Working paper #2011-6 (2011).

¹²³ See Boisvert, *supra* note 55; see discussion in Note 145, Chapter 5; Stéphan Marette, “Can Foreign Producers Benefit from Geographical Indications under the New European Regulation?” (2009)10 *Estey Centre Journal of International Law and Trade Policy* at 69.

However, concerns over the cost and efforts that must go into marketing activities must also account for the actual conditions and contexts in which most agricultural producers from developing countries access global markets. A significant variety of agricultural products from developing countries that are potential candidates for GIs protection already have broad recognition in the market for their reputation based either on quality, reputation or other characteristics.¹²⁴ As done in the next two paragraphs, this point can better be illustrated by looking at the statistics that speak to the high reputation of these products in the international market.

A case study on *Boseong* green tea from South Korea, to which GIs protection was extended in 2005, reveals that the market price of the tea increased by 90 percent without significant marketing costs at the early stage of GIs introduction because the product was already wellknown and associated with South Korea.¹²⁵ A typical TKBAP, the *Chili de Mamou* from the Republic of Guinea is popular among “strong external network of faithful consumers” worldwide. This is due mainly to wide diffusion through travellers and Guinean migrants abroad who customarily give away *Chili de Mamou* as a gift.¹²⁶ Importers recognize the “Madagascar-Bourbon” vanilla as the best in the world and, usually, this vanilla receives a premium over other varieties.¹²⁷ As well, the Ugandan

¹²⁴ See Massimo Vittori, “The International Debate on Geographical Indications (GIs): The Point of View of the Global Coalition of GI Producers—oriGIn” (2010) J World Intell Prop at 306 [Hereinafter, “International Debate”].

¹²⁵ Jeongwook Suh & Alan MacPherson “The Impact of Geographical Indication on the Revitalisation of A Regional Economy: A Case Study of ‘Boseong’ Green Tea” (2007) 39 Area 518 at 523.

¹²⁶ FAO and Siner-GI, note 236, Chapter 2, at 43.

¹²⁷ See Richard J. Brownell Jr., “Fair Trade – The Future of Vanilla?” in D. Havkin-Frenkel & F. C. Belanger, eds, *Handbook of Vanilla Science and Technology* (Oxford: Wiley-Blackwell, 2010)

Vanilla, recognized for its rich, complex flavour with a spicy overtone, is currently considered among the top three or four varieties.¹²⁸ Considered the world's finest quality tea,¹²⁹ India's indigenous tea varieties, such as Darjeeling Tea and Assam Tea enjoy a significant market share that is unparalleled by tea produced from any other region, even before GIs protection was extended to the major brands.¹³⁰ South Africa's indigenous tea product, Rooibos, has a reputation as a unique product in domestic markets and is exported to 46 countries at premium price, and demand for the product is growing at twelve per cent per year.¹³¹ Gari Missè, a premium quality staple made only in the Missè district of Savalou city, Benin, enjoys a strong reputation in regional markets in Nigeria, Togo and Ghana.¹³²

Similar statistics indicate strong brand recognition and broad reputation attached to words and symbols that represent a wide variety of specialty agricultural products from developing countries. These include Argan Oil of Morocco; Phu Quoc Fish Sauce from Vietnam; Cashmere of Mongolia; Habanos Cigars from Cuba; Tequila from Mexico;

¹²⁸ See note 216, Chapter 3; IDEA project, *Vanilla*, ADC Commercialisation Bulletin #1 (2000); Aubard, *supra* note 68.

¹²⁹ India's Darjeeling tea and Assam tea are considered in the tea industry as the finest of all kinds of black tea. See Jane Pettigrew & Bruce Richardson, *The New Tea Companion: A Guide to Teas Throughout the World* (London: Benjamin Press, 2005).

¹³⁰ India has emerged as the world leader in tea production, consumption and export, mainly because it accounts more or less for 31 per cent of global production. See Sarbajit Pau, "An Overview of the Indian Tea Industry" online: ICWAI <<http://www.icwai.org/icwai/knowledgebank/oh02.pdf>>

¹³¹ See Willie Nel, "Rooibos as A Potential GIs" online: The Technical Centre for Agricultural and Rural Cooperation <www.cta.int/en/content/download/4074/.../GI-Rooibos-Willie_per_cent20Nel.pdf>; Estelle Biénabe et al, *Sharing views on Quality Products Linked to Geographical Origin; How they Can Contribute to Rural Development? Rooibos* (Joint Siner-GI FAO Meeting, Roma, 31 Jan. 2008).

¹³² Gerz A. & S. Fournie, "Gari Missè in Benin: A Local, Premium-quality Staple" in van de Kop, note 238, Chapter 5; also see Larson, "Relevance" *supra* note 81; FAO, *The Global Cassava Development Strategy and Implementation Plan* (Proceedings of the Validation Forum on the Global Cassava Development Strategy Rome, 26-28 April 200).

Mantecoso cheese from Peru ; Basmati rice from India and Pakistan; Pisco from Peru and Chile; speciality coffee varieties from Columbia, Ethiopia, Rwanda, Kenya and Uganda; gourmet cocoa products from Ghana (#2 producer in the world).¹³³

At least in some category of distinctive agricultural products where broad recognition and strong reputation already exist in the market, the argument against the use of GIs cannot be sustained on only cost concerns. Although the number of protected GIs is currently limited in developing countries, the notion that only a few selected agricultural products from the EU enjoy broad market reputation, and thus, can benefit from expanded GIs protection in developing countries is not empirically supported.¹³⁴ Evidence suggests that these countries have a huge and, to some extent, unexplored potentials for successful implementation of GIs in relation to TKBAPs that already have broad reputations. As such, the need for significant expenses in marketing and brand management may not be overemphasized.¹³⁵

¹³³ van de Kop, note 238, Chapter 5; Nadja El Benni & Sophie Reviron, *Geographical Indications : Review of Seven Case-Studies World Wide*, Working Paper No 2009/15 (2009); Dominique Barjolle, “Impacts of Geographical Indications: Review of Methods and Empirical Evidences” (Paper Presented at International Association of Agricultural Economists Conference, Beijing, China, August 16-22, 2009); Adam M. Komarek, “Crop Diversification Decisions: The Case of Vanilla in Uganda” (2010) 49 *Quarterly Journal of International Agriculture* 227-242; Larson, ”Relevance” *supra* note 81; Vittori, “International Debate” *supra* note 124; Vijesh V. Krishna, “Assessing the Potential of Labelling Schemes for *In Situ* Landrace Conservation: An Example from India” (2010) 15 *Environment and Development Economics* 127–151; Surip Mawardi, “Establishment of Geographical Indication Protection System in Indonesia, Case in Coffee” (Worldwide Symposium on Geographical Indications Jointly Organized by the WIPO and the Patent Office of the Republic of Bulgaria Sofia, June 10 to 12, 2009); FAO, *Major Food and Agricultural Commodities and Producers, Economic and Social Development Division*, online: < <http://www.fao.org/es/ess/top/commodity.html?lang=en&item=661&year=2005>>; Aubard, *supra* note 68 27-33.

¹³⁴ See Section 6.3, above, for discussion of cost concerns in the use of GIs to protect TKBAPs. Also see Boisvert, *supra* note 55.

¹³⁵ See Vittori, “International Debate” *supra* note 124.

Another economic consideration regarding the applicability of GIs to protect TKBAPs arises from cost that may be borne to add quality or characteristics to the product in response to changing consumer preferences.¹³⁶ This outlook is premised on the view that markets are volatile because they “change according the latest tastes” that consumers develop in a product.¹³⁷ Commentators doubt the viability of extending GIs protection to TKBAPs on the ground that besides “tradition and authenticity,” a product that the GI law protects must embody quality attributes that are “constantly subject to change and adaptation” in response to evolving consumer and market demands.¹³⁸ Because farmers and producers in developing countries are more familiar with subsistence production than with commercial production, it is argued that small-scale producers in developing countries may find it difficult and too expensive to engage in activities that respond to the latest consumer interests in the course of the use of GIs.¹³⁹

It is true that GIs provide competitive advantage to producers who strive to create a brand that attracts consumers’ attention and a quality that responds to their preferences.¹⁴⁰ However, the current global market environment is already receptive to TKBAPs because of “a voracious appetitive for exoticism and romanticism around cultural products from

¹³⁶ Bryan Lewin, Daniele Giovannucci & Panos Varangis, *Coffee Markets New Paradigms in Global Supply and Demand* (Washington, DC: The International Bank for Reconstruction and Development, 2004) at 13.

¹³⁷ Downes, note 320, Chapter 4, at 260.

¹³⁸ Michael Winter, “Embeddedness, the New Food Economy And Defensive Localism” (2003) 19 *Journal of Rural Studies* 23

¹³⁹ Larson, “Relevance” *supra* note 81 at 57.

¹⁴⁰ Stéphan Marette, “Can Foreign Producers Benefit from Geographical Indications under the New European Regulation?” (2009)10 *Estey Centre Journal of International Law and Trade Policy* at 69.

‘pristine’ communities.’¹⁴¹ Due to increasing consumer attraction, traditional agricultural products from developing countries have gradually expanded from the local to the global market. These products’ transformation from local market to national, regional and global markets prompts the need for their protection through GIs.¹⁴² The fact that small-scale producers of most TKBAPs in developing countries use traditional and region-specific methods of production is an asset that draws consumer interest for these products, which constitute niche markets.¹⁴³

The study of the economic impacts of fair trade initiatives and environmental labelling schemes has shown that marketing strategies that are based on the local, territory-based and TK-based attributes of products have brought significant marketing opportunity in the global market for traditional agri-food products.¹⁴⁴ The increasing interest towards traditional agricultural products – a feature of today’s post-modern economy – largely dispels the concern that the absence of skill in production management that responds to changing consumer preferences in the market may limit the effectiveness of GIs protection.¹⁴⁵ Consumer appetite for agricultural products from tradition-based agricultural producers would seem to rise in the future, given the lack of consumer confidence and trust as to the health and safety impacts of most products of agro-

¹⁴¹ Oguamanam, “Digital Capture”, *supra* note 114 at 525.

¹⁴² See *supra* note 48 at 244.

¹⁴³ See Shrabashi Ray & Gautam Anand, “Geographical Indications: Contextualizing the Case of ‘Darjeeling Tea’” online: <http://www.trademarkdhaba.com/resource/GI_darjeeling_tea_case.pdf>.

¹⁴⁴ See Chapter 3 Section 3.7 above.

¹⁴⁵ See discussion above Chapter 3 Section 3.5 & Chapter 4 Section 4.7

biotechnology in the market.¹⁴⁶ Consumers' interest in TKBAPs continues to rise due to concerns associated with conventional farming systems, such as environmental effects, risk of chemical residues, and transfer of antibiotic resistance from animal to human through animal-derived foods.¹⁴⁷

The association of TKBAPs with local territory, culture and tradition constitutes, therefore, an important feature of marketing in GIs.¹⁴⁸ As such, unlike the strategy of corporations that devise market-responsive methods of adding value to agricultural products in a manner that responds to increased specificity in consumer demand, the commercial success of GIs protection would largely depend on defending and using the same traditional techniques that are the basis of “reputation, quality or other characteristics” of a specific product.¹⁴⁹

Two important points need clarification regarding the operational aspects of protecting TKBAPs through GIs. First, given that there may be an increase in demand for a traditional product once the product is covered under GIs protection, some form of collective approach is required to deal with quality control issues and common marketing strategies.¹⁵⁰ Perhaps GIs' contribution to ecological diversity,¹⁵¹ food security,¹⁵² and

¹⁴⁶ Note 157, Chapter 3.

¹⁴⁷ Cletos Mapiye, “Potential for Value-Addition of Nguni Cattle Products in the Communal Areas of South Africa: A Review” (2007) 2 *African Journal of Agricultural Research* 488 at 490.

¹⁴⁸ See F. Addor & A. Grazioli, “Geographical Indications beyond Wines and Spirits—A Roadmap for a Better Protection for Geographical Indications in the WTO TRIPS Agreement” (2002) 5 *J World Intellectual Property* 865 at 874; see also Gavin Fridell, *Fair Trade Coffee: The Prospects and Pitfalls of Market-Driven Social Justice* (Toronto: University of Toronto Press, 2007).

¹⁴⁹ See discussion in Chapter 3 Section 3.4.2.

¹⁵⁰ In its technical sense, “corporate vision” refers to principles that are concerned with a desired future state of a business. See Olivier Furrer, *Corporate Level Strategy: Theory and Applications* (New York: Taylor &

cultural identity¹⁵³ is largely a function of their use to preserve existing traditions and cultures as a condition of agricultural production. Beyond simple adherence to established standards of production, there should be mechanisms to guarantee consumers that the “reputation”, “quality” and “other characteristics” of the product, based on the cultures and traditions in a locality, are maintained in the course of commerce. These mechanisms are inherent in the system of agricultural production among most ILCs to ensure continuity of traditional and cultural practices of agriculture in a trans-generational manner. Such mechanisms can be found in traditional, community-based and multi-functional norms that control production and marketing practices through non-codified protocols which are mostly based on cooperation and mutual trust.¹⁵⁴

A FAO study reveals, for example, the existence of social control and sanctions among many small, family-owned units in the production of *gari misse* in Benin.¹⁵⁵ A group of Savalou women who the producers know and trust, monitor and control the processing and trading stages of the product.¹⁵⁶ In order to reduce commercial and

Francis, 2010). In the context of the discussion in this thesis, the phrase is used in reference to the need for producers of TKBAPs to adopt a flexible approach to product development and marketing, with a greater degree of foresight and innovation compared to industrialized commodity sectors. See Boisvert, *supra* note 55 at 29.

¹⁵¹ See below Section 6.6.

¹⁵² See below Section 6.7.

¹⁵³ See below Section 6.9.

¹⁵⁴ See Ulf Andersson et al, “Opportunities, Relational Embeddedness and Network Structure” in Pervez N. Ghauri et al, *Managing Opportunity Development in Business Networks* (Hampshire: Palgrave, 2005); also see *supra* note 132.

¹⁵⁵ See FAO and Siner-GI, note 236, Chapter 2, at 34.

¹⁵⁶ *Ibid.*

technical risks of production, the women impose rules and practices that involve various forms of collaboration.¹⁵⁷ These include collective production activities at different stages: Jointly buying the raw material; having rotating work groups to do the processing; and selling the product jointly.¹⁵⁸ Failure to comply with the rules and practices entails a risk of expulsion from membership in the group.¹⁵⁹

The second point in the operational use of GIs concerns the formulation of a successful strategy to promote and advertise TKBAPs. As previously noted, once GIs protection is extended to TKBAPs, the promotion and advertisement of products may be necessary to widen and control the market share of a GI product.¹⁶⁰ A strategic choice of GIs protection instruments may, in this respect, alleviate the cost burden of producer groups.

The recognition of GIs in their *sui generis* forms on a proprietary basis¹⁶¹ allows producers to exercise a bundle of ownership rights.¹⁶² The practical implication of this recognition is that producers will have the power to “limit the potential use of the protected material [the GI] by third parties, either by giving the right to prevent their use

¹⁵⁷ See FAO and SENER-GI, note 236, Chapter 2, at 35.

¹⁵⁸ See *ibid.*

¹⁵⁹ *Ibid.*

¹⁶⁰ See discussion above, Section 6.4.2.1.

¹⁶¹ See discussion above Chapter, Section 5.10.

¹⁶² For discussion on the distinction between the recognition of GIs in *sui generis* forms and protection under the current trademark system, as well as the accompanying distinction between the significance of GIs as proprietary rights and their protection as a means of communicating information, see Chapter 5 Section 5.4.1, Section 5.5.3 and 5.10; also Tim Josling, “Geographical Indications: Protection for Producers or Consumer Information?” (Paper presented to the Annual Conference of the Australian Agricultural and Resource Economics Society, Coffs Harbour, 7-11 February 2005).

altogether (exclusive rights), or by setting conditions for their permitted use (e.g., subjecting it to equitable compensation or a right of acknowledgement).”¹⁶³ The proprietary nature of rights in *sui generis* forms of GIs would grant producers a better leverage to deal with intermediaries, such as wholesalers, importers, distributors, manufacturers, and retailers of their products. Producers could stipulate conditions under which their products are supplied to the market.¹⁶⁴ These conditions may cover, *inter alia*, controls over the pricing of the product, and requirements for the product’s distribution.

In relation to price control, producers could demand the determination of prices for TKBAPs based on mutually agreed terms between them and retail suppliers, instead of through the international price determination system.¹⁶⁵ GIs protection also allows producers to maintain a considerable degree of control over the processing and distribution of their products.¹⁶⁶ In this sense, GIs may serve as a means of “de-commodification,” enabling agricultural producers to retain the value of their products by reducing substitutability between a particular product that the GI law protects and other

¹⁶³ *Supra* note 35 at 7; see also discussion in Chapter 4, Section 4.7.

¹⁶⁴ See S. Marette, R. Clemens & B. A. Babcock, *The Recent International and Regulatory Decisions about Geographical Indications*, Matric Working Paper 07-MWP (2007).

¹⁶⁵ As explained in Chapter 3 and Chapter 4, agricultural producers from developing countries acquire lower prices for their products in commodity chains because it is never the producers who determine the price. Rather, the price is determined through an international price determination system under the same category as a generic commodity. As a result, for example, a coffee from Ethiopia is sold at the same price as coffee from Japan, which is produced through large scale agricultural production. See discussion in Chapter 3 Section 3.4 and Section 3.5; Chapter 4 Section 4.9; see also Sophie Reviron, *Geographical Indications: Creation and Distribution of Economic Value in Developing Countries Institute for Environmental Decisions*, IED Working Paper No 2009/14 (2009); Afua West, *Does Africa Need Trademarks, Not Fairtrade?* (Mar 06, 2011) online: The Idea Scout <<http://theideascout.com/2011/03/06/mswestafrica-trademarks/>>; Gavin Fridell, “Fair Trade and Neo-liberalism: Assessing Emerging Perspectives” (2006) 33 *Latin Am. Persp.* 20.

¹⁶⁶ See G. E. Evans, “The Comparative Advantages of Geographical Indications and Community Trade Marks for the Marketing of Agricultural Products” (2010) 29 *Yearbook of European Law* 224 at 247-250.

products.¹⁶⁷ Producers may, as a condition of trading over their products, prohibit downstream operators in the market, such as distributors, manufacturers and retailers from resorting to cheap supplies, using cheaper ingredients that do not originate from the area signified by the indication.¹⁶⁸ This way, small-scale producers may create trade arrangements with foreign importers, retailers and processors to collectively increase the promotion and marketing of their products. The following examples illustrate this point in some detail.

The island of Phu Quoc in Vietnam, reputed for the quality of its fish sauce, is home to traditional producers of the famous Phu Quoc fish sauce.¹⁶⁹ The product, with an annual production of 10 million litres, is exported to international markets, mainly to the EU and Japan.¹⁷⁰ After the introduction of GIs systems in 2001, the Phu Quoc Fish Sauce Producers Association established partnership with Unilever, a multinational food processing company, through a ten-year contract that granted Unilever a license to use the

¹⁶⁷ See discussion of the concept of “commodification” and the role of “de-commodification” in global markets above, Chapter 3, Section 3.6. Significant disparity exists between the price at which agricultural products are made available in retail markets, and the price at which these products are bought from producers in developing countries. For example, a study of Ethiopian coffee indicates that coffee farmers often collect only about ten percent of the profits from their coffee; the rest goes to industry players in the coffee market who control the retail price – international importers, distributors, and roasters like Starbucks. See Osorio, note 223, Chapter 5 at 1; Ramona Teuber, “Geographical Indications of Origin as a Tool of Product Differentiation: The Case of Coffee” (2010) 22 *Journal of International Food & Agribusiness Marketing* 277 – 298.

¹⁶⁸ See comments of Francis Fay, Directorate General for Agriculture and Rural Development of European Commission in Wei Tong, “China-EU Start Cooperation on GI Products Protection and Administration” (23 march 2011) online: CRI English < <http://www.crinordic.com/7146/2011/03/29/2702s629209.htm>>; see also Blakeney, *Food Security*, *supra* note 143, Chapter 1 at 186. Blakeney notes that GIs “permit the aggregation of market power by small farmers to enable collective action by producer collectives in relation to the promotion and marketing of their products and in dealing with intermediaries.”

¹⁶⁹ See Lopetcharat K. et al, “Fish Sauce Products and Manufacturing: A Review” (2001) 17 *Food Reviews International* 65 at 66.

¹⁷⁰ See *Ibid.*

Phu Quoc brand.¹⁷¹ This arrangement provided producers with the financial means to upgrade their production facilities, in adherence to the product's culinary tradition. At the same time, the producers are able to expand their reach into global markets through Unilever's marketing network.¹⁷²

Ethiopia's trademarks and licensing initiative over its coffee varieties also demonstrates how traditional agricultural producers may expand the market share of their products through negotiation and collaboration with suppliers and retailers of the products.¹⁷³ Upon registration of trade-mark-based GIs rights over the country's indigenous coffee varieties, the Ethiopian Intellectual Property Organization (EIPO) collaborated with coffee importing, roasting and distributing companies for the marketing and supply of Ethiopian coffee.¹⁷⁴ As of May 2009, the EIPO concluded ninety-six licence agreements with companies in thirty-six countries, mainly in North America,

¹⁷¹ See Wagle, *supra* note 358, Chapter 4; see detailed discussion of GIs in Vietnam in Nguyen Thi Tuyet, "A Study of Legal Protection of Geographical Indications in the European Community and in Vietnam" (University of Lund, Master's Thesis, 2007).

¹⁷² According to the agreement with the Fish Sauce Producers Association, Unilever invested US\$ 1 million to upgrade production facilities. See Dwijen Rangnekar, "Indications of Geographical Origin in Asia: Legal and Policy Issues to Resolve" in Ricardo Meléndez-Ortiz & Pedro Roffe, *Intellectual Property and Sustainable Development: Development Agendas in A Changing World* (Cheltenham: Edward Elgar Publishing, 2009); also see Wagle, *ibid*, Central Institute for Economic Management, Exploring the Links Between International Businesses and Socio-Economic Development of Vietnam: A Case Study of Unilever Vietnam (Ha Noi: Ministry of Planning and Investment, 2009).

¹⁷³ See discussion of background and motives of the Ethiopian coffee trademark initiative, above, Chapter 5, Section 5.9.

¹⁷⁴ The EIPO licensed the coffee names to a number of distributors with a purpose to, in the words of the director, "enlist the big companies to do what we don't have the skills or financial means for – that is, building recognition of our brands in international markets and so increasing long term demand for them." See WIPO, "Making the Origin Count: Two Coffees" (2007) 5 WIPO Magazine at 2. See Mary O'Kickit, "Lessons Learned from Ethiopia's Trademarking and Licensing Initiative: Is the European Union's Position on Geographical Indications Really Beneficial for Developing Nations?" (2009) 6 Loy U Chi Int'l L Rev 311.

Europe, and Asia, for the promotion and development of the coffee brands: *Sidamo*, *Harar*, and *Yirga Cheffe*.¹⁷⁵

The experiences of Ethiopian coffee and Vietnam's Phu Quoc fish sauce are instructive in that they demonstrate the potentials for the creation of mutually beneficial business relations that facilitate the participation of producer groups in promoting products that the GIs law protects.¹⁷⁶ As already pointed out, some products from developing countries already have significant market share in foreign markets.¹⁷⁷ In such circumstances, producer groups and domestic exporters in the respective developing countries may create mechanisms to maintain and expand the existing market share of the products.

Finally, economic concerns based on the cost of marketing activities in GIs may be minimal because, as Broude notes, "the general marketing costs for 'brand' maintenance are lower under conditions of exclusivity."¹⁷⁸ In some cases, producer groups may engage in long-term investment activities to widen and to control the market share of their products.¹⁷⁹ Costs incurred in the course of promotion and marketing may, in this case, be

¹⁷⁵ See Getachew Mengistie, "The Ethiopian Fine Coffee Designations Trade Marking & Licensing Initiative Experience" (Presented at WIPO Conference on Building Partnerships for Mobilizing Resources for Development, Geneva, November 5 and 6, 2009) WIPO/RES/DEV/GE/09/WWW[130155] at slide 6.

¹⁷⁶ See Giovannucci, et al, note 236, Chapter 2, at xix (noting that "Many of the GI market successes are the result of mutually beneficial business relations via which consistent market positioning and effective commercialization have led to a long-term market presence").

¹⁷⁷ See discussion above, Section 6.3.

¹⁷⁸ Broude, note 138, Chapter 1.

¹⁷⁹ These resources may come in the form of access to finance from public agencies, or secured financing from private financial institutions, or as individual contributions. See Marguerite Paus & Sophie Reviron, "Crystallisation of Collective Action in the Emergence of A Geographical Indication System" (International EAAE-SYAL Seminar – Spatial Dynamics in Agri-food Systems, Parma, 27-30 October 2010); Kasey

recouped through improved price for the product.¹⁸⁰ Instructive examples in this regard are found in the cases of *Limón de Pica* from the Chilean town of Pica, and Kintamani Bali coffee from the Bali Island of Indonesia.

The Chilean town, Pica, is famous for its aromatic and unusually acidic lemons. These are prized products for making spirits such as Pisco Sour.¹⁸¹ Pending application for registration of GIs rights over “Limón de Pica,” the lemon producer cooperatives devised new marketing strategies to access high-value niche markets.¹⁸² Successful marketing efforts through their own marketing units allowed producers to gain improved prices for their products – fifty per cent more than it was when mainly intermediaries marketed the product.¹⁸³ In 2010, the Chilean National Institute of Industrial Property granted GIs registration for the lemon fruit, the first Chilean product recognized as a protected GI product.¹⁸⁴

In Indonesia, the Community of Geographical Indication Protection, which represents local coffee farmers, acquired financial support and capacity building from government

Moctezuma, *Promoting Geographical Indication Extension as a Tool to Sustain Tradition: Examining the Comté Case* (M.A Thesis, Monterey Institute of International Studies 2005); Stephanie Frye, “European Union Competitor – Promotion of EU Agricultural Products Outside the EU” (27 November 2004) USDA Foreign Agricultural Service GAIN Report <http://fas.usda.gov/fassearch_results_h.asp?searchstringcomte+cheese>

¹⁸⁰ See Blakeney, “Food Security”, note 134, Chapter 1 at 186.

¹⁸¹ See FAO’s case Study on Limon De Pica in Spanish, FAO, *Consultoría Realizada Para la FAO y el IICA En El Marco Del Studio Conjunto Sobre Los Productos De Calidad Vinculada Al Origen* (Rome: FAO, 2007); also see FAO and Siner-GI, note 236, Chapter 2, at 119.

¹⁸² See *ibid* at 119.

¹⁸³ See *ibid*.

¹⁸⁴ See Alessandri & Compania, “Chile Grants the First Registration Recognizing A Geographical Indication” (24 April 2010) online: Latin Counsel <<http://www.latincounsel.com/eng/noticiaampliada.php?nid=7564>>.

and development institutions to undertake successful marketing and promotion of Kintamani Bali Arabica coffee.¹⁸⁵ Because of collective action from producer groups and various stakeholders after the introduction of GIs system in 2001, the price of coffee increased from \$0.8 per kilogram at the initiation of GIs protection for the product in 2002, to \$3.3 per kilogram in 2008.¹⁸⁶

To conclude, cost concerns in the operational use of GIs are significant. However, producer groups and their governments can alleviate these concerns through strategic measures on a case-by-case basis. The discussion in this Section has identified measures that, if adopted along with legislative frameworks for GIs operation, may preserve economic benefits to ILCs. These measures may include long-term investment in regard to marketing strategies based on the association of TKBAPs with local territory, culture and tradition. In addition, the inclusion of customary norms in GIs regulations on agricultural production may help to maintain “quality, reputation or other characteristics” of the products. The degree of control that comes with the adoption of GIs protection may also contribute to mitigate the costs of making GIs operational in developing countries.

In some agricultural products that already have significant market share in international trade, producer groups may lack the legal means to control and protect their brands that may be affected by counterfeit products from other areas. This brings

¹⁸⁵ See Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific, *Quality Linked to Geographical Origin and Geographical Indications: Lessons Learned From Six Case Studies in Asia* (Rome: FAO, 2010).

¹⁸⁶ See Surip Mawardi, “Advantages, Constraints and Key Success Factors in Establishing Origin- and Tradition-Linked Quality Signs: The Case of Kintamani Bali Arabica Coffee Geographical Indication, Indonesia” Case study on Quality Products Linked to Geographical Origin in Asia Carried out for FAO, Indonesian Coffee and Cocoa Research Institute (2009)

attention to the last dimension of the challenges to the operational use of GIs: Enforcing and defending GIs rights in foreign markets to prevent the use of the indications in relation to counterfeit products. The following Section closely examines considerations that may help producers from developing countries to defend and enforce GIs rights in foreign jurisdictions.

6.4.2.2 Enforcement and Defence of Rights

The effectiveness of GIs in protecting TKBAPs is constrained by concerns over the costs of GIs enforcement in other countries. Foreign enforcement is considered necessary to curb counterfeiting of GI-protected products. Some argue that in using GIs, agricultural producers in developing countries would be required to devote enormous resources to monitoring foreign producers, enforcing GIs rights, and bringing violations to the attention of foreign governments.¹⁸⁷ International competitors who have sophisticated marketing strategies may engage in counterfeit production of the GI product in foreign markets.¹⁸⁸ The EU experience in GIs implementation reveals that when GIs protection is extended to a product, competitors tend to resort to competitive marketing strategies by closely imitating the GI-protected product in order to share in its success.¹⁸⁹ Opponents of the expanded protection of GIs argue that producers from developing countries do not have the necessary resources to overcome these violations and to enforce GIs rights in

¹⁸⁷ See note 222, Chapter 5 at 107.

¹⁸⁸ See Kerr, note 48, Chapter 5 at 9.

¹⁸⁹ William A. Kerr cites the example of “Dalla Cia Grappa” wine producers in South Africa where after an agreement with the EU over the prohibition of the use of “grappa,” the producers resorted to producing and marketing the wine with just the name “Dalla Cia.” See discussion in *ibid.* at 9.

foreign markets.¹⁹⁰ ILCs, or their representatives, may incur considerable cost in engaging in proceedings in foreign courts or before quasi-judicial forums to defend and enforce GIs.¹⁹¹

The above concern applies also to some distinctive agricultural products from developing countries that have already acquired a strong market presence and broad brand recognition. Available data on the market share and production levels of many TKBAPs from developing countries indicate instances of widespread adulteration and falsification. For example, the Tea Board of India reports that the district of Darjeeling only produces 10,000 tons of tea a year; yet, it also estimates that up to 40,000 tons of tea are annually sold worldwide as “Darjeeling.”¹⁹² The region of “Antigua” in Guatemala produces some 6 million pounds of genuine “Antigua” coffee.¹⁹³ Yet some 50 million pounds of coffee are sold under the “Antigua” designation around the world.¹⁹⁴

Traditional agricultural producers in remote areas of Chontales (Nicaragua) produce Queso Chontaleño cheese, known by domestic consumers for its very strong flavour.¹⁹⁵

¹⁹⁰ See Mauro Poinelli, “An Economic Assessment of the International Protection of Geographical Indications” in Edi DeFrancesco, Luigi Galletto & Mara Thiene, *Food, Agriculture and the Environment: Economic Issues* (Milano: FrancoAngeli, 2005) 65- 98; Justin Hughes, “Champagne, Feta, and Bourbon: The Spirited Debate About Geographical Indications” (2007) 58 *Hastings L J* 299.

¹⁹¹ See Kerr, note 48, Chapter 5 at 9.

¹⁹² See Gadi Kenny, “Intellectual Property Rights of Darjeeling Tea in the Age of Globalization and World Trade” (2004) 752 *Trade & Environment Database Journal* at 2; Teekampagne, “Only Accept Original Darjeeling Tea” online: <<http://www.teekampagne.de/en/tea/darjeeling-tea/only-accept-genuine-darjeeling>>.

¹⁹³ See Grote, note 222, Chapter 5, at 105.

¹⁹⁴ Note 100, Chapter 1.

¹⁹⁵ FAO and Siner-GI, note 236, Chapter 2, at 32.

As a typical instance of co-optation, an industrial company exports “Queso Tipo Chontaleño” cheese to the United States, where it holds a significant market share among nostalgic Nicaraguan consumers.¹⁹⁶ In addition, a study reveals that about eighty per cent of fish sauce labelled Phu Quoc (product from an island in Vietnam) in the EU and Japanese markets is sold under trademarks owned by foreign enterprises.¹⁹⁷ Similar trends are observable in as diverse products as the Indian Basmati rice, Sri Lanka's Ceylon tea, Namibian Devil’s claw, the South Pacific Kava, South African Rooibos, Andean Quinoa, and the Neem tree.¹⁹⁸

It is true that newly developed GIs-based agricultural products may face counterfeiting by corporations in other jurisdictions. However, the fact that successful GIs products may be subjected to counterfeiting and usurpation by third parties does not, in itself, justify the denial of the proprietary rights of holders of TKBAPs. Perhaps the fact that TKBAPs from developing countries are targets for multinational companies that have modern, sophisticated marketing power underscores the need to provide for their better protection. In this respect, the economic implications of protecting GIs in foreign jurisdictions may be minimal in the following two conditions: Increased protection for GIs at the international level, and collaborative efforts in GIs implementation.

¹⁹⁶ *Ibid.*

¹⁹⁷ Wagle, note 358, Chapter 4, at 19; Latha R Nair & Rajendra Kumar, *Geographical Indications: A Search for Identity* (New Delhi: LexisNexis Butterworths, 2005).

¹⁹⁸ See case study on the market status of these products in Downes & Laird, note 83, Chapter 3 at 18 ff; European Commission, Press Release, “WTO Talks: EU Steps Up Bid for better Protection of Regional Quality Products” (28 Aug 2003) online: Europa <http://europe.eu.int/rapid/pressReleasesAction.do?reference=IP/o3/1_178>; Alexandra Basak Russell, “Using Geographical Indications to Protect Artisanal Works in Developing Countries: Lessons from a Banana Republic’s Misnomered Hat” (2010) 19 *Transnat’l L & Contemp Probs* 705 at 706.

Increased protection for GIs can be achieved in the WTO by extending the higher level of GIs protection for wines and spirits to other agricultural products.¹⁹⁹ In addition, the establishment of a mandatory multilateral register, as is being canvassed in current negotiations in the WTO, may have implications for increased protection for GIs at the international level.²⁰⁰

Under the minimum level of GIs protection in the TRIPS Agreement, GIs for TKBAPs are protected against the “the use of any means ... that indicates or suggests that the good in question originates in a geographical area other than the true place of origin.”²⁰¹ However, such protection is qualified in that the use of GIs by other parties would be prohibited only if the other parties use the indication either “in a manner that may mislead the public” or in a way which may “constitute an act of unfair competition.”²⁰² Under these conditions, as the discussion in the previous Chapter shows, the use of a designation for another product that is identical or similar to a TKBAP may be possible under a number of scenarios the validity of which can be determined only through legal contest.²⁰³ Protection against unfair and misleading use of GIs means that aggrieved parties – holders of GIs rights over TKBAPs – need to prove not only that the use of an

¹⁹⁹ See discussion of the nature of GIs protection provided for wines and spirits on the one hand, and other agricultural products, on the other, above, Chapter 5, Section 5.4.1.

²⁰⁰ See discussion in Chapter 5, Section 5.4.2. According to the EU proposal for mandatory registration system, members that opted to participate in the system of registry are obliged to provide the legal means for interested parties to use the registration of the GI as a rebuttable presumption of the eligibility for protection of that GI in its territory. Participant countries are not also allowed to refuse protection of the registered geographical indication. See Council for Trade-Related Aspects of Intellectual Property Rights Special Session, *Side-By-Side Presentation of Proposals* (14 September 2005) TN/IP/W/12 at 13.

²⁰¹ TRIPS Agreement, note 13, Chapter 1, Art. 22.2 (a).

²⁰² See *ibid.* Art. 22. 2 (a) & (b).

²⁰³ See discussion, above, Chapter 5, Section 5.4.1.

indication is not correct, but also that such a use may mislead the public or may constitute unfair competition. Such a task involves arduous and costly legal proceedings in cases where the indication is used in another jurisdiction.²⁰⁴

The degree of GIs protection for wines and spirits under Art. 23 of the TRIPS Agreement is such that only producers whose products actually originate from a geographical area that the GI identifies would have exclusive rights to use the indication.²⁰⁵ Competitors in international markets would be prohibited from using the indication even where they clearly indicate the true geographical origin of the good in question, or use the GI sign or terms “accompanied by expressions such as ‘kind’, ‘type’, ‘style,’ ‘imitation’ or the like.”²⁰⁶ Under the enhanced level of GIs protection for wines and spirits, therefore, producers are protected from arduous and expensive legal proceedings that may be required to prove unfair competition and public deception in the use of the indication.²⁰⁷ Similarly, with this level of protection, rights holders in TKBAPs need not prove unfair competition or misleading use by another person who uses an

²⁰⁴ A typical example in this respect is the effort and cost that South African producers of Rooibos tea sustained to invalidate trademark rights over the “Rooibos” designation. A US company was ordered to cease the use of “Rooibos” as a trademark, albeit, after ten years of litigation that involved costly legal fees (estimated at more than one million US dollars). See Reg Butler, “Expanding Sales for Rooibos & Honeybush” (2006) *Tea & Coffee Trade Journal*; Christie Communications & Herbal Teas International, News Release, “National Treasure of South Africa is now Public Domain” (14 June 2005).

²⁰⁵ See discussion in Chapter 5 Section 5.4.

²⁰⁶ As a result, for example, producers of Basmati rice in the US or the EU would not be allowed to use such designations as “American Basmati.” In this case, even though the true geographical origin is known to be “American,” and even if there is the “Made in the US” label in the packaging of the product, it would be a violation of the GIs rights of Indian producers of the rice. See TRIPS Agreement, note 13, Chapter 1, Art. 23.1.

²⁰⁷ See discussion in *ibid*; also see Rangnekar, “Review”, note 210, Chapter 1 at 28; Carlos M. Correa, “Protection of Geographical Indications in CARICOM Countries” (2002) at 38.

indication similar or identical to the GI. Thus, higher protection of GIs at the international level may result in lower economic burden on ILCs.

The adoption of a multilateral register system under the WTO negotiation may also alleviate the burden of enforcing and defending GIs rights in foreign jurisdictions.²⁰⁸ A mandatory GIs register, as set out in the EU's proposal at the WTO's negotiations, would oblige domestic authorities to consult and take into account the register when making decisions regarding registration of GIs or trademarks in relation to particular agricultural products.²⁰⁹

To conclude, economic concerns may be minimal under conditions of strong GIs protection at the international level.²¹⁰ This conclusion is more plausible in the case of TKBAPs that already have a broad reputation and market presence, than products that are new entrants to the international market.²¹¹ In the absence of a strong protection of GIs at the international level, however, collaborative efforts may be needed to support small-scale agricultural producers through state-led initiatives.

²⁰⁸ For discussion on the negotiations in the WTO for the establishment of multilateral system of GIs, see Chapter 5 Section 5.4.2.

²⁰⁹ See discussion in Chapter 5 Section 5.4.2; also see Communication from the European Communities and their Member States, *Negotiations Relating to the Establishment of a Multilateral System of Notification and Registration of Geographical Indications* (Council for Trade-Related Aspects of Intellectual Property Rights Special Session, 2002) TN/IP/W/3.

²¹⁰ See this line of argument in Stéphan Marette, "Can Foreign Producers Benefit from Geographical Indications under the New European Regulation?" (2009) 10 *The Estey Centre Journal of International Law and Trade Policy* at 7.

²¹¹ See products from developing countries that have broad reputation in international market in above Section 6.4.2.1.

As the discussion in Chapter Two indicates, GIs are essentially agricultural instruments which, historically, have not been considered part of private property as most other regimes of IP.²¹² At least in *sui generis* forms, GIs can be conceptualized as “publicly-oriented” rights, rather than private business assets of individuals.²¹³ The involvement of the state in GIs protection is justified, therefore, based on public objectives of preventing consumer confusion, preserving cultural heritage, and conserving agricultural systems for multiple benefits.²¹⁴ On these grounds, public authorities play an active role in enforcing and defending GIs rights in foreign markets, beyond the conventional role of setting up legislative, regulatory and institutional frameworks for their operation.²¹⁵

The goal of protecting smallholder agricultural producers against counterfeiting and fraud lies at the epicentre of the EU’s policy on GIs protection.²¹⁶ The *sui generis* system of GIs allows state agencies to take an active role in enforcing GIs rights in foreign jurisdictions – as evidenced by the actions of France’s *Institut National des Appellations*

²¹² See Chapter 2 Section 2.7; also see discussion in Chapter 5 Section 5.5.2; also see Aubard, *supra* note 68 at 10; see also Rangnekar, “Intellectual Properties,” note 244, Chapter 1, at 537.

²¹³ See Giovannucci, et al, note 236, Chapter 2, at 20, 15-16 & 36; FAO and Siner-GI, note 236, Chapter 2, at 185 (concluding that “[a]s an intellectual property right, a *geographical indication* can be considered a collective or *public good*”). For an opposing view on the public aspect of GIs, see Jim Chen, “A Sober Second Look at Appellations of Origin: How the United States Will Crash France’s Wine and Cheese Party” (1996) 5 *Minn J Global Trade* 29.

²¹⁴ See Chapter 5 Section 5.5.2 above; see also O’Connor, “Law of GIs”, note 239, Chapter 2, at 311; Lisa P Lukose, “Rationale and Prospects of the Protection of Geographical Indication: An Inquiry” (2007) 12 *Journal of Intellectual Property Rights* 212-223; B. Sylvander, “Quality of Life and Management of Living Resources: Key Action n° 5 Sustainable agriculture, fisheries and forestry, and integrated development of rural areas including mountain areas” (WP 7 Final Report Synthesis and Recommendations, 2004) at 8.

²¹⁵ FAO, *Creating Conditions for the Development of GIs: the Role of Public Policies* <<http://www.fao.org/docrep/012/i1057e/i1057e07.pdf>>.

²¹⁶ See Chapter 5 Section 5.5.3 above, for discussion of the rationale for GIs protection in the context of EU’s policy.

d'Origine (INAO).²¹⁷ The role of the state in GIs protection is a key consideration in developing countries because state agencies in these countries are in a better position than small-scale producers to engage in enforcing and defending GIs rights, particularly in foreign markets.²¹⁸

Before concluding on the assessment of the economic considerations related to the potential use of GIs to protect TKBAPs, it is worthwhile to point out two concerns that arise regarding the role and participation of the state in the implementation of GIs. First, it is often argued that public agencies in developing countries do not have strong legal, institutional, and infrastructural capacity, and that, therefore, it is difficult for them to effectively carry out the tasks of establishing, implementing and enforcing GIs in these countries.²¹⁹ Indeed, representatives of developing countries often mention this difficulty as a challenge to implementing obligations contained in the TRIPS Agreement in general.²²⁰

Even so, the challenge of implementing GIs based on considerations of economic burden to state agencies in developing countries should be seen in light of the multi-functional role that GIs play in serving as public policy instruments of agricultural

²¹⁷ See discussion in Chapter 5 Section 5.5.3; see Barham, “Localization,” note 224, Chapter 2.

²¹⁸ In the EU system, GIs are considered “public owned intellectual property rights.” The status of GIs as public Property is entrenched in France, “with the state being the ‘remainderman’ and the beneficiaries having a ‘life interest’.” See Bertil Sylvander, *Quality of Life and Management of Living Resources: Synthesis and Recommendations*, Key Action n° 5, Final Report (WP 7)(2004) at 8.

²¹⁹ See Cerkia Bramley et. al, *The Economics of Intellectual Property: The Economics of Geographical Indications: Towards A Conceptual Framework for Geographical Indication Research in Developing Countries* (Geneva : World Intellectual Property Organization, 2009) at 111 ff; also Vincent Fautrel et. al, “Protected Geographical Indications for ACP Countries: A Solution or a Mirage?”(2009) 8 Trade Negotiations Insights 8-10.

²²⁰ See discussion in Chapter 4 Section 4.3.1.

development.²²¹ In this sense, efforts directed at the protection of GIs in developing countries can be considered part of each state's commitment to integrate its development goals in the implementation of IPRs.²²²

The framing of GIs as instruments of development policy provides an opportunity for a concerted effort by public and private interest groups.²²³ External support by way of aid and cooperation from private and public institutions has proven an effective strategy for successful implementation of GIs in recent times.²²⁴ In Ecuador, for example, the Ministry of Agriculture embarked on a project to preserve the quality of Cacao Arriba through GIs protection.²²⁵ With the support of UNCTAD, producer groups, such as the National Federation of Cacao Producers of Ecuador and the Union of Cacao Producers Organizations of Ecuador, collaborated with a number of NGOs to implement GIs protection.²²⁶ In addition, the significance of collaborative efforts in GIs can be illustrated through the Indian experience in GIs implementation. In India, the implementation of GIs

²²¹ The WTO has granted least-developed countries an extended deadline (July 2013) for implementing the TRIPS Agreement. The deadline in respect of pharmaceutical patents has been extended to 2016. See WTO, "TRIPS: Which Countries are Using the General Transition Periods?" online: WTO <http://www.wto.org/english/tratop_e/trips_e/tripfq_e.htm>.

²²² See the intersections of IP and development from the perspective of states' obligation to enforce IP regimes in WIPO, *Intellectual Property Handbook: Policy, Law and Use* (Geneva: World Intellectual Property Organization, 2004); Andra Koury Menescal, "Changing WIPO's Ways? The 2004 Development Agenda in Historical Perspective" (2005) 8 J World Intell Prop 761-796.

²²³ See note 222, Chapter 5, at 106.

²²⁴ See FAO, *Creating Conditions for the Development of GIs: The Role of Public Policies* online: FAO <<http://www.fao.org/docrep/012/i1057e/i1057e07.pdf>>

²²⁵ See FAO and Siner-GI, note 236, Chapter 2, at 162.

²²⁶ See *Ibid.*

– in their different stages – involved concerted participation of the government of India, the United Kingdom Department for International Development, and UNCTAD.²²⁷

Another concern regarding the participation of the state in GIs implementation arises from the idea of a limited role for the state in the liberal economic theory of free trade. A dominant involvement of the state may be perceived as trade protectionism and a “constraint” on economic growth.²²⁸ Nevertheless, as explained in the previous Chapter, state intervention in the protection of TKBAPs through GIs is justified on broader considerations of public policy objectives.²²⁹ In a way, such interventions assist to ensure positive responses to various aspects of the global economic pressures directed against TK systems.²³⁰

The analysis in the previous Sections has focused on identifying and evaluating some factors that influence economic outcomes in the implementation of GIs to protect TKBAPs. In general, the economic potential of GIs in agricultural development is widely recognized.²³¹ Despite concerns about challenges to introducing the system of GIs, and

²²⁷ See Rangnekar, “Law and Economics,” note 352, Chapter 4 at 78.

²²⁸ See generally Steven A. Bowers, “Location, Location, Location: The Case against Extending Geographical Indication Protection under the TRIPS Agreement” (2003) 31 *AIPLA Q J* 129; Arinolayemi A. Adebomire & L. Taylor Arnold, “Origin, Prominence, Profit, and Consumer Confusion: An Analysis of the Global Debate on Geographical Indication Protection Systems” (2004) 4 *Wake Forest Intell Prop L J* 68; Deborah J. Kemp & Lynn M. Forsythe, “Trademarks and Geographical Indications: A Case of California Champagne” (2006) 10 *Chap L Rev* 257.

²²⁹ See discussion in Chapter 5 Section 5.10; for a review of global economic pressures against TK systems that justify the adoption of a protection regime, in general, see discussion in Chapter 3 Section 3.3 & 3.4; also, see discussion above, Section 6.5, 6.6, 6.7 & 6.8 on the role of GIs in light of considerations regarding the prevention of biopiracy, the protection of biodiversity, ensuring food security, and protection of cultural diversity.

²³⁰ See Chapter 3 Sections 3.2 & 3.3.

²³¹ See discussion, above, Section 6.3.

as to the operational use of GIs, the analysis in the previous Sections indicates that, properly implemented, GIs can protect TKBAPs and have the potential to improve economic conditions in developing countries. It lies beyond the scope of this study to provide a definitive assessment of the economic effect of GIs among ILCs because this would entail empirical data analysis in specific contexts.²³² The economic success of GIs implementation may largely depend on variables such as local conditions of production, the means of GIs protection, and the status of the product in the market. In this regard, recent empirical data from context-specific studies have confirmed that there are economic benefits from the implementation of GIs in developing countries.²³³

An assessment of the applicability of GIs to protect TKBAPs in developing countries need not necessarily be restricted to the economic considerations implicated in their implementation. The economic burden of GIs implementation may be justified on the potential gains that come in multiple policy areas in the long-term.²³⁴ In other words, the

²³² For empirical studies on the economic impacts of GIs, see for example, Deepthi Elizabeth Kolady, William Henri Lesser and Chunhui Ye, “The Economic Effects of Geographical Indications on Developing Country Producers: A Comparison of Darjeeling and Oolong Teas” (2011) 2 WIPOJ 157-172; Ramona Teuber, “Consumers and Producers’ Expectations Towards Geographical Indications: Empirical Evidence for A German Case Study” (2011) 113 British Food Journal 900 – 918.

²³³ See Dwijen Rangnekar, *Geographical Indications and Localization: A Case Study of Feni*, CSGR Report (2009) online: <www.esrc.ac.uk/my-esrc/.../4fcff116-d65b-4ed1-8540-9e10c2dfcca9>; Michael L. Blakeney & Thierry Coulet, *The Protection of Geographical Indications (GI): Generating Empirical Evidence at Country and Product Level to Support African ACP Country Engagement in the Doha Round Negotiations*, Mid-Term Progress Report, Ref: 9 ACP RPR 140 - 011-10, online: <<http://acp-mts-programme.org/assets/docs/103/191/9238567-2afa5bf.pdf>>; Monique Bagal & Massimo Vittori, “Preliminary Report on the Potential for Geographical Indications in Côte d’Ivoire and the Relevant Legal Framework” Paper commissioned by the ACP-EU programme Trade.Com, (ACP Regional Workshops on Geographical Indications, April - May 2010, Geneva); Pradyot R. Jena & Ulrike Grote “Does Geographical Indication (GI) Increase Producer Welfare? A Case Study of Basmati Rice in Northern India” (Paper submitted to the ISEE Conference on Advancing Sustainability at the time of Crisis, 2010, Bremen); Madhavi Sunder. “IP³” (2006) 59 Stanford Law Review 257;

²³⁴ Aaron C. Lang, “On The Need to Expand Article 23 of the TRIPS Agreement” (2007) 16 Duke J of Comp & Int’l L 487 at 500-501.

significance of GIs in developing countries can be appraised in light of broader considerations that may be served because of the protection of TKBAPs through GIs. Appropriate forms of GIs can provide context for the enforcement of public policy goals that address the challenges identified in this regard in Chapter Three.²³⁵ Thus, as I hypothesized earlier, in addition to economic considerations, the applicability of GIs to protect TKBAPs should be assessed in terms of their relevance to biodiversity and socio-cultural objectives in domestic policy. In this respect, the following Sections examine the significance of GIs in policy scenarios regarding the conservation of biodiversity, the prevention of biopiracy, the preservation of cultural diversity, and the attainment of food security.

6.5 GEOGRAPHICAL INDICATIONS AND BIODIVERSITY

In addition to the economic benefits of adding value to traditional agricultural products, the implementation of GIs in developing countries is often seen as enhancing environmental protection and biodiversity conservation objectives.²³⁶ Given the significant impact of technology-driven agricultural transformation on biological diversity,²³⁷ the instrumentality of GIs for the conservation of agro-biodiversity is an

²³⁵ See Chapter 3 Sections 3.2, 3.3 & 3.4.

²³⁶ Jorge Larson Guerra, “Geographical Indications and Biodiversity: Bridges Joining Distant Territories” (2004) 2 Comment – Bridges 17; Claude Garcia et al, “Geographical Indications and Biodiversity in the Western Ghats, India: Can labelling Benefit Producers and the Environment in a Mountain” (2007) 27:3 Mountain Research and Development 206-210; Laurence Berard & Philippe Marchenay, “Local Products and Geographical Indications: Taking Account of Local Knowledge and Biodiversity” (2006) 187 International Special science Journal 109-116; Erik Thévenod -Mottet, “Geographical Indications and Biodiversity” in Stewart Lockie & David Carpenter, eds, *Agriculture, Biodiversity and Markets : Livelihoods and Agroecology in Comparative Perspective* (London/Washington: Earthscan, 2010).

²³⁷ See Chapter 3 Section 3.3.2.

important consideration that should weigh heavily in policy choices relating to GIs protection. Indeed, numerous observations suggest a strong association between GIs protection and biodiversity conservation.

First, given the economic potential of GIs for ILCs, the protection of GIs provides incentives for them to practice traditional production methods which enhance biodiversity conservation.²³⁸ The CBD underscores the need for the recognition of ABS mechanisms with ILCs over the utilization of biological resources in order to encourage the continuance of TK-based practices.²³⁹ In this sense, the successful implementation of GIs incentivizes conservation of biological resources as proposed under Art. 8 (j) of the CBD, albeit, with a different approach, namely, that based on the recognition of GIs rights over their resources.²⁴⁰

As explained in previous Chapters, GIs are built upon collective traditions and a collective decision-making process.²⁴¹ As a result, the economic benefits of GIs extend to all individuals and groups who subscribe to the traditional practices belonging to the culture of their community. In this regard, GIs serve as a factor of “mobilization” for

²³⁸ See Larson, “Relevance” *supra* note 81 at 74.

²³⁹ See Chapter 4 Sections 4.6 & 4.3.3 above.

²⁴⁰ CBD, note 1, Chapter 2, Art 8 (j); see also discussion in Chapter 4 Section 4.6.1 above.

²⁴¹ See Chapter 5 Section 5.8 above.

local communities.²⁴² It is a widely held view that the mobilization of local communities is essential for achieving the sustainable management of local resources.²⁴³

Recognizing and protecting the products of TK in agricultural production with GIs will be important in biodiversity-rich countries where sustainable and unsustainable uses of biological resources are in competition. The involvement and mobilization of local communities in support of sustainable agricultural production increasingly depends on the existence of appropriate incentives.²⁴⁴ The promise of economic benefits from GIs protection is a warrant for the patronage of sustainable methods of agricultural production.

For example, the introduction of GIs protection to the Jamaican Blue Mountain coffee significantly increased the price of the product in international trade.²⁴⁵ The resulting increase in the production of Blue Mountain coffee has, however, resulted in a decrease in non-Blue Mountain production of coffee.²⁴⁶ Thus, given that the bases of GIs protection incorporate traditional knowledge, innovations and practices relevant to the conservation of biodiversity, the shift from the production of non-GIs products to GIs-relevant

²⁴² Note 80, Chapter 5 at 13.

²⁴³ See Erica Daes, “Protection of the Heritage of Indigenous Peoples” cited in Downes & Laird, note 83, Chapter 3 at 2 ff; Katrina Brandon, “Policy and Practical Considerations in Land-Use Strategies for Biodiversity Conservation” in Randall A. Kramer, Carel van Schaik & Julie Johnson, *Last Stand: Protected Areas and the Defense of Tropical Biodiversity* (New York: Oxford University Press, 1997); Madhav Gadgil, Fikret Berkes & Carl Folke, “Indigenous Knowledge for Biodiversity Conservation” (1993) 22 *Biodiversity: Ecology, Economics, Policy* 151-156; Johan Colding & Carl Folke, “Social Taboos: “Invisible” Systems of Local Resource Management and Biological Conservation” (2001) 11 *Ecological Applications* 584–600.

²⁴⁴ Note 80, Chapter 5 at 13.

²⁴⁵ See Giovannucci, et al, note 236, Chapter 2, at 171. The production of non-blue Mountain coffee has decreased from 2,934,800 lb of green coffee in the 1981/82 crop to 719,400 lb for 2005/06.

²⁴⁶ The Production of Blue mountain coffee grew from 405,000 lb in the 1981–1982 harvest to a high of 3,800,000 lb in the 2005–2006 crop and about 2 ½ million pounds in 2007. See, *ibid.*

products would contribute to the sustainable use of biodiversity in agricultural production.²⁴⁷ In this manner, GIs may contribute to the maintenance and preservation of traditional agricultural systems, thereby, responding to the negative impacts on biodiversity evident in high-tech based agricultural production methods.²⁴⁸

The promise of GIs for the sustainable use of biodiversity is not identical to the romantic narrative of “reward to spur innovation,” as propounded by adherents of the utilitarian theory of IP.²⁴⁹ Since GIs can empower ILCs to control market forces and prevent cultural appropriation by outsiders, they can play a key role as a valorization strategy and incentive toward the enhancement of public goods (localness, tradition, quality, safety, biodiversity conservation, and respect for the environment), and create opportunities for rural communities to undertake these as a means of subsistence.²⁵⁰ Thus, GIs enable TK holders to engage in an agricultural practice that yields multifunctional values beyond the acknowledged primary purpose of agricultural production: The supply of food, fibre, and raw materials for manufacturing.²⁵¹

²⁴⁷ Jherime L. Kellermann, et al, “Ecological and Economic Services Provided by Birds on Jamaican Blue Mountain Coffee Farms” (2008) 22 *Conservation Biology* 1177–1185; M. A. McDonald, J. R. Healey & P. A. Stevens, “The effects of secondary forest clearance and subsequent land-use on erosion losses and soil properties in the Blue Mountains of Jamaica” (2002) 9 *Agriculture, Ecosystems & Environment* 1.

²⁴⁸ See Chapter 3 Section for discussion of the impact of technology-driven transformation of agriculture on biodiversity.

²⁴⁹ ILCs engage in the continual creation, preservation, and transfer of knowledge as a means of survival and group identity, not for the sake of financial gain by market forces. See Anil Gupta, “Accessing Biological Diversity and Associative Knowledge Systems: Can Ethics Influence Equity?” cited in Downes, note 320, Chapter 4, at 260.

²⁵⁰ Note 80, Chapter 5 at 15.

²⁵¹ *Ibid.*

Some express concern that successful implementation of GIs strategies may facilitate the commercialization and, inevitably, the dissipation of agro-biodiversity through market forces.²⁵² As previously seen, this concern may arise in relation to instruments that are based on the creation of contractual bilateral relations, such as variations of ABS mechanisms that allow the establishment of private property rights over biological resources by third parties.²⁵³ In contrast to these arrangements, the application of GIs to TKBAPs constitutes a recognition of the proprietary rights of ILCs over their resources.²⁵⁴

The use of GIs and their impact on agro-biodiversity should be distinguished from that of other strategies intended to attract market gains from TKBAPs, such as the adoption of differentiation strategies based on fair trade and environmental accountability.²⁵⁵ Successful marketing through such differentiation strategies may increase the demand for the products to the extent that existing resource management systems would be put under pressure.²⁵⁶ As indicated in the discussion in Chapter Three, the negative impacts of market strategies based on differentiation schemes through labelling may result in

²⁵² See Boisvert, *supra* note 55 at 29 (noting that success [in the implementation of GIs] could cause disruption in management systems and impose unanticipated stress on local ecosystems.” Also see Broude, note 138, Chapter 1, at 649 (arguing that market forces involved in the agri-food sector are “so pervasive that GIs cannot in and of themselves, as legal agents, prevent market influence on local culture, leading to degrees of cultural transformation and international cultural homogenization”).

²⁵³ See discussion in Chapter 4 Section 4.6.1.

²⁵⁴ See justifications for the recognition of proprietary rights of indigenous peoples and local communities over their knowledge-based resources in Chapter 5 Section 5.10.

²⁵⁵ See discussion of such strategies as fair trade and eco-labeling in Chapter 3 Section 3.6; also see Stefano Pagiola et al, *Selling Forest Environmental Services* (London: Earthscan Publications, 2002); Niels Halberg et al, eds, *Global Development of Organic Agriculture* (Oxfordshire: CABI Publishing, 2006); Matthew Rimmer, “Australian Icons: Authenticity Marks and Identity Politics” (2004) 3 *Indigenous Law Journal* 139.

²⁵⁶ See Chapter 3 Section 3.7 above, for discussion of challenges and impacts of differentiation schemes.

overexploitation of agro-biodiversity and consequent damage to ecosystems.²⁵⁷ For example, the growth in foreign demand for the Kava plant arising from a differentiation of marketing measures has led some farmers and harvesters in the South Pacific region to shift from traditional methods – which frequently involve multi-cropping and a waiting period for the Kava to reach a certain age and size – to more destructive techniques.²⁵⁸ The increasing commercialization of the plant resulted in the harvesting of immature Kava, jeopardizing both the quality of the medicinal product and reducing its resource base.²⁵⁹

Unlike most instruments of differentiation that increasingly focus on economic outcomes,²⁶⁰ the continued use of GIs depends on strict adherence to pluralistic TK-based production methods. The custodial responsibilities of ILCs, such as the social custom of selecting, saving, swapping and replanting seeds from year to year, may be incorporated in GIs regulations as recognized methods of production.²⁶¹ The conditions for the protection of GIs may include, among others, criteria that incorporate market-attractive standards in today's economy, such as preferences for environmentally sensitive methods of production, genetically modified-free production, and maintenance of production

²⁵⁷ See discussion in Chapter 3 Section 3.2.

²⁵⁸ See Downes & Laird, note 83, Chapter 3 at 21; see also William C. Clarke, “Traditional Land Use and Agriculture in the Pacific Islands” in R. J. Morrison & Linda Cowl, eds, *Science of Pacific Island Peoples: Land Use and Agriculture* (Auckland: South Pacific Books, 1994) at 11 ff.

²⁵⁹ Panizzon, note 19, Chapter 3 at 32.

²⁶⁰ See Chapter 3 Section 3.7 above, for discussion of the drawbacks in dominant instruments of differentiation.

²⁶¹ Brewster Kneen, *The Tyranny of Rights* (Ottawa: The Ram's Horn, 2009) at 67.

conditions free of chemical pesticides and contaminants.²⁶² The regulation of production methods in GIs protection ensures that the attributes of TK-based production that are essential for biodiversity conservation and ecological protection are maintained even when the product acquires a broader market share.

As noted in previous Sections, the degree to which GIs may be relevant to biodiversity conservation and environmental protection might depend on specific contexts in which GIs protection is applied. Among other considerations, the significance of GIs to the preservation of biodiversity, as set out in this Section, may depend on the “legal means” chosen to implement GIs protection, i.e., whether *sui generis* or trademark-based means in specific contexts. Although it lies beyond the scope of this thesis to provide empirically supported suggestions in such contexts, based on the analysis in this Section, it can be concluded that GIs may be used to pursue agricultural policies that preserve traditional farming and biodiversity management practices with the goal to promote sustainable use of biodiversity.²⁶³ In addition to its potential to advance biodiversity conservation, GIs strategy also has positive impact on the promotion of food security, which is the subject of the next section.²⁶⁴

²⁶² Rosemary J. Coombe, “Legal Claims to Culture in and Against the Market: Neoliberalism and the Global Proliferation of Meaningful Difference” (2005) 1 *Law, Culture and the Humanities* 35 at 47; Downes & Laird, note 83, Chapter 3 at 6; also, see discussion of global economic pressures on traditional knowledge systems in Chapter 3 Sections 3.2, 3.3 & 3.4.

²⁶³ See *ibid.* at 3.

²⁶⁴ See Chapter 4 Section 4.3.4 and Section 4.5, above, for discussion of the necessities for and policy context of Farmers’ Rights, and food security.

6.6 GEOGRAPHICAL INDICATIONS IN THE CONTEXT OF FOOD SECURITY

As seen in Chapter Four, the FAO engages in efforts to protect TK systems and TKBAPs as an aspect of achieving the goals of food security.²⁶⁵ A broad understanding of food security includes not only availability, but also accessibility of culturally-appropriate food.²⁶⁶ Amartya Sen views hunger and starvation as a failure in peoples' ability to access food, rather than as a lack of food availability.²⁶⁷ Under this view, food security can be realized through any combination of; (i) trade-based entitlements (ability to earn foreign exchange in order to import food); (ii) production-based entitlements (increasing domestic food production capacity).²⁶⁸

In analyzing the role of GIs to pursue the objectives of food security, the two types of entitlements can be elaborated in a policy framework of food sovereignty²⁶⁹ which focuses on three major priority areas: Ensuring access to productive resources; mainstreaming agroecological production; and encouraging participation in trade and

²⁶⁵ See discussion of the relationship between the concepts of food security and farmers' rights in Chapter 3 Section 3.3.3; and Chapter 4 Section 4.3.4.

²⁶⁶ See Chapter 3 Section 3.3.3, above, for discussion of "Challenges to Food Security and the Need for Food Sovereignty."

²⁶⁷ See Amartya Sen, *Poverty and Famines: An Essay on Entitlement and Deprivation* (New York: Oxford University Press, 1982) at 22ff; also see Carmen G. Gonzalez, "Trade Liberalization, Food Security, and the Environment: The Neoliberal Threat to Sustainable Rural Development" (2004) 14 *Transnat'l L & Contemp Probs* 419 at 428 (noting that "people go hungry because of economic inequalities that prevent them from obtaining food").

²⁶⁸ Gonzalez, *ibid.* at 428 citing Christopher Stevens et al, *The WTO Agreement on Agriculture and Food Security* (London: Commonwealth Secretariat, 2000) at 18; also, see Oguamanam, "Food Security," note 155, Chapter 3; Stephen Devereu, "Sen's Entitlement Approach: Critiques and Counter-critique" (2001) 29 *Oxford Development Studies* 245.

²⁶⁹ See distinction between the concepts of food security and food sovereignty, and preference of the latter as an analytical framework for understanding the role of GIs in achieving food security in Chapter 3 Section 3.3.3 above.

local markets.²⁷⁰ GIs may be relevant to the guarantee of food sovereignty through measures that address each priority area.

Strategies to ensure access to productive resources may involve measures for “the promotion of access to land, water, genetic and other natural resources.”²⁷¹ The protection of GIs in a defined geographical area that has traditional and cultural significance, exemplified by the concept of *terroir* in the EU countries,²⁷² promotes and supports ILCs’ desire to maintain exclusive control over territorial systems of production.²⁷³ In allowing control over production processes in local territories, GIs may be used as instruments to resist negative impacts of high-tech agricultural practices, such as the use of herbicides,

²⁷⁰ The International Planning Committee for Food Sovereignty (IPC) notes that the food sovereignty framework addresses the problem of food insecurity through four priority areas: “the right to food; access to productive resources; mainstreaming of agroecological production; trade and local markets.” See *supra* note 157 at 6-7. In their “Declaration of Food Sovereignty,” Via Campesina identified seven principles of food sovereignty that are consistent with these priority areas: a basic human right to food; agrarian reform; protecting natural resources; reorganizing food trade; ending the globalization of hunger; social peace; and democratic control. See Via Campesina, *The Right to Produce and Access to Land: Food Sovereignty - A Future without Hunger* (1996) online: The Voice of the Turtle <http://www.voiceoftheturtle.org/library/1996_per_cent20Declaration_per_cent20of_per_cent20Food_per_cent20Sovereignty.pdf>.

²⁷¹ Richard Lee, “Food Security and Food Sovereignty” Centre for Rural Economy Discussion Paper Series No. 11 (2007) at 6. (Lee, “Food Security and Food Sovereignty”)

²⁷² In this context, the analytical framework of *terroir*, adopted in the discipline of economic geography, is understood as “the attempt to affect, influence, or control actions and interactions (of people, things, and relationships) by asserting and attempting to enforce control over a geographic area.” National Research Council Rediscovering Geography Committee, *Rediscovering Geography: New Relevance for Science and Society* (Washington: National Academies Press, 1997) at 73; also see the concept of *terroir* and its significance in the EU system of GIs in Chapter 5, Section 5.5.2.

²⁷³ See Daniela Benavente, “The Economics of Geographical Indications: GIs Modeled As Club Assets” Graduate Institute of International and Development Studies Working Paper No: 10/2010 (2010) at 8 (noting that GIs “can be modeled as a club asset for a club membership consisting of firms located in the territory to which the GI is attached.”); Olufunmilayo Arewa, “Culture as Property: Intellectual Property, Local Norms and Global Rights” *Northwestern Public Law Research Paper No. 07-13* (2007); Adriano Profeta et al, “Protected Geographical Indications and Designations of Origin: An Overview of the Status Quo and the Development of the Use of Regulation (EC) 510/06 in Europe, With Special Consideration of the German Situation” (2010) 22 *Journal of International Food & Agribusiness Marketing* 179-198; Stephen B. Brush, Doreen Stabinsky, *Valuing Local Knowledge: Indigenous People and Intellectual Property Rights* (Washington: Island Press, 1996).

fungicides, insecticides and genetically modified (GM) seeds.²⁷⁴ Although modern agricultural techniques may be relevant to food security, particularly in territories that have reduced production capability – and less cultural significance – the use of GIs may, in most cases, provide a context for measures to support traditional production systems as a means of promoting food security.

The second area of policy priority for food sovereignty calls for “the mainstreaming of agro-ecological production...defined as the application of ecological principles to the design and management of agro-ecological systems.”²⁷⁵ In this regard, the realization of food sovereignty requires implementing measures that support the integration of biodiversity objectives in agricultural production through “...the use of locally-controlled, diverse, small-scale agro-ecological production methods.”²⁷⁶ As discussion in the previous Section shows, the adoption of GIs in agricultural production and, consequently, the internalization of standards that incorporate trans-generational methods of resource management, supports the goals of biodiversity conservation and environmental protection.²⁷⁷ Due to the ecological benefits of their protection, GIs

²⁷⁴ See technology-driven transformation in agriculture, above, Chapter 3 Section 3.3; also see Blakeney, “Food Security” note 133, Chapter 1 at 184; *supra* note 157 at 10.

²⁷⁵ *Supra* note 157 at 7; see also Jim Scott, “Food Sovereignty: Practical and Theoretical Approaches to the Power Politics of the Food System” (2009) Yes! Magazine.

²⁷⁶ The “World Forum for Food Sovereignty” convened in Mali from 23-27 February 2007, identified and discussed seven themes of the objectives and actions of the Food Sovereignty movement: trade policies and local markets, local knowledge and technology, access to and control over natural resources, sharing territories between sectors, conflict and disaster response, migration and production models. See World Forum for Food Sovereignty, *Forum Documents* (2007) online: <<http://www.nyeleni.org/spip.php?article118>>.

²⁷⁷ See above Section 6.5.

advance the aim of food sovereignty to feed not only today's generation, but also future generations.²⁷⁸

In the policy priority of trade and market policies, GIs support the achievement of food security by increasing the ability of traditional farming communities to acquire income that supports exchange entitlements through trade policies.²⁷⁹ In this respect, GIs generate economic benefits for ILCs through greater market access and equity in international trade, thereby enabling farmers to sell their products and buy their necessities.²⁸⁰ GIs help traditional communities to improve their economic well-being through increased participation in the activities of production and marketing.

In addition to their role in the goals of biodiversity protection and food security, the significance of GIs in developing countries can also be analyzed in light of their significance in preventing biopiracy.²⁸¹ It is evident from discussion in previous Chapters that instances and claims of biopiracy are intimately related to the various forms of IP.²⁸² It is difficult to assess the role of GIs in preventing biopiracy in the broader contexts of

²⁷⁸ Note 175, Chapter 3, at 309.

²⁷⁹ Blakeney, "Food Security", note 134, Chapter 1 at 185.

²⁸⁰ See discussion in Section 6.3.; also see Note 175, Chapter 3,

²⁸¹ See discussion of biopiracy against TKBAPs in Chapter 3, Section 3.2.2.1; also, see, e.g., Statement by H.E. Mrs Rini M.S. Soewandi, Ministry of Industry and Trade, Indonesia, Ministerial Conference—Fifth Session—Cancun, September 10-14, 2003, document WT/MIN(03)/ST/24 (September 11, 2003); see also numerous examples cited in WIPO *Consolidated Survey of Intellectual Property Protection of TK* WIPO/GRTKF/IC/3/7, April 4, 2003.

²⁸² See Chapter 1 Section 1.2.2. & Chapter 3 Section 3.2.2.1, for discussion of biopiracy.

the various forms of IP.²⁸³ The following Section considers the contexts in which GIs may benefit developing countries in preventing biopiracy.

6.7 GEOGRAPHICAL INDICATIONS AND BIOPIRACY

Some of the approaches to protecting TK considered in Chapter Four are specifically designed to respond to the multi-faceted challenges of biopiracy.²⁸⁴ However, the discussion in previous Sections has shown that GIs mainly serve as IP instruments for positively protecting TKBAPs, i.e., to enable ILCs to fairly participate in international trade.²⁸⁵ In addition to positive empowerment of ILCs, GIs may also be used defensively to prevent biopiracy in particular ways.²⁸⁶ GIs address biopiracy arising from unauthorized appropriation of signs, names or designations of TKBAPs through the use of the trademark system.

In a way, biopiracy extends to situations where companies and individuals register trademark protection over the names of TKBAPs or their byproducts.²⁸⁷ Worthy of mention in this respect is the case of Cupuaçu, an Amazonian fruit that is a primary food

²⁸³ According to Mgbeoji, biopiracy is not just a legal problem of the appropriation of TK; it is also a “phenomenon that operates within a social structure of inbuilt primordial prejudices and biases against non-Western cultures and non-Western epistemological frameworks.” Mgbeoji, “Global Biopiracy,” note 22, Chapter 1, at 3.

²⁸⁴ See discussion, above, Chapter 3 Section 3.2.2.1.

²⁸⁵ See distinction between “positive” and “defensive” protection in the use of the term “protection” above, Chapter 2 Section 2.9; also, see discussion in above, Section 6.3, and Chapter 3 Section 3.7.

²⁸⁶ On the role of GIs in preventing biopiracy, see Daniel F. Robinson, *Confronting Biopiracy: Challenges, Cases and International Debates* (Washington: Earthscan, 2010); Kasturi Das, “International Protection of India’s Geographical Indications with Special Reference to ‘Darjeeling’ Tea” (2006) 9 J World Intell Prop 459–495.

²⁸⁷ For extensive discussion of the different aspects of biopiracy, see above, Chapter 1, Section 1.2.3.; also, Chapter 3 Section 3.2.2.1.

source for indigenous peoples in the Rainforest.²⁸⁸ Recognized for its creamy exotic tasting pulp, Cupuaçu is used throughout Brazil and Peru to make fresh juice, ice cream, jam and tarts.²⁸⁹ The fruit is also considered a culinary delicacy in other South American countries where demand outstrips supply.²⁹⁰

Japan's Asahi Foods and its allied US company, Cupuaçu International, registered the name "Cupuaçu" as a trademark for various product classes (including chocolate) in the EU, the US and Japan.²⁹¹ When the NGO, Amazonlink.org, on behalf of Brazilian local producers, inquired of export possibilities for sweets and other Cupuaçu products from Brazil to markets in Germany, it was forbidden to use the word "Cupuaçu."²⁹² This sparked a global campaign against the biopiracy of Cupuaçu, which the Brazilian network, Amazonian Work Group (GTA) coordinated in collaboration with Amazonlink.org, other NGOs, and small-scale producer groups.²⁹³

A similar incident involved Rooibos, a herb exclusively grown in the Western and Northern Cape's Cedarberg region in South Africa.²⁹⁴ In its different uses, the plant is

²⁸⁸ See Amazon link.org, *The Cupuaçu Case* online: <<http://www.amazonlink.org/biopiracy/Cupuaçu.htm>>

²⁸⁹ See *Ibid.*

²⁹⁰ See *Ibid.*

²⁹¹ See Michael Schmidlehner, "Cupuaçu – A Case of Amazonian Self-Assertion" (2003) Seedling online: GRAIN <<http://www.grain.org/seedling/?id=234>>.

²⁹² See Yi Shin Tang, *Legal Frontiers in the Global Dissemination of Technology and Knowledge: The Significance of three Case Studies for Economic Development*, Institut Cedimes (2008) at 10.

²⁹³ See Duncan Matthews, *Intellectual Property and Development: The Role of NGOs and Social Movements* (Cheltenham: Edward Elgar Publishing, 2011).

²⁹⁴ See E. Joubert et al, "South African Herbal Teas: *Aspalathus linearis*, *Cyclopia* spp and *Athrixia phylicoides*—A Review" (2008) 119 *Journal of Ethnopharmacology* 376-412.

linked to the culture, as well as the economic and social life of the indigenous peoples of South Africa.²⁹⁵ Rooibos has significant commercial value in international markets, and is sold at premium price mainly in the form of caffeine-free tea for therapeutic and enjoyment purposes.²⁹⁶ Burke International, a US-based Company, acquired exclusive rights to use “Rooibos” as a trademark in the US.²⁹⁷ As such, the Company demanded royalties from South African exporters for the use of the word “Rooibos” in any form.²⁹⁸

In the cases of Cupuaçu and Rooibos, companies appropriated and monopolized indications of agricultural products that embody TK, by registering trademark rights in foreign markets. The respective authorities in Japan and the US later cancelled the trademark rights over the two products.²⁹⁹ Securing cancellation of the usurpatory marks involved an arduous and expensive effort in the two jurisdictions.³⁰⁰ The process of cancellation would have been simple, had GIs protection been in place for the two products. Perhaps the presence of mandatory multilateral GIs registration system, as

²⁹⁵ See Butler, *supra* note 204; Lindsay Carter, *South Africa: Rooibos*, TED Case Studies Number 777, 2005 <<http://www1.american.edu/ted/riobas.htm>>.

²⁹⁶ See Laura T. Reynolds, “Fair Trade Rooibos tea: Connecting South African Producers and American Consumer Markets” (2010) 41 *Geoforum* 74-83.

²⁹⁷ Zenobia Ismail & Tashil Fakir, “Trademarks or trade barriers?: Indigenous knowledge and the flaws in the global IPR system” (2004) 31 *International Journal of Social Economics* 173-194; Gerhard Pretorius, “Rooibos Industry Goes Green with Biodiversity Initiative” online: Rooibos Biodiversity Project <http://sarooibos.co.za/index2.php?option=com_content&task=emailform&id=99>.

²⁹⁸ See Butler, *supra* note 204.

²⁹⁹ See Ismail & Fakir, *supra* note 297.

³⁰⁰ The Rooibos trademark was cancelled after ten years of litigation and about a million dollars expense in legal fees by the South African Company, Rooibos Ltd. See Anthony Stoppard, “South African, U.S. Firms Fighting over Tea Trademark” IPS (20 August 2002) online: IPS <<http://ipsnews.net/news.asp?idnews=95839>>; Christie Communications & Herbal Teas International, News Release, “National Treasure of South Africa is now Public Domain” (14 June 2005). In the case of Cupuaçu, a coalition of national and international NGOs led an aggressive campaign, on-line protests and a lawsuit, which led to the cancellation of the trademark. See *supra* note 288.

currently proposed by the EU and supported by developing countries in the WTO negotiations, would have made it impossible for Burke International and Asahi Foods to register trademarks protection over the products in the first place.³⁰¹

Another aspect of biopiracy involves the use of signs, names or designations of TKBAPs for products that result from patent-protected processes of technological application.³⁰² In this respect, the Basmati case illustrates the role that GIs might play to prevent aspects of biopiracy.³⁰³ Besides controversy over the patent application for biotechnologically produced rice varieties,³⁰⁴ the dispute in the Basmati case involved the misuse of the name “Basmati.”³⁰⁵ In major export markets, such as Saudi Arabia (the world’s largest importer of Basmati rice), and the UK, the term “Basmati” can be applied only to long grain aromatic rice grown in India and Pakistan.³⁰⁶ The UK *Code of Practice*

³⁰¹ This is, perhaps, under the assumption that GIs protection for the products preceded any subsequent trademark claim from Burke International and Asahi Foods. See discussion of the relationship between geographical indications and trademarks in Chapter 5 Section 5.6. Also, see discussion above in Section 6.4.2.2.

³⁰² See, generally, Annette Kur & Roland Knaak, “Protection of Traditional Names and Designations” in note 83, Chapter 2, at 293-332.

³⁰³ See discussion of the basmati rice case in Chapter two in relation to the problem of biopiracy in Chapter 3 Section 2.2.2.1.

³⁰⁴ See Micheal Woods, “Food for Thought: The Biopiracy of Jasmine and Basmati Rice Woods” (2002) 13 Alb L J Sci & Tech 123; David Lea, *Property Rights, Indigenous People and the Developing World: Issues From Aboriginal Entitlement to Intellectual Ownership Rights* (Danvers: BRILL, 2008) at 264 ff.

³⁰⁵ See Rangnekar & Kumar, “Genericity”, note 151, Chapter 5; Lerson Tanasugar, “New Challenges in IPRs Protections: Biological Diversity & Biotechnology Jasmine Rice Crisis A Thai Perspective” <<http://lerson.org/public/IP/1998jasmine.pdf>>.

³⁰⁶ Saudi Arabia is the largest importer of Basmati rice, whereas the UK is the largest importer of Basmati in Europe. See Mohammad A. Razzaque, Selim Raihan & Nazneen Ahmed, “Global Rice Trade Liberalisation: Implications from Some Alternative Scenarios” (9th GTAP Annual Conference Addis Ababa, 2006); The UK Grain and Feed Trade Association (GAFTA) specifically states that only long grain rice from India and Pakistan can be labeled as Basmati rice. See *Code of Practice on Basmati Rice*, British Retail Consortium, in Consultation with the Local Authorities Co-ordinators of Regulatory Services (LACORS) and the Association of Public Analysts (APA), (July 2005) at 3.1[Code of Practice].

on Basmati Rice affirms that the distinctiveness of authentic Basmati rice can only be obtained from the northern regions of India and Pakistan due to the unique and complex combination of environment, soil, climate, agricultural practices and the genetics of the Basmati varieties.³⁰⁷

In the US, however, the Department of Agriculture (USDA) and the Federal Trade Commission (USFTC) rejected a petition from a collective of US and Indian civil society organizations that demanded prohibition of the use of “Basmati” in relation to US grown rice.³⁰⁸ The USFTC and the USDA reasoned that “Basmati” is deemed a generic term, and that the labelling of a rice as “American-grown Basmati” is not misleading.³⁰⁹ In the wake of RiceTec’s patent filing, the US Rice Federation also issued a communiqué stating that “the terms basmati and jasmine refer to types or generic classes of aromatic rice ... Additionally, these terms are not restricted to products or varieties produced in any specific country or group of countries.”³¹⁰

Had GIs protection been extended to Basmati rice before 1998, the legal costs and expenses associated with protesting and opposing RiceTec’s infractions would have been minimal.³¹¹ Indeed, a higher level of GIs protection for Basmati at the international level

³⁰⁷ See *Code of Practice, ibid*, at 3.2; also see note 145, Chapter 5 at 89.

³⁰⁸ See Rangnekar & Kumar, “Genericity”, note 151, Chapter 5.

³⁰⁹ Note 145, Chapter 5 at 101.

³¹⁰ See Siddhartha Prakash, *Case study: India* (Geneva: World Trade Organization, 1998) online: GRAIN <<http://grain.me.uk/a/1783>>.

³¹¹ See Michael Blakeney, “Proposals for the International Regulation of Geographical Indications” (2001) 4J World Intell Prop 629 at 647[*Proposals*] (Arguing that “the resolution of [Basmati rice] dispute would have been simpler had GIs regime been in place in the countries in which protection for these brands was sought”).

– a degree of protection similar to that extended to wines and spirits – would have prevented the use of the label “American-grown Basmati.”³¹² In this sense, GIs protection may prevent the misuse of the indication by outsiders who intend to benefit from the market share of a TKBAP by “replicating” it through biotechnological processes.

The discussion in Chapter Three demonstrates that in addition to the problems of biopiracy, food insecurity, and biodiversity degradation, technology-based agri-food intervention in a traditional agricultural economy increases the threat of cultural homogenization among ILCs.³¹³ In the agricultural economies of most developing countries, cultural homogenization occurs through global economic pressures that result in the “delinking” of people from their territories, and in the standardization of traditional production methods.³¹⁴ Assessing the applicability of GIs in developing countries involves, therefore, understanding the role of GIs in responding to the problem of cultural homogenization.³¹⁵ The following Section briefly considers the impact of GIs in cultural spheres in the process of globalization.

³¹² The TRIPS Agreement prohibits the use of an indication for wines and spirits even with such measures as the use of clear indications of the true geographical origin of the product in question. In the use of “American-grown Basmati,” even though the true geographical origin is known for being “American,” it would be a violation of the GIs rights of Indian producers of the rice. See TRIPS Agreement, note 13, Chapter 1, Art. 23.1.

³¹³ See For detailed exploration of the problem of “cultural homogenisation,” see Chapter 3 Section 3.3.4 above; also see, generally, N Ben Fairweather & Simon Rogerso, “The Problems of Global Cultural Homogenisation in a Technologically Dependent World” (2003) 1 *Info, Comm & Ethics in Society* 7–12.

³¹⁴ See discussion above, Chapter 3, Section 3.3.4.

³¹⁵ The limitation in the use of GIs to prevent biopiracy are discussed in the context of general considerations that should be taken into account in adopting GIs in developing countries, in Section 5.10 below.

6.8 GEOGRAPHICAL INDICATIONS AND CULTURAL HOMOGENIZATION

The protection of GIs in developing countries may constitute a response to the challenges that the process of globalization poses in cultural spheres.³¹⁶ One way GIs may contribute to the goal of cultural protection in a homogenizing global context relates to the opportunity they provide in preventing the shifting of production activities from the local to the global environment.³¹⁷ In the use of GIs, ILCs maintain a product's positive attributes through the delimitation of the production area and adherence to local norms of production.³¹⁸ Large-scale producers in the area are restricted from adopting globally standardised methods of agricultural production that may deviate from locally and culturally oriented methods of production. Where other producers adopt the traditional techniques of production, GIs protection does not extend to productions outside the area of origin.³¹⁹ Given the cultural context of local systems of production, therefore, the

³¹⁶ See discussion regarding the use of GIs as instruments of cultural protection in the EU context in Chapter 5, Section 5.5.2; Also, see Albrecht Conrad, "The Protection of Geographical Indications in the TRIPS Agreement" (1996) 86 Trademark Rep. 11 (stating "it is important to understand that those countries which have a strong tradition of recognising geographical indications are not only concerned about the economic consequences of a dilution of their geographical names, but also about part of their 'cultural heritage'."); Broude, note 138, Chapter 1 at 648 (noting that the role of GIs is particularly important in the agricultural sector, as they protect "the integrity of national food icons that construct identity" amid concerns over technology-driven transformation.); Daniel Gorman, "Geographical Indications, Mobility, and Identity" (Paper presented at the annual meeting of the Theory vs. Policy? Connecting Scholars and Practitioners, New Orleans Hilton Riverside Hotel, The Loews New Orleans Hotel, New Orleans, Feb 17, 2010); see contra. Broude, note 138, Chapter 1 at 18 ff.

³¹⁷ Vittori, "International Debate" *supra* note 124.

³¹⁸ See Gavin Fridell, "Fair Trade and Neo-liberalism: Assessing Emerging Perspectives" (2006) 33 Latin Am Persp 20-21; Vittori, "International Debate" *supra* note 124 at 306.

³¹⁹ Downes, note 320, Chapter 4, at 273 (noting that "if an owner of a vineyard and winery qualified to use an AOC for the Medoc region of Bordeaux sells the business and land to another, the buyer will not be allowed to use the AOC without maintaining the required practices. The AOC can never be transferred outside the Medoc region"). Also, *ibid* at 306 (arguing big corporations are restricted from "capturing" the added-value of traditional products and related methods through the appropriation of these techniques and the production of the goods).

protection of GIs through requirements of locality contributes to maintaining cultural diversity in the face of globalization.

In addition, GIs provide economic security to ILCs in an identified territory, resulting in “more sustainable re-linking of society and nature.”³²⁰ The economic revitalization of a rural community may stem the tide of relocation and migration of ILCs from traditional lands for improved income opportunities in other locations. Because of economic benefits based on territory-based production systems, the protection of GIs could contribute to the “re-linking [of] production to cultural ... aspects of particular places.”³²¹

The discussion in the preceding Sections shows that the applicability of GIs to protect TKBAPs can be established from their contributions to the economic, social and cultural welfare of ILCs. Developing countries that have started GIs protection in a limited way show significant gains in economic value.³²² The discussion in the previous Sections also shows that the implementation of a carefully designed GIs system contributes to the realization of objectives in biodiversity and socio-cultural policies.

Despite the significant role that GIs may play in developing countries in multiple policy dimensions, a number of limitations should also be acknowledged. These limitations do not invalidate the conclusion drawn regarding their significance to

³²⁰ Barham, “Towards,” note 273, Chapter 3, at 351.

³²¹ Boisvert, *supra* note 55 at 30; also see Raustiala & Munzer, note 18, Chapter 1, at 365 (noting that GIs can be an attractive tool to preserve “the place of tradition and locality in a world that seems...to be ever more homogenous and borderless.”); Molly Torsen, “Apples and Oranges (and Wine): Why the International Conversation Regarding Geographic Indications is at a Standstill” (2005) 87 *Journal of the Patent & Trademark Office Society* 31.

³²² See discussion in Section 6.4.2.1 above.

achieving objectives identified in economic, biodiversity and socio-cultural policies. Given the multifaceted threats and challenges to TK systems and practices, however, expectations from the implementation of GIs should be clearly outlined. For this reason, the following Section identifies limitations to the applicability of GIs, and raises considerations to take into account in attempts to realize the objectives of their implementation.

6.9 LIMITATIONS AND CONSIDERATIONS IN THE USE OF GEOGRAPHICAL INDICATIONS

Two major limitations can be identified in applying GIs as a model to protect TKBAPs. The first relates to the nature of protection GIs provide in the broader context of TK protection. The second limitation, more of a technical challenge, relates to difficulties that may occur in implementing GIs in cases of trans-border, and geographically scattered areas of production.

Regarding the protection of TK, the analysis in the previous Sections shows that GIs play a role in discouraging biopiracy in the specific context of TKBAPs.³²³ In strict conceptual terms, it can be said that GIs do not protect TK; rather, they protect reputation attached to indications of products that result from TK-based practices essentially attributable to a geographical area.³²⁴ A product covered under GIs may be produced outside the area of GIs protection using the same TK-based production methods, although

³²³ See above Section 6.8.

³²⁴ Okediji expresses a similar view, stating: “while GIs may be used to protect traditional products or crafts, they do not protect the knowledge, or the technologies embracing that knowledge, as such.” See Ruth L. Okediji, *Geographical Indications in the WTO and EPA*, Paper for Training on Legal Aspects of Trade Policy, Regional and Multilateral Trade Negotiations for the West African Region, Accra, Ghana, 8-12 November 2010).

the product might not be marketed under a name or indication which corresponds to, or which suggests association with the specific geographical origin.³²⁵ In addition, the protection of GIs cannot be granted to a TKBAP without a description of the traditional production methods which are shared among agricultural producers in a specific geographic area.³²⁶ Under these circumstances, GIs may not provide the optimal protection for TK-based methods of production that the relevant community may want to keep confidential.³²⁷

The role of GIs should not be overstated to the degree that they supplant more effective modalities of protection that are attuned to prevalent forms of biopiracy and misappropriation of TK.³²⁸ The discussion in Chapter Four shows that in the broader framework of TK, diverse modalities of protection have received considerable attention in international law-making.³²⁹ The limitation of GIs in the broader framework of TK protection underscores the suitability and preferability of *sui generis* modalities of protection based on the customary rules and protocols of ILCs, without discounting the

³²⁵ Perhaps a GI-product may be produced in other regions if the product becomes generic because the GI protection is not adequately maintained.

³²⁶ See Boisvert, *supra* note 55 (cautioning that GIs may not be effective to prevent biopiracy).

³²⁷ For discussion on aspects of TK protection in which the issue of confidentiality acquire prime importance, see Darrell A. Posey “Commodification of The Sacred Through Intellectual Property Rights” (2002) 83 *Journal of Ethnopharmacology* 3-12 ; Robert K. Paterson & Dennis S. Karjala, “Looking beyond Intellectual Property in Resolving Protection of the Intangible Cultural Heritage of Indigenous Peoples Symposium: Traditional Knowledge, Intellectual Property, and Indigenous Culture” (2003) 11 *Cardozo J of Int’l & Comp L* 633-670; also, see Chapter 4 Section 4.6 above, for discussion of the different models of protecting TK.

³²⁸ Some of those systems that are more attuned to the most rampant aspects of biopiracy are discussed in Chapter 4 Section 4.6.3; see Vandana Shiva, “The Basmati Battle And its Implications for Biopiracy and TRIPS”, online: <<http://www.globalresearch.ca/articles/SHI109A.html>> (decrying increased advocacy for GIs systems, instead of other more effective systems as a “blind alley of Geographical Indicators”).

³²⁹ See Chapter 4 Section 4.6 above.

potential of GIs in specific knowledge production arenas, namely, TKBAPs. GIs can be part of a general strategy of protecting TK, but they should not be construed as stand-alone solutions to the multifaceted challenges to TK systems.³³⁰

The physical geographical link required as a condition for GI protection raises yet another concern. Three scenarios of practical importance can be identified in this regard. First, it can be difficult to provide GIs protection for agricultural products that are produced in different places. For example, milk acquired from traditional dairy production in a geographical region may be used for traditional cheese production in another geographic region. In this case, several ILCs in different geographic regions might be involved in the production process of the final product.³³¹ Second, the protection of GIs follows the production history of a product based on ecological and cultural rather than political boundaries.³³² As a result, agricultural producers in two countries that share identical physical and human environments may produce a product in trans-border territories. Typical examples in this case are Basmati rice and Punjabi Lassi, both of which come from the Punjab State in India and the Punjab State in Pakistan.³³³

³³⁰ See discussion of the multifaceted challenges to TK systems in Chapter 3 in general, and Section 3.2.2. in particular.

³³¹ Complicating the issue, several aboriginal groups may claim ownership over the same or similar knowledge and may differ as to how productions based on this knowledge should be protected or shared. See Susette Biber-Klemm et al, “Origin and Allocation of Traditional Knowledge and Landraces” in Biber-Klemm, S. and Cottier, T., (eds.), *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (Wallingford: CABI, 2006) at 161.

³³² See Elizabeth Barham, “The Lamb that Roared: Origin-Labeled Products as Place-Making Strategy in Charlevoix, Quebec” in C. Clare Hinrichs & Thomas A. Layson, eds, *Remaking the North American Food System: strategies for Sustainability* (Lincoln: University of Nebraska Press, 2007) at 281.

³³³ See S.K. Soam, “Analysis of prospective geographical indications in India” (2005) 8 J World Intell Prop 679.

Thirdly, the physical link between attributes of the product and the place of origin, which may have existed at the start of the production of the agricultural good, and which may have served as a basis of protection, may subsequently be weakened to the point where its existence is difficult to prove for different reasons.³³⁴ For example, members of the traditional community may keep the TK-based methods of production, but they may move to another location due to the availability of transport, electricity, financial services, and other facilities. In addition, traditions in manufacture and skilled staff can be shifted from one geographic area to another, in view of the increasing mobility of human resources as part of the globalization process.³³⁵ As Soam notes, the translocation of traditional production methods associated with a GI product usually accompanies the mobility of economic agents – producers, consumers, and visitors.³³⁶ The requirement of geographic connection as part of GIs protection for a product, would mean that cultural practices and traditional methods of production might not be protected if people move to a place away from their original place.

The requirement for geographical link in the protection of GIs in the aforementioned scenarios presents both an opportunity and a challenge in the use of GIs to protect TKBAPs. In cases where a product involves two or more geographical areas of

³³⁴ WIPO, *Intellectual Property Handbook: Policy, Law and Use* (Geneva: World Intellectual Property Organization, 2004), para. 2.727.

³³⁵ *Ibid.*, para. 2.727; also see Michelle Agdomar, “Removing the Greek from Feta and Adding Korbel to Champagne: The Paradox of Geographical Indications in International Law” (2008) 18 *Fordham Intell Prop Media & Ent L J* 541; Pascal Morand, *Globalization: The Need for a New Perspective* (Report of the International Working Group on Globalization, Paris, 2008).

³³⁶ S.K. Soam, “Analysis of Prospective Geographical Indications in India” (2005) 8 *J World Intell Prop* 679, observing that “it is a widely accepted fact that whenever people go to other places they bring along some product (such as sweets, textiles, handicrafts, artifacts, etc.) that has a specific reputation due to its association with its place of origin.” Cited in Oguamanam, “Digital Capture”, *supra* note 114 at 526.

production, the requirement of geographical origin can be satisfied through structural flexibilities that exist within the system of GIs. The link between a product and its location may be satisfied through the fulfillment of different requirements as the bases of protection. A WIPO study on the domestic implementation of GIs reveals that the requirement of geographic origin may include specific criteria such as:

- [A]ll stages of production (raw material, processing and preparation) must be in the designated area;
- the raw material (e.g. grapes) must have originated in the area in question (except in some cases of tolerance concerning a small proportion from another area);
- the stage of production which gives a product its distinctive character must have occurred in the area (e.g. for spirits);
- at least one of the stages of production has occurred in the area.³³⁷

As this study indicates, requirements for a link between physical territory and the production of the GI product can be fulfilled in many different ways. GIs legislation may provide for varied requirements on the stage/mode/input of the production to establish geographic origin. For example, the European Council's Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI) systems protect different types of products based on the different levels of attachment that each may have to its geographic territory.³³⁸

³³⁷ WIPO, *The Definition of Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Ninth Session, Geneva, November 11 - 15, 2002) Sct/9/4, para. 26.

³³⁸ Protection under PDO requires that all of the "production, processing and preparation" of the product should take place in the defined geographical area; whereas in PGIs, the requirement is that either the production, processing or preparation should take place in the area that the geographical name designates. The TSG option accommodates products that are reputed for their traditional character and, which may not qualify for protection under the category of either PDOs or PGIs. See discussion in Chapter 5, Section 5.5.2.

Due to various factors, members of ILCs may shift their territory of production from an area that was covered under GIs protection.³³⁹ The analysis of the nature and scope of GIs protection in the previous Chapters indicates that physical geographic factors, such as soil and climate, do not constitute the sole bases for GIs protection.³⁴⁰ As such, physical location is not, and need not necessarily be a sole criterion for the protection of some GIs.

The EU's *sui generis* system of GIs contains the solution to the problem of geographic restrictions in the case of communities that might have migrated across geographic distances, and yet, retained their practice of TK. Among the three different forms of GIs protection in the EU – PDO, PGI and TSG – the EU regime uses the TSG model to protect a product that has a “specific character” that is not attributable to geographical factors in a specific origin.³⁴¹ As recently pointed out in the Czech Presidency High Level Conference on the Future of Agricultural Product Quality Policy, new EU Member States have shown a strong preference for TSGs due to “historical factors – forced

³³⁹ See Dawn Chatty & Marcus Colchester, *Conservation and Mobile Indigenous Peoples: Displacement, Forced Settlement, and Sustainable Development* (Colchester: Berghahn Books, 2002).

³⁴⁰ See discussion above, Chapter 2 Section 2.6; Chapter 5 Sections 5.3 and 5.5.3.

³⁴¹ Art. 2.1 (c) of the EU Regulation 509/2006 defines TSG as “a traditional agricultural product or foodstuff recognized by the Community for its specific character through its registration under this regulation.” It further clarifies each element of the TSG, defining the term traditional as “proven usage on the Community market for a time period showing transmission between generations.” “Specific character” is defined as “the characteristic or set of characteristics which distinguishes an agricultural product or a foodstuff clearly from other similar products or foodstuffs of the same category.” The “characteristic or set of characteristic” are described as relating to “the product's intrinsic features such as its physical, chemical, microbiological or organoleptic features, or to the product's production method or to specific conditions that pertain during its production.” Unlike PGI and PDO, the specific character that a product possesses is derived not from the geographical origin, but from the “traditional raw materials or ... a traditional composition or a mode of production and/or processing reflecting a traditional type of production and/or processing.” Thus, TSG does not refer to the geographical origin but highlights the traditional character of the good – either in the composition or means of production. See EC Regulation No 509/2006, note 86, Chapter 5, Art 2.1 (a) & (b), Art 2.2., Art 4 .1, Art. 4.2 & Art 5.1; also see Chapter 5 Section 5.5.2.

immigration...after the Second World War.”³⁴² Developing countries that are wary of the impact of geographic restrictions in GIs due to mobility of human resources and skills, should adopt stratified GIs regimes that will allow them to choose the appropriate modalities for specific products on a case-by-case basis.

In most TK-based agricultural practices, agricultural production is essentially dependent on land-based activities.³⁴³ With economic benefits as incentives, geographic restrictions in GIs protection prevent the dislocation and impoverishment of local communities in situations where foreign corporations may employ members of local communities in other locations, given the mobility of labour in age of globalization.³⁴⁴ In consideration of this, it is argued that “the impossibility of transferring geographical indications outside their regions of protection constitutes a major advantage in the context of traditional knowledge.”³⁴⁵

The final consideration in relation to geographical restrictions in GIs protection relates to issues of geographical delimitation in trans-border areas of production where the area

³⁴² *Draft Conclusions of Workshop B: EU Quality Schemes* (Czech Presidency High Level Conference on the Future of Agricultural Product Quality Policy, Prague, 13 March 2009) at 4.

³⁴³ See the definition and discussion of the concept of terroir in Chapter 5, Section 55.2.

³⁴⁴ For example, Sunder discusses a scenario in which a foreign corporation may hire members of an indigenous community away, and may begin to “produce ‘authentic’ work elsewhere, using that GI—and decimating the livelihoods of the traditional community left behind.” See Madhavi Sunder, “the Invention of Traditional Knowledge” (2006) 70 *Law & Contemp Probs* 97 at 116- 127.

³⁴⁵ S. Biber-Klemm et al, “New Collective Policies” in Biber-Klemm, S. and Cottier, T., (eds.), *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (Wallingford: CABI, 2006) at 252.

of production for a product involves the border of two states.³⁴⁶ The TRIPS Agreement does not cover the issue of how a GI for a product originating from two or more states can be protected. The TRIPS Agreement is only concerned with products “originating in the territory of a Member, or a region or locality in that territory.”³⁴⁷ In practice, the domestic protection of these products requires collaborative efforts and institutional coordination among the respective states. In the wake of RiceTec’s claims for patents and trademark protections over strains of Basmati rice, for example, India and Pakistan put aside their differences and sought joint registration of GIs on Basmati rice in foreign markets.³⁴⁸

6.10 CONCLUSION

This Chapter examined the applicability of GIs to protect TKBAPs in developing countries. Despite their roots in European historical, cultural and legal traditions, GIs may be instrumental to developing countries as they respond to prevailing challenges in their agricultural economies. The discussion in this Chapter shows that GIs, properly designed and implemented, can be used to serve broad objectives set out in economic, biodiversity, and socio-cultural policies.

³⁴⁶ See generally, Rangnekar & Kumar, “Genericity”, note 151, Chapter 5; Andreas Auer, “Legal Implications of Accession to the European Union on Geographical Indications and Designations of Origin for Agricultural Products and Foodstuffs” (2008) 2 Croatian Yearbook of European Law and Policy 137.

³⁴⁷ See TRIPS Agreement, note 13, Chapter 1, Art. 22 (1).

³⁴⁸ See discussion, above, in Section 5.8.

In economic terms, the implementation of GIs in developing countries may present a significant challenge as to introducing, establishing and enforcing the rights.³⁴⁹ However, the costs of some of these efforts may be minimal as GIs, in particular *sui generis* forms of GIs, allow for increased participation and collaboration of multi-stakeholders at the introduction and operational stages of their implementation. The implementation of GIs empowers ILCs to work towards greater economic development through long-term initiatives that facilitate cooperation and coordination among themselves, public authorities, producer associations, and development groups.³⁵⁰

Beyond economic benefits, the significant contribution of GIs lies in their use as instruments for contextualizing policy developments to prevent biopiracy, achieve food security and protect bio-cultural diversity. GIs provide the incentives that enable ILCs to maintain production methods that incorporate collective traditions and collective decision-making in biodiversity management. The use of GIs as a means of recognizing the contribution of ILCs to the conservation and improvement of TKBAPs also serves the goals of food security. In the effort to achieve food security, GIs can serve as efficient instruments to integrate the goals of food sovereignty in agricultural policy. In addition, the discussion in this Chapter has shown that GIs can be instrumental in preventing aspects of biopiracy and misappropriation of TKBAPs.

³⁴⁹ See TRIPS Agreement, note 13, Chapter 1, Art. 24.9: There shall be no obligation under this Agreement to protect geographical indications which are not or cease to be protected in their country of origin, or which have fallen into disuse in that country.

³⁵⁰ E. Mathias, P. Mundy & I. Köhler-Rollefso, “Marketing Products from Local Livestock Breeds: An Analysis of Eight Cases” (2010) 47 *Animal Genetic Resource* 59-71.

The last part of the Chapter focused on the limitations and difficulties that may be encountered in implementing GIs to protect TKBAPs. GIs may have a limited role in the broader epistemological context of TK protection and, hence, the need for a holistic approach to TK protection based on diverse modalities. Given the requirement for a geographical link in the protection of GIs, difficulties may arise in extending such protection to TKBAPs in geographically scattered areas of production. The discussion has shown that the choice of GIs as a modality to protect TKBAPs should, therefore, be based on considerations relating to the scope and nature of protection that can be achieved, and the goals and purposes for adopting GIs in relation to specific products.

Given the significant role and impact of IP in the global knowledge economy, the search for creative ways to protect the knowledge systems of ILCs should encompass an inquiry into different forms of IP based on the nature and use of the knowledge. Under the rubric of IP, GIs provide opportunities for protecting the knowledge and practices of agricultural communities in relation to products that primarily have commercial value. From this background, the following Chapter makes concluding observations, and summarizes suggestions for future work in the use of GIs to protect TKBAPs.

CHAPTER 7 CONCLUSION

MAPPING FUTURE DIRECTIONS IN THE USE OF GEOGRAPHICAL INDICATIONS TO PROTECT TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS

7.1 INTRODUCTION

This concluding Chapter integrates the findings in the various Chapters of the thesis. The discussion in this Chapter revisits some issues addressed in the preceding Chapters in order to map future directions in the use of GIs as models for protecting TKBAPs. As evidenced by discussion and findings throughout the thesis, some of the issues are complex and in a state of flux. As such, it can be difficult to develop integrated theoretical framework from the the discussion and findings. It is hoped that the views set forth in this Chapter and the accompanying recommendations would stir questions, and stimulate further legal and policy research in the areas covered.

Section 7.2 sums up the main arguments and findings of the thesis. The discussion in Section 7.3 identifies and suggests future research and action in the area covered in this work, that is, the design of an effective and collectively beneficial GIs regime to protect TKBAPs. The discussion in this Section is divided into two sub-sections. The first points to proposals and recommendations that may be pertinent to negotiations and discussion of GIs and TK at the international level. The second part offers perspectives on how legislation, policy, and initiatives for the protection of TKBAPs at the national level could be shaped in response to the analysis and conclusions of this study. Finally, Section 7.4 offers concluding remarks concerning the hypotheses set out at the beginning of the thesis.

7.2 SUMMARY

The discussion in this thesis addressed general issues on the relationship between IP, TK, and biodiversity as background to the specific research question, which is whether GIs can be deployed to protect TKBAPs. The discussion in Chapter Two showed the diverse ways of conceptualizing TK through a study of the closeness and interconnectedness of ILCs with their surrounding physical environment.

Chapter Two demonstrated that the protection of TK involves “positive” and “defensive” aspects of “protection” depending on the policy justification for the type of “protection” pursued. Where the policy decision is to utilize GIs as IP-based models of protection, the analysis in this thesis shows that the positive and defensive aspects of protection may contribute to protecting TK by preserving its social, economic, cultural and biodiversity contexts so that the knowledge continues to guide and sustain the life of ILCs. The objective of protection of TK is, in this respect, the recognition of the contribution of TK systems to the conservation and maintenance of biodiversity. The abundance of biodiversity and its components in the form of TKBAPs attests to the need for this recognition.

There is currently a growing interest in, and demand for the protection of TK in the international IP system. The discussion in Chapter Three shows that imperatives for the protection of TK arise from recent realizations of the significance of TK, as well as from apprehensions of the impacts of global economic pressures on TK systems. The protection of TK is seen not only in a utilitarian sense of preserving its ecological and

economic benefits. It is also seen in terms of addressing the concerns, needs and expectations of ILCs that develop, maintain and practice TK as their way of life.

TK systems face diverse and far-reaching challenges. Challenges occasioned by the loss of genetic diversity, reduction in the prices paid for traditional agricultural products, and the crisis in traditional production models arise mostly from changing trends in the global economy. More than at any other time, the power and influence of participants in the current evolution of the global economy are felt through their ability to generate, share, and utilize knowledge. This is because knowledge has become the most important element of transactions in today's international trade. The discussion in Chapter Three demonstrates the prominent role of IP instruments in this scenario, as well as the failure of conventional forms of IPRs to account for the knowledge systems of ILCs. As Chapter Three shows, some of the challenges that ILCs face are induced by the globalization of IPRs through the institutional enforcement of private rights under the TRIPS Agreement. The failure of IPRs norms and standards to accommodate TK has resulted in the loss by ILCs of confidence in the global IPRs regime under the TRIPS Agreement. Consequently, there has been some shift to other multilateral forums that deal with different aspects of IP to shape an equitable regime that would accommodate TK.

The role and impact of IP as instrument of protection has increasingly come under critical scrutiny as developing countries and advocates of their interests inquire whether, and how, IP may cater to the protection of TK and biodiversity. In recognition of the need to guide the continued and growing influence of IPRs in the global economy, current international efforts to protect TK and TKBAPs are exerted through different IP-related legal and policy frameworks. Chapter Four explores existing and proposed legal

mechanisms to protect TK and TKBAPs in the institutional setting of some of the frameworks. Initiatives to protect TK in these frameworks follow different approaches that incorporate distinct modalities. The diverse ways in which countries address the protection of TK in the international forums of IP law-making indicate the increased awareness and global acceptance of the significant value and contribution of TK systems to the dynamism of the global economy.

The major roadblocks to consensus regarding the protection of TK relate to differences in the nature and scope of protection evident in the distinct proposals. As well, disagreements over the extent to which various aspects of TK may be addressed in the respective institutions, and differences in the choice of modalities to protect the relevant aspects of TK, have posed challenges to the creation of an international system of TK protection. Variations in the contents and contours of various proposals sometimes reflect differences in legal tradition and in the contrasting instrumental logics of various “legal means” for protecting TK.

The discussion in Chapter Four demonstrates that the development of a *sui generis* system of defensive protection would provide a better and more comprehensive protection for TK. Despite existing variations, even in proposals for defensive protection of TK, WIPO and CBD consider a *sui generis* modality that is focused on cultural protocols that already exist within ILCs. The formulation of an internationally acceptable regime on TK protection in this manner, currently underway under the auspices of WIPO, is commendable.

At the same time, the discussion in Chapter Four shows the need for a shift in strategy towards a more focused approach to protecting aspects of TK in specific areas of practice. One of these is the need to properly respond to the disadvantages that ILCs bear in economic endeavours, and their expectation for a commensurate change in the current system. This change requires the recognition of instruments that facilitate ILCs' participation in global markets for agricultural products. Such an approach must be based on pertinent variations of the IP system that address ILCs' needs for cultural protection, and their expectation of economic benefits. On this ground, increased attention is now being paid to the role of GIs in addressing the socio-cultural concerns and the specific challenges that ILCs face in international trade as regards the economic value of their products. As the discussion in Chapter Four indicates, GIs have gained broad global acceptance and legitimacy in many forums as means of protecting TKBAPs.

The discussion in Chapter Five examines the unique position that GIs hold in the legal terrain of IP protection under different legal frameworks. The degree, scope, nature and form of GIs protection in national jurisdictions differ according to variations in historical, cultural and legal traditions. The protection of GIs is also complicated by differences in priority objectives, underlying policy rationales, and jurisprudential divides across jurisdictions. Chapter Five demonstrates that the rationales for the protection of GIs – at least those raised in the EU context – can be logically extended for application in developing countries because of similarities in the socio-economic, cultural and environmental imperatives that they accommodate and which are suitable to the protection of TKBAPs. Some of those imperatives are analyzed in Chapter Three.

The discussion in Chapter Five also affirms that the unique features of GIs make them amenable to the characteristics of TK. Given the suitability of GIs to accommodate the essential attributes of TK, considerations related to the preservation of local culture and the pursuit of rural development justify the use of GIs to protect TKBAPs. To a large extent, normative justifications for these considerations rest on theories of social planning in contemporary IP law and policy. Such justifications also rest on the “capabilities approach” from the field of development, and on theories of cultural economy and embeddedness in the field of economic sociology.

The application of the social planning theories is found in the thesis’s suggestion that the IP system ought to be formulated in a manner that fosters culturally-sensitive economic activities. This is explained by the theory of cultural economy that conceptualizes economic processes as being determined by cultural practices. Thus, it is argued, the market for TKBAPs should be constrained by consideration for socio-cultural values that a GI connotes. In initiatives for the use of GIs to protect TKBAPs, therefore, the theory of embeddedness finds expression in the proposition that legal rules for the protection of GIs should take account of considerations for the conservation of biodiversity, the protection of cultural identity, the achievement of food security, and the prevention of biopiracy. The capabilities approach is reflected in the suggestion that GIs protection, conceptualized in the proposed manner, results in ILCs’ self-sufficiency so that they are able to continue to preserve and appreciate their traditional lifestyle as a basis for their economic development.

Chapter Six examines in some detail the applicability of GIs to the protection of TKBAPs in light of the experiences and expectations of ILCs and developing countries.

This Chapter argues that the applicability of GIs to the protection of TKBAPs should be examined through an understanding of the opportunities, challenges and effectiveness of using GIs. Among others, the applicability and potential of GIs in developing countries can be examined in the context of the following considerations: Institutional and legal capabilities at national and local levels; organizational and structural capabilities of producer organizations and stakeholders; planning and management effectiveness of production and marketing; and considerations and constraints in enforcing and defending GIs rights.

The impact of GIs in various policy domains is crucial for decisions to implement GIs protection in national jurisdictions. In a relevant policy context, the protection of GIs may contribute to economic, biodiversity, cultural and food security objectives. Chapter Six also shows that the recognition of the limitations in the system of GIs is equally important to facilitate the achievement of identifiable objectives in the use of GIs to protect TKBAPs. These limitations are prominent in using GIs to prevent the various manifestations of biopiracy.

7.3 DIRECTIONS FOR FUTURE RESEARCH AND ACTION

The substantive discussion in Chapters Two to Six, as summed up in the preceding pages of this Chapter, shows that GIs can serve as a preferred model for the protection of TKABPs within a broad framework of IP, biodiversity and TK. In addition to their primary function as instruments of economic control, GIs provide policy contexts for protecting bio-cultural diversity, for achieving food security, and for preventing biopiracy. Regarding the use of GIs as modality to affirmatively protect TKBAPs, the

discussion in this thesis allows for some observations and recommendations for the way forward.

Given the cross jurisdictional nature of the thesis in the “global economy” frame of analysis, it is necessary to categorize the levels of analysis for the responses proposed. In this respect, I choose the phrase “thinking globally, acting locally” – wellknown in the context of the environment – to distinguish the analyses and actions advanced in this thesis for different jurisdictional levels.¹ The issues concerning modalities for TK protection and the instrumentality of GIs for protecting TKBAPs are examined in international forums for intellectual property law and policy-making. The different modalities and norms developed at the international level ultimately find expression in policy measures for the protection of TK and TKBAPs at the national level. These can be addressed through the actions of national governments, indigenous peoples’ governments, and local administrations. Thus, the proposed responses are directed to the international and national levels in the subsequent Sections 7.3.1 and 7.3.2 respectively.

7.3.1 GEOGRAPHICAL INDICATIONS AND TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS: RESPONSES AT THE INTERNATIONAL LEVEL

The discussion in Chapters Two and Four indicate that GIs have attracted significant interest from academics, ILC interest groups, and representatives of developing countries

¹ Adapted from the phrase, “think globally, act locally.” The phrase is attributed to the 1972 United Nations International Conference on the Human Environment held in Stockholm. Although the idea has materialized in many different ways since then, it was originally aimed at directing individuals to clean up their local environments with the ultimate goal of improving the health of the entire planet. See Timothy P. Yoshino, “Presidential Address* Thinking Globally, Acting Locally” (2006) 92 *Journal of Parasitology* 1129. Some have adopted variations of the phrase in the area of GIs and IP. See Charles R. Mcmanis, “Intellectual Property, Genetic Resources and TK Protection: Thinking Globally, Acting Locally” (2003) 11 *Cardozo J of Int’l & Comp L* 547; Anthony Taubman, “Thinking Locally, Acting Globally: How Trade Negotiations over Geographical Indications Improve Fair Trade Rules” (2008) *Intellectual Property Quarterly* 231.

in international law-making forums. The WTO, the WIPO and, more prominently, the FAO consider GIs as potential instruments for protecting aspects of TK. Based on the analysis and observations in this thesis, two major recommendations are made for future consideration of GIs to protect TKBAPs: Clarity in the concept of GIs and their underlying assumptions; and better protection of proprietary interests in GIs.

7.3.1.1 Towards Conceptual and Analytical Clarity on Geographical Indications

The TRIPS Agreement wrongfully categorizes GIs as “private property.” Despite this, the Agreement treats GIs in a different fashion from other IPRs. For instance, in the fields of copyrights, trademarks and patents, the concept of protection that the Agreement requires of WTO Members is practically the same in all countries.² In contrast, the Agreement does not require a uniform approach to the protection of GIs. Even the definition of GIs in the TRIPS Agreement is qualified by the phrase, “for the purposes of this Agreement.”³ This indicates that unlike other regimes of IPRs where the TRIPS Agreement provides unqualified definitions, GIs are defined in a context that may conform to the interests of ILCs as regards protecting TKBAPs.

In defining the concept of GIs, the TRIPS Agreement adopts the criteria of “quality, reputation or other characteristic” to describe the subject matters of GIs protection. These criteria correspond, somehow, to those of IP concepts represented by the terms

² See for example, Section 5 of the TRIPS Agreement, which lays out specific requirements of protection for WTO members: Art. 27 (Patentable Subject Matter), Art. 28 (Rights Conferred), Art. 29 (Conditions on Patent Applicants). In Copyrights, Section 1 stipulates similar requirements of protection; Art. 9 (2) (stipulating that “copyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such.”) Art. 12 (Term of Protection). See similar requirements of protection for trademarks in Section 2. See TRIPS Agreement, note 13, Chapter 1.

³ *Ibid.*, Art. 22 (1).

“indications of source,” and “appellations of origin” that are regulated under the WIPO treaties. As the discussion in Chapter Two demonstrates, the TRIPS Agreement thus broadly recognizes GIs as autonomous IP concepts that can be tailored to the basic attributes of most TKBAPs.⁴

It is, therefore, of the utmost importance that legal instruments for the protection of GIs recognize the conceptual boundaries of GIs as encompassing a range of creativity and innovation based on TK embedded in agricultural practices in a geographic location. The concept of GIs does not refer to just the name, sign or indication of a product. Rather, a GI directly denotes a product’s origin based on a name, sign or indication; as well, the identification connotes “quality, reputation or other characteristics” attributable to the product because of TK practice in a territory. Thus, TKBAPs are subject matters of both “connotation” and “denotation” in the case of GIs protection.⁵

A notable argument against the conception of GIs as autonomous forms of IP for protecting TKBAPs relates to the normative justifications for GIs under contemporary theories of IP. The oft-cited rationale for the protection of GIs is that primarily they protect consumers from confusion and limit their search cost, rather than protect the property rights of ILCs that use the indications.⁶ In this sense, GIs protection only serves the private interests of individuals or corporations who, through the commercial use of an

⁴ See Chapter 2 Section 2.7 & Section 2.8, for discussion of the criteria of GIs and the corresponding TK attributes; also see Chapter 5 Section 5.8.

⁵ See the distinction between and the relevance of “denotation” and “connotation” of GIs in the use of GIs for protecting TKBAPs in Chapter 2 Section 2.8; Chapter 5 Section 5.5.3.,

⁶ See Chapter 5 Section 5.5.3 & 5.10 for discussion of the theoretical justification for the protection of GIs.

indication that denotes the source of their goods and services, developed reputation for their products.

As the discussion in Chapter Two and Chapter Five shows, however, GIs are distinguished from private property rights on numerous grounds.⁷ Among others,⁸ GIs are distinguished from private property rights in the policy assumptions that motivate their protection, the cultural factors underlying their recognition, and the functional role assigned to their protection.

The policy assumption behind the protection of GIs is primarily motivated by the need to secure the proprietary interest of producers from a geographical area where topographical and human factors impart distinctive qualities to a product.⁹ GIs are a means of recognizing the proprietary interest of ILCs in an identified territory in and of themselves, even before they are invested with meaning resulting from market use to communicate the quality of TKBAPs to consumers.¹⁰ In conceptualizing the relationship between GIs and TK in the sense of GIs' instrumentality to protect TKBAPs, the "qualities, reputation or characteristics" a product acquires from a place, which the GI connotes, is a basis for GIs-based proprietary protection.

The thesis has argued that GIs, conceptualized as a form of IP protection for TKBAPs, accommodate the traditional practice of ILCs who, due to their intergenerational

⁷ See Chapter 2 Section 2.5 & Chapter 5 Section 5.5.3.

⁸ For the distinguishing features of GIs from IPRs, see text accompanying note 220, Chapter 2.

⁹ See Chapter 5 Section 5.10.

¹⁰ See Chapter 2 Section 2.8.

occupancy, are identified with a particular territory.¹¹ The connection of ILCs' knowledge systems and practices to their territories and resources underpins the use of GIs as a means of recognizing the proprietary interest of ILCs over TKBAPs. In this sense, the territorial features of TK embedded in an agricultural *landscape* lies at the conceptual core of GIs. The physical and human dimensions of "territoriality," represented by the French concept of *terroir*, typically define TKBAPs that are often named after the location.¹² This being the case, the scope and degree of GIs protection should be broad and strong enough to accommodate the agricultural economy of most ILCs to whom "placeness" is central to their land-based activities.¹³

In terms of functionality, GIs are often used as economic tools to pursue sustainable agricultural development through the pursuit of improved income opportunities for traditional agricultural producers.¹⁴ GIs do not only serve the economic purpose of denoting the source of a product as proponents of the information asymmetry theory contend to justify a minimal degree of protection for GIs.¹⁵ Beyond economic concerns,

¹¹ See Chapter 2 Section 2.2.4, above, for discussion of the relevance GIs in light of territorial features of TK.

¹² For discussion of the significance of the concept of "*terroir*" in relation to GIs, see text accompanying note 127, Chapter 5. Also, see detailed discussion of the significance of GIs in protecting TK linked to land-based agricultural activities in Chapter 2 Section 2.2.4; Chapter 5 Section 5.5.3; and Chapter 6 Section 6.9.

¹³ See Chapter 2 Section 2.4.

¹⁴ See Chapter 6 Section 6.3 for discussion of economic potential of geographical indications. Also, see Chapter 5 Section 5.5.2, below, for discussion of GIs as instruments of economic policy in the EU common agricultural policy.

¹⁵ For discussion of the theory of information asymmetry, often cited as a justification for the protection of GIs, see Chapter 5 Section 5.10; Chapter 6, text accompanying note 118.

GIs are relevant for the pursuit of “publicly-oriented” objectives that cannot be served under the neo-liberal rubric of the market economy.¹⁶

In a global economy in which economic goods cannot be separated from the cultural identity of their producers – as espoused by the “cultural economy” theorists – the functional role of GIs cannot depend on a purely economic rationale.¹⁷ We live in a postmodern economy in which economic processes are embedded in and constructed by cultural systems.¹⁸ This is why international trade rules on GIs should be re-embedded with socio-cultural and other considerations. This view is in step with the idea of embeddedness developed by Polanyi, in that it guides the global economy in a direction that responds to socio-cultural values.¹⁹ The conception of GIs advocated in this thesis integrates economic objectives with considerations for biodiversity, cultural identity and food security.

In the economic sphere, GIs address concerns that ILCs confront in the global knowledge economic order. In light of the imperatives for the economic revitalization of traditional agricultural economies – analyzed in Chapter Three – the economic impact of GIs implementation has significance in assessing their instrumentality for protecting TKBAPs. The limited experience in the use of GIs in developing countries, noted in Chapter Six, provides compelling evidence to suggest that the use of GIs may help ILCs

¹⁶ See Chapter 5 Section 5. 20.

¹⁷ See discussion in Chapter 1 Section 1.5 and Chapter 5 Section 5.10.

¹⁸ See note 108, Chapter 1; also, see discussion in Chapter 1 Section 1.5.

¹⁹ See Elizabeth Barham, “Translating Terroir: The Global Challenge of French AOC Labelling” (2003) 19:2 *Journal of Rural Studies* 127 at 130; Martin Hess, “‘Spatial’ Relationships? Towards A Reconceptualization of Embeddedness”(2004) 28 *Progress in Human Geography* 165-186.

to improve their position in the global market for TKBAPs. GIs offer promising potential for developing countries and ILCs, as consumers are becoming more interested in the history, culture, location and authenticity of the products they buy in the current postmodern era.

In addition, GIs may provide policy context for the pursuit of biodiversity objectives. In this respect, GIs can be distinguished from other market-based strategies that rely on deriving benefits for ILCs from increased commercialization of biodiversity.²⁰ The CBD advocates market approaches in respect of ABS arrangements, and fair trade and environmental labelling call for differentiation strategies. In contrast to these, the use of GIs allows ILCs to establish IP rights over their resources. As such, the conservation of biodiversity in the use of GIs can be achieved through control and enforcement of TK-based methods of production in terms that their observation is as a condition for the production and marketing of goods covered in GIs protection. Economic benefits derived from GIs protection may incentivize ILCs to embrace and recognize the value of biodiversity, its conservation and maintenance.

With respect to cultural considerations, ILCs face the threat of cultural homogenization on account of the economic processes of globalization.²¹ Given the strong association between agricultural products, territorial culture and the traditional practice of ILCs, GIs may serve as modality to recognize the rights of ILCs to own, develop, control, and use their ancestral lands in ways consistent with their cultural and

²⁰ See Chapter 6 Section 6.5.

²¹ See Chapter 3 Section 3.3.4.

social values. The requirement for the territorial attachment of TKBAPs to a specific location as a basis for GIs protection has significant implications for the “re-linking” of ILCs with the lands and territories which they have traditionally owned, or, otherwise occupied and used.²² The ability of ILCs to derive benefits from the products of their socio-culturally embedded and context-specific knowledge practices in a defined territory alleviates the concerns of migration, modernization and economic displacement.²³

On the question of food security, it has been shown that food security in today’s economy is best realized under the rubric of food sovereignty.²⁴ In the use of GIs as protective models for TKBAPs, GIs embrace the fundamental pillars of food sovereignty through their combination of measures for trade-based and production-based entitlements.²⁵ As such, GIs provide meaningful alternatives to the neo-liberal models of food security which focus on policies of “free-trade.”

In addition to their function to positively protect TKBAPs to attain the aforementioned objectives, GIs can also be used defensively to prevent biopiracy engendered by unauthorized appropriation of signs, names or designations of TKBAPs.²⁶ For the aforementioned rationales, it stands to reason that the contributions of ILCs to the global economy be recognized through a conceptualization of GIs as proprietary tools that empower ILCs to fairly participate in international trade.

²² See discussion in Chapter 6 Section 6.8.

²³ See Chapter 5 Section 5.5.3.

²⁴ See discussion in Chapter 3 Section 3.3.3 & Chapter 6 Section 6.6.

²⁵ See discussion in Chapter 6, text accompanying note 269.

²⁶ See discussion in Chapter 6 Section 6.7.

Under current rules of international trade, the highest level of GIs protection is afforded only to wines and spirits. The absolute degree of GIs protection for wines and spirits under the TRIPS Agreement prohibits the use of a GI or its translated form. This is so even with respect to such measures as the use of clear indications of the true geographical origin of the good in question. It is also the case regarding the use of the GI sign or term “accompanied by expressions such as ‘kind’, ‘type’, ‘style,’ ‘imitation’ or the like.”²⁷ In addition, the Agreement requires the refusal or invalidation of trademarks for wines or spirits that contain GIs that identify other wines or spirits in anyway.²⁸ By focusing on wines and spirits, the TRIPS Agreement does not accommodate the interest of developing countries and ILCs who sought for a higher level of GIs protection for their distinctive agricultural products, most of which are TKBAPs.²⁹

It should stand to reason that once the uniqueness of TKBAPs is properly conceptualized within the IP regime, the foregoing clarification should logically be followed by a consideration of how to appropriately protect products derived from TK. Consequently, it remains to be asked how stronger protection of GIs for TKBAPs can be achieved in international law. This matter is next considered.

²⁷ See TRIPS Agreement, *supra* note 13, Ch. 1 at Art. 23 (1).

²⁸ See *Ibid.* at Art. 23 (2).

²⁹ See the position of developing countries in the Uruguay negotiations regarding GIs in discussion above, Section 5.4; also see GATT Secretariat, *Communication from Argentina, Brazil, Chile, China, Colombia, Cuba, Egypt, India, Nigeria, Peru, Tanzania and Uruguay*, 14 May 199(GATT doc. MTN.GNG/NG11/W/71), Art 9.

7.3.1.2 Towards Better Protection of Proprietary Interests in Geographical Indications

In the international protection of GIs, the TRIPS Agreement lays down minimum standards for all agricultural products, including TKBAPs. As the discussion in Chapter Five indicates, this guarantees protection for GIs only in cases of “unfair competition” or “misleading of the public.”³⁰ Thus, the TRIPS Agreement does not offer an absolute degree of exclusivity of GIs protection on the basis of the underlying proprietary rights of ILCs over their TKBAPs.

This thesis has argued that the expectation for the use of GIs as models for protecting TKBAPs entails their recognition in a manner that can be defended against any form of misappropriation and exploitation by those outside entitled ILCs. Such protection allows ILCs who decide to use GIs for their participation in international trade involving their TKBAPs to better enforce and defend their rights.³¹ The protection also allows developing countries to reserve a number of potential geographical names for biodiversity in their territories. This is so that even if those names were not yet used as GIs, they could not, in the future, be used as trademarks in other countries. The latter is a consideration that WIPO adopted in its attempt to draft a new treaty over GIs.³² Given the TRIPS Agreement’s failure to accommodate the interests of ILCs and developing countries, the following suggestions are made to improve the current level of GIs protection to make it consistent with the proposed role of GIs as a model for protecting TKBAPs.

³⁰ See text accompanying note 50, Chapter 5.

³¹ See discussion in Chapter 6 Section 6.4.2.2.

³² See discussion in Chapter 5 section 5.3.

The WTO has overseen negotiations and discussion aimed at expanding the level of GIs protection under the TRIPS Agreement. As set out in its Preamble, the TRIPS Agreement aims to establish a predictable multilateral system of rules and disciplines for protecting IPRs.³³ WTO members already encounter confusion and practical difficulties when they seek to obtain GIs protection in other Member states. For the most part, this is due to the jurisprudential divide that accompanies the distinct forms of GIs protection. The hierarchy of protection available to products other than wines and spirits creates some gaps that add to existing difficulties and uncertainties in the protection of GIs. The TRIPS Agreement does not offer any rationale for the differential treatment; indeed, no such differentiation can be found in the subjects of protection for other IPR regimes that the Agreement covers.

The differential treatment of wines and spirits, in comparison to other agricultural products, is rooted in the range of compromises that were exclusively negotiated between the US and the EC as part of the final text of the Uruguay Round of negotiations.³⁴ Given the grounds offered to justify protecting TKBAPs, as discussed in Chapter Five, it is commendable that developing countries display a positive, yet cautious approach in their support for a higher level of GIs protection for all products.

However, it is necessary to ask whether the WTO is the appropriate forum to achieve strong protection of GIs in a manner that accommodates the desire of ILCs and developing countries to protect TKBAPs. A number of observations are relevant to this

³³ See TRIPS Agreement, *supra* note 13, Ch. 1, preamble, para. 1 (c) (emphasizing the “need for new rules and disciplines concerning... the provision of effective and appropriate means for the enforcement of trade-related intellectual property rights, taking into account differences in national legal systems.”)

³⁴ See Chapter 5 Section 5.4.

question. First, as shown in Chapter Four, the contested nature of the negotiation process for the TRIPS Agreement resulted in outcomes that do not accommodate developing countries' interests in general.³⁵ Second, the TRIPS Agreement wrongfully characterizes GIs as private property rights just like any other IPRs.³⁶ Third, despite the WTO's pledge to increase the participation of developing countries in its dispute resolution process, most developing countries do not have access to its expensive and complex legal system.³⁷ In addition, developing countries have limited role and influence in the WTO due to its consensus rather than vote-based decision-making.³⁸ Fourth, as an Organization that has "free-trade" as its *modus operandi*, it has proved difficult to embed biodiversity, cultural and ecological norms in the WTO Agreements in general,³⁹ and in the TRIPS Agreement in particular.⁴⁰ Finally, it has become apparent that the current negotiation in the WTO for

³⁵ See discussion in Chapter 4 Section 4.3.1; also see Thomas Cottier & Petros C. Mavroidis, eds, *Intellectual Property: Trade, Competition, and Sustainable Development* (Ann Arbor: University of Michigan Press, 2003) at 23 ff.

³⁶ See TRIPS Agreement, *supra* note 13, Ch. 1, preamble, para. 4; see also discussion in text accompanying note 217, Chapter 2.

³⁷ Since the establishment of the WTO, there are 400 cases submitted to the Dispute Settlement Body of the WTO. Only around thirty developing countries initiated one or more of these cases. See ICTSD, *The Challenge of Participating in WTO Dispute Settlement* (Presentation to the Informal Group of Developing Countries, 13 April 2011, Geneva) online: <<http://ictsd.org/i/events/dialogues/103446/>>.

³⁸ Although developing countries constitute a majority in the WTO, their interests in negotiations are usually affected by political weight of industrialized countries due to unrealistic expectation of consensus among the current 153 members for most decisions. See Carolyn Deere-Birkbeck, *The Implementation Game: The TRIPS Agreement and the Global Politics of Intellectual Property Reform in Developing Countries* (Oxford: OUP, 2008); Carolyn Deere Birkbeck & Meg Harbour, "Developing Country Coalitions in the WTO: Strategies for Improving the Influence of the WTO's Weakest and Poorest Members. A Working Paper Produced in Collaboration with the IDEAS Centre (2011).

³⁹ See Joost Pauwelyn, *Conflict of Norms in Public International Law* (Cambridge: Cambridge University Press, 2003); Richard H. Steinberg, ed, *The Greening of Trade Law* (Oxford: Rowman & Littlefield Publishers Inc., 2002); Oran R Young, *International Governance: Protecting the Environment in a Stateless Society* (Ithaca: Cornell University Press, 1994).

⁴⁰ See text accompanying note 220, Chapter 4; also see Valentina Tejera, "Tripping over Property Rights: Is it Possible to Reconcile the Convention on Biological Diversity with Article 27 of the TRIPS Agreement?"

stronger GIs protection has not achieved significant progress.⁴¹ From the nature of discussion since the launch of the Doha Round of negotiations, the prospect for compromise between proponents and opponents of a higher level of GIs protection does not seem promising.⁴²

For the above reasons, this thesis proposes that the feasible option that would make for stronger protection of GIs must come within the framework of negotiations for an overarching treaty for the protection of TK through institutional cooperation between the FAO, WIPO and the CBD. The discussion in Chapter Four shows that the CBD seeks the protection of TK through “cooperation” and “mutually supportive activities” with the FAO, WIPO and the WTO.⁴³ In addition, the FAO explores modes of implementing Farmers’ Rights in national and international legal forums.⁴⁴ Similarly, the WIPO General Assembly instructed the IGC to seek the protection of TK in “close cooperation with other international agencies and processes” in order to take into account the “full

(1999) 33 New Eng L Rev 967; S. K. Sreedharan, “Reconciling TRIPS with the Convention on Biological Diversity – Indian Perspective” (2004) 2 Business Briefing.

⁴¹ See the different position of WTO Members on the negotiation of GIs in Chapter 5 Section 5.4.2. See WTO, *Members Eye Path of ‘Smaller Steps’ as Way out of Doha Impasse*, (Trade Negotiations Committee: Informal Meeting, 21 October 2011, Geneva) online: WTO <http://www.wto.org/english/news_e/news11_e/tnc_infstat_21oct11_e.htm>.

⁴² See WTO, *Members Eye Path of ‘Smaller Steps’ as Way out of Doha Impasse*, (Trade Negotiations Committee: Informal Meeting, 21 October 2011, Geneva) online: WTO <http://www.wto.org/english/news_e/news11_e/tnc_infstat_21oct11_e.htm>; also see Stefania Fusco, “Geographical Indications: A Discussion on the TRIPs Regulation After The Ministerial Conference of Hong Kong” (2008) 12 Marquette Intellectual Property Law Review 197.

⁴³ CBD, *Cooperation with Other Organizations, Initiatives and Conventions*, COP 6 Decision VI/20, online: CBD <<http://www.cbd.int/decision/cop/?id=7194>>; see also Chapter 4 Section 4.3.3.

⁴⁴ See Secretariat of the ITPGR, *Third Session of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture* (Tunis, 1 – 5 June 2009) IT/GB-3/09/Report online: <<ftp://ftp.fao.org/ag/agp/planttreaty/gb3/gb3repe.pdf>>.

international context of” the protection of TK.⁴⁵ The IGC currently conducts “text-based negotiations” to achieve “effective protection” through the conclusion of an “international legal instrument (or instruments)” on TK.⁴⁶

As one of the instruments for protecting TK, the IGC should consider incorporating stronger protection of GIs as an option for protecting TKBAPs. This recommendation is particularly pertinent in the context of ongoing negotiations to review the Lisbon system under WIPO.⁴⁷ WIPO’s SCT is currently engaged in efforts to achieve agreement on the international protection of GIs. To date, no consensus has been reached regarding key issues considered pertinent to the establishment of a new treaty.⁴⁸ Similarly, the FAO is interested in GIs as potential instruments to remedy inequities in global commodity markets for TKBAPs.⁴⁹ In these circumstances, the idea of strong protection of GIs for TKBAPs is intrinsically linked to the broader context of international initiatives to protect TK in the WIPO framework. The proposal that the EC, the African, Caribbean and

⁴⁵ WIPO, *Genetic Resources: List of Options*, (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Eleventh Session, Geneva, July 3 to 12, 2007) WIPO/GRTKF/IC/11/8 (a).

⁴⁶ See WIPO, *Matters Concerning the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore: Agenda Item 31* (Assemblies of Member States of WIPO Fortieth (20th Ordinary) Session September 26 to October 5, 2011) online: <http://www.wipo.int/export/sites/www/tk/en/documents/pdf/decision_assemblies_2011.pdf>.

⁴⁷ See discussion in Chapter 5 Section 5.3 regarding attempts to create an agreement on GIs in WIPO through a review of the Lisbon Agreement. See also the latest results in negotiations over the review of the Lisbon Agreement to provide better protection for AOs. WIPO, *Outcome of Third Session of Working Group on the Development of the Lisbon System (Appellations of Origin)* Third Session, Geneva, May 23 to 27, 2011, LI/WG/DEV/3/3.

⁴⁸ See discussion in Chapter 5 section 5.3; also see WIPO, *Outcome of Third Session of Working Group on the Development of the Lisbon System (Appellations of Origin)* Third Session, Geneva, May 23 to 27, 2011, LI/WG/DEV/3/3, online: WIPO <<http://www.wipo.int/meetings/en/details.jsp?meetingid=22282>>.

⁴⁹ See Chapter 4 Section 4.8; also see FAO and Siner-GI, note 237, Chapter 2.

Pacific Group of States (ACP), and the African Group recently tabled in the WTO adopts this approach by linking GIs with the protection of TK.⁵⁰

It is discussed in Chapter Five that the concept of GIs evolved from the recognition of AOs in the Paris Convention and later, their elaborate protection under the Lisbon Agreement. WIPO has played a significant role in the development of the concept of GIs through the negotiations for, and in the revision of the treaties it administers.⁵¹ In addition, protection for AOs under the Lisbon Agreement applies equally to any category of product. This is unlike the TRIPS Agreement's distinction between wines and spirits vis-à-vis other products. For these reasons, stronger protection for TKBAPs under the text-based negotiations for TK protection in the WIPO's IGC seems more plausible. This recommendation is also consistent with a renewed interest, in recent times, in the Lisbon system due to the difficulty of moving the issue of GIs forward in the current negotiations in the WTO.⁵²

A relatively advanced negotiation regarding GIs in the WTO concerns the establishment of a multilateral system of notification and registration of GIs for wines and

⁵⁰ Trade Negotiations Committee, *Draft Modalities for TRIPS Related Issues: Communication from Albania, Brazil, China, Colombia, Ecuador, the European Communities, Iceland, India, Indonesia, the Kyrgyz Republic, Liechtenstein, the Former Yugoslav Republic of Macedonia, Pakistan, Peru, Sri Lanka, Switzerland, Thailand, Turkey, the ACP Group and the African Group* (19 July 2008), TN/C/W/52.

⁵¹ See discussion in Chapter 2 Section 2.7.

⁵² See for example, suggestion from Professor Gervais, former legal officer at the GATT and an acclaimed expert on IP and the TRIPS Agreement, proposing the use of the Lisbon Agreement to protect GIs "for at least some forms of traditional knowledge." Daniel Gervais, "Traditional Knowledge: Are We Closer to the Answers? The Potential Role of Geographical Indications" (2009) ILSA J of Int and Comp Law 551; Daniel J. Gervais, "The Lisbon Agreement's Misunderstood Potential" (2009) 1 WIPO Journal: Analysis and Debate of Intellectual Property Issues 87-94 (arguing for the "re-inventing" of the Lisbon system for a possible new role as a multilateral register in the negotiations mandated by Art. 23(4) of the TRIPS Agreement.) Also see Commentary by Francis Gurry, WIPO Director General, *Address at Ceremony to Mark the 50th Anniversary of the Adoption of the Lisbon Agreement*, 31 October 2008 online: WIPO <http://www.wipo.int/about-wipo/en/dgo/speeches/gurry_lisbon_08.html>.

spirits. The latest report from the Special Session of the WTO TRIPS Council indicates that the negotiation for setting up a multilateral register for GIs rights for wines and spirits has resulted in a complete draft text on the GI register.⁵³ It is apparent that further consultations will be needed to narrow the numerous differences among the negotiators. This is evident in the draft text, most of which is in square brackets.⁵⁴

As far as the proposal for the use of GIs to protect TKBAPs is concerned, this thesis argues that negotiations to establish a multilateral register of GIs rights should not be isolated from the agenda for an expanded protection for GIs. Indeed, the register should not be restricted to “wines and spirits.” As the analysis in Chapter Six indicates, better protection for GIs through the establishment of a multilateral register at the international level would help developing countries to better enforce and defend GIs rights should they decide to protect their TKBAPs through GIs.⁵⁵ By virtue of its mandate in other IPRs regimes, WIPO ensures the enforcement of IPRs among parties to the treaties it administers, such as the Patent Cooperation Treaty. Consistent with this, WIPO can serve as an appropriate forum for enforcing GIs rights through reform of its registration and notification system.⁵⁶ WIPO can provide for an international registration system of GIs,

⁵³ Council for Trade-Related Aspects of Intellectual Property Rights, Special Session, *Multilateral System of Notification and Registration of Geographical Indications for Wines and Spirits: Report by the Chairman, Ambassador Darlington Mwape (Zambia) to the Trade Negotiations Committee* (21 April 2011) TN/IP/21.

⁵⁴ The square brackets in the draft text denote inconclusive outcome of the negotiations on numerous issues. See Council for Trade-Related Aspects of Intellectual Property Rights, Special Session, *Multilateral System of Notification and Registration of Geographical Indications for Wines and Spirits* (20 April 2011) JOB/IP/3/Rev.1.

⁵⁵ This view is also shared by the joint proposal to the WTO regarding GIs, submitted by the EU, ACP, African Group, et al, *supra* note 9; see also text accompanying note 200, Chapter 6.

⁵⁶ See “WIPO-Administered Treaties” in WIPO: <<http://www.wipo.int/treaties/en/>>.

as called for by the TRIPS Agreement under Art. 23.4, given its experience in protecting AOs through a single registration and notification system.⁵⁷

7.3.2 GEOGRAPHICAL INDICATIONS AND TRADITIONAL KNOWLEDGE-BASED AGRICULTURAL PRODUCTS: RESPONSES AT THE NATIONAL LEVEL

The recommendations and suggestions set out above concern responses that could be considered as measures for better protection of GIs at the international level. In addition, such protection must also be framed within the appropriate legal frameworks at local, national, and regional levels. The discussion in this subsection is situated within the global economy frame of analysis to provide suggestions for action that can be utilized by a wide range of stakeholders in a national context. The recommendations and suggestions here would be of interest to various national actors, such as farmer and producer groups, indigenous peoples' governments, different levels of national governments, inter-governmental organizations, and non-governmental organizations. The discussion develops conceptual and practical guidance for the use of GIs for protecting TKBAPs along two lines: i) The choice of GIs as a modality for protecting TKBAPs; and ii) the choice of a legal means for protecting GIs once they are adopted as a modality for protecting TKBAPs.

7.3.2.1 Geographical Indications as Modality for Protecting Traditional Knowledge-based Agricultural Products

As far as the choice of GIs as a modality for protecting TKBAPs is concerned, initiatives for protecting TK should assess the applicability of GIs in the light of considerations that allow a better understanding of how the system of GIs works or does

⁵⁷ For similar suggestion, see Gervais, *supra* note 52.

not work. In this respect, the crucial question that policy-makers need to consider is how GIs achieve the goal of protecting TKBAPs without compromising TK systems and their underlying biodiversity. In the words of Daes, an acclaimed expert on indigenous peoples' rights and a driving force behind the United Nations Declaration on the Rights of Indigenous Peoples, policy measures for protecting TK should be guided by three principles: the principles of effectiveness, integrity, and locality.⁵⁸ This subsection assesses the instrumentality of GIs to protect TKBAPs in the light of these principles.

One of the principles by which the choice of GIs as a modality for protecting TKBAPs can be assessed is what Daes describes as the principle of effectiveness.⁵⁹ Effectiveness in protecting TKBAPs can be understood as a requirement that the chosen modality must be adequate to achieve the needs and expectations of ILCs in the global economy.⁶⁰ The discussion in Chapter Three identified threats and challenges that confront ILCs from two aspects of the global economy: threats from technology-driven transformation of local agriculture, and challenges for TKBAPs in global markets. These threats and challenges are generated by global economic pressures in which non-state actors – TNCs and other private corporate entities – are dominant.⁶¹ The effectiveness of GIs-based policy models

⁵⁸ Erica-Irene A. Daes, "Defending Indigenous Peoples' Heritage" (Keynote Address delivered at Protecting Knowledge-Traditional Resource Rights in the New Millennium, Vancouver, British Columbia, Canada 23-26 February 2000) at 5-7. See Dr Erica-Irene A. Daes' work on indigenous peoples' rights issues at <<http://sites.mgkworld.net/thesis08/daes.php>>.

⁵⁹ See *ibid.* at 6.

⁶⁰ See *ibid.*

⁶¹ See discussion in Chapter 3 Section 3.3 & 3.4; also see Robert Gilpin & Jean M. Gilpin, *Global Political Economy: Understanding the International Economic Order* (Princeton: Princeton University Press, 2001); Richard Higgott, Andreas Bieler & Geoffrey Underhill, *Non-State Actors and Authority in the Global System* (London: Routledge, 2004).

for protecting TKBAPs can be measured, therefore, in terms of the extent to which they achieve the needs and expectations of ILCs by responding to those threats and challenges.

An important consideration in the use of GIs as a modality for protecting TKBAPs arises from the case made in earlier Chapters to recognize the role of IP for protecting TK in limited circumstances.⁶² Based on conclusions drawn from the first part of the thesis in this regard, the effectiveness of GIs can be evaluated in terms of the scope of “protection” they offer in the following three ways: (i) Positive protection in allowing ILCs to participate in the global economy; (ii) Defensive protection in preventing the misappropriation and misuse of TKBAPs; and (iii) Protection in a non-IP context by contributing to the preservation and safeguarding of the social, economic, cultural and biodiversity contexts of TK.

In their positive protection of TKBAPs, GIs can be used as a means for recognizing the intellectual worth and value of TKBAPs in the market.⁶³ Indeed, the use of market-driven strategies has become more common as many ILCs are becoming more attuned to market dynamics than has generally been acknowledged in previous times.⁶⁴ Unlike the often-used fair trade and environmental labelling models, properly crafted GIs-based strategies may consolidate the power of ILCs to control their products and to have a say

⁶² See Chapter 4 Section 4.7 for discussion of the need for intellectual property-based protection of TK; see also Chapter 2 Section 2.9 for discussion of the contexts in which “protection” is considered in this thesis..

⁶³ See discussion of “recognizing the value of traditional knowledge-based agricultural products” in Chapter 3 Section 3.5.

⁶⁴ See discussion of differentiation strategies that some ILCs adopt to participate in international trade in Chapter 3 Section 3.6.

in the price determination process for their TKBAPs.⁶⁵ GIs may be used to positively protect TKBAPs in order to empower ILCs to optimize value for their products so that they could meaningfully participate in commercial transactions over TKBAPs. As Chapter Five demonstrates, the “positive protection” feature of GIs arises from the fact that, if conceptualised as proprietary rights, GIs allow ILCs to control TKBAPs, determine what use is made of the products, and decide the conditions for the provision of their products in the market.⁶⁶ Given the value and potential commercial viability of TKBAPs, a GIs model creates equitable power relations between outside commercial entities, namely, intermediaries and ILCs, so that the latter would engage in the sale of TKBAPs on their own terms.

In the course of international trade, TKBAPs that acquire strong market presence and broad brand recognition may be subjected to counterfeiting and usurpation by third parties. As the discussion in Chapter Six shows, TKBAPs, such as basmati rice, manoomin rice, and Antigua coffee may be targets of adulteration and falsification by, for instance, multinational companies that have modern and sophisticated marketing power.⁶⁷ In such cases, the protection of TKBAPs through GIs in the interest of ILCs may also protect the products against misappropriation by such “outsiders.”⁶⁸ This leads us to the

⁶⁵ See discussion in Chapter 5 Section 5.9 for discussion of GIs as Strategies of differentiation for traditional knowledge-based agricultural products. Also, see challenges and impacts of differentiation schemes in Chapter 3 Section 3.7.

⁶⁶ Lior Jacob Strahilevitz, “Information Asymmetries and the Rights to Exclude” (2006) 104 Michigan Law Review 1835. Also see Elizabeth Cooke, *Modern Studies in Property Law* (Oxford: Hart Publishing, 2001).

⁶⁷ See text accompanying note 187, Chapter 6.

⁶⁸ See Chapter 2 Section 2.9.

second yardstick for measuring the effectiveness of GIs for protecting TKBAPs, namely, their potential for defensive protection of TKBAPs.

The use of GIs for TKBAPs grants ILCs all the attributes of ownership of the GI, including the right to exclude others from its use.⁶⁹ Beyond their economic significance in recognizing and rewarding the value of TKBAPs in the market, therefore, GIs may be used to halt outsiders' appropriation of the economic and cultural values of TKBAPs.⁷⁰ In an increasingly globalized world, GIs allow ILCs to prevent the unauthorized and/or distorting use of TKBAPs by third parties through requirements for adherence to traditional methods of production and by placing restrictions on geographical boundaries of production.⁷¹ These requirements and restrictions deter exploitation of commercially significant agricultural products by large-scale commercial producers.⁷²

It is acknowledged that the defensive benefit of GIs is limited by the fact that the protection they offer applies to a product's identification, instead of the product itself.⁷³ However, this limitation does not discount the value of GIs because most landraces, wild species, and farmers' varieties are typically distinguished by their identifying designs, marks, names and symbols attached to a particular territory.⁷⁴ It is the association of

⁶⁹ See discussion in Chapter 4 Section 4.7; Chapter 5 Section 5.9 & Chapter 6 Section 6.4.2.2. Also, see Lior Jacob Strahilevitz, "Information Asymmetries and the Rights to Exclude" (2006) 104 Michigan Law Review 1835.

⁷⁰ See Chapter 6 Section 6.4.2.2; also see GIs and biopiracy in Chapter 6 Section 6.7.

⁷¹ See discussion in Chapter 6 Section 6.4.1 & Section 6.4.2.

⁷² See text accompanying note 110, Chapter 6.

⁷³ See Chapter 6 Section 6.9.

⁷⁴ See Chapter 1 Section 2.6.1.

TKBAPs with local territory, culture and tradition through those identifications that gives TKBAPs significant value in today's economy.⁷⁵ Corporations and individual commercial actors may be discouraged from producing a product in another location through patent-protected technological methods if the product loses its market value due to the prohibition of the use of direct or indirect indication that associates it to a territory and, therefore, to a "reputation, quality or other characteristics."

As discussed in Chapter Six, ILCs lose significant income from unauthorized appropriation of signs, names or designations of TKBAPs in relation to products originating from other locations.⁷⁶ The protection of GIs as a right that, in itself, is susceptible to appropriation in the manner proposed in this Chapter, disallows any mention of a protected GI – even through imitation – by a producer outside a territory⁷⁷

The final measure of effectiveness of GIs as a modality for protecting TKBAPs relates to their contribution to the preservation and safeguarding of the social, economic, cultural and biodiversity contexts of TK. As addressed in Chapter Six, the proper implementation of GIs contributes to generating economic benefits, preserving cultural identity, conserving biodiversity and achieving food security.⁷⁸ In this sense, GIs enhance ILCs' ability to choose and achieve their desired lifestyles in their own conceptions of development. According to Amartya Sen's entitlement approach, the ultimate objective of

⁷⁵ For more on this, see text accompanying 144, Chapter 6.

⁷⁶ See Chapter 6 Section 6.4.2.2 & Section 6.7.

⁷⁷ See discussion in Section 7.3.1.1, above.

⁷⁸ See Chapter 6 Section 6.3, Section 6.5, Section 6.6 & Section 6.8.

development is to contribute to the expansion of human autonomy and choice.⁷⁹ The use of GIs as a model for protecting TKBAPs enables ILCs to continue to preserve and appreciate their traditional lifestyles as bases for their economic development.⁸⁰ This, in effect, ultimately results in the preservation and maintenance of TK systems and biodiversity.⁸¹

According to Daes, “integrity” is another principle by which lawmakers, policy makers, and others at the national level should assess the choice of GIs as a modality for protecting TKBAPs. The principle of integrity requires that mechanisms for the protection of TK should maintain the whole of the set of relationships between ILCs and their TK systems and resources.⁸² In other words, a protection system for TKBAPs should accommodate the holistic nature of TK.⁸³

Recognizing the holistic feature of TK does not amount to devising a “one size fits-all” model for protecting TK.⁸⁴ As argued in Chapter Four, the recognition of the holistic context of TK entails identifying different instruments to address different aspects of

⁷⁹ See Chapter 1 Section 1.5; Chapter 5 Section 5.10.

⁸⁰ See Chapter 5 Section 5.10.

⁸¹ For discussion of the relationship between traditional lifestyles and the preservation of biological diversity, including biodiversity, see discussion in Chapter 3 Section 3.2.1.2; Chapter 4 Section 4.3.3.

⁸² See Daes, *supra* note 58 at 5.

⁸³ See discussion of the holistic features of TK in text accompanying note 117, Chapter 2.

⁸⁴ See discussion in text accompanying note 118, Chapter 2; also see Christophe Bellmann, Graham Dutfield, Ricardo Meléndez-Ortíz, *Trading in Knowledge: Development Perspectives on TRIPS, Trade, and Sustainability* (London: Earthscan, 2003).

TK.⁸⁵ It is impractical to seek effective legal protection in a holistic context for aspects of TK that ILCs use for participation in international trade.⁸⁶

GIs can serve as proper modalities for protecting TKBAPs in a holistic context of TK if they are used as culturally sensitive models to satisfy the economic needs of ILCs.⁸⁷ As previously argued, this requires the analytical construct of GIs as having a significant cultural role, rather than only purely economic ones.⁸⁸ Conceptualized as autonomous IP tools, GIs are structurally and functionally compatible with TK systems.⁸⁹ As such, GIs protect culturally relevant aspects of TK practice in agricultural production while simultaneously allowing for a pluralistic context for TK protection through ILCs' inward-looking cultural protocols.⁹⁰ This is why this thesis suggests that GIs must be part of an overarching model of TK protection based on ILCs' jurisprudence and their existing spiritual and cultural conventions.

The potential of GIs to co-exist with ILCs' TK systems speaks to the relevance and the utilization of another principle by which GIs are rendered instrumental for protecting TKBAPs: The principle of locality.⁹¹ As explained by Daes, this principle enunciates that

⁸⁵ See conclusion of Chapter 4 in Section 4.9.

⁸⁶ For discussion of the distinction between TK for internal use (among the communities) and for external use (outside of the communities), see text accompanying note 302, Chapter 4.

⁸⁷ See discussion in Section 7.3.1.1, above.

⁸⁸ See *ibid*; also see Chapter 5 Section 5.10.

⁸⁹ See Chapter 5 Section 5.8 for discussion of the compatibility between GIs and TK.

⁹⁰ For discussion of this approach to TK protection in relation to recent initiatives of WIPO, see text accompanying note 90, Chapter 4.

⁹¹ See Daes, *supra* note 58 at 5.

“every people’s territory is unique and has its own laws.”⁹² This can be construed as suggesting that measures to protect TK should be based on local jurisprudence and the customary laws of the ILCs in the concerned territory. The territorial link that exists between a product and its area of production is an essential factor in decisions to use GIs as a modality for protecting TKBAPs. As previously discussed, the very nature of a GIs system is dependent on the link between a product and the geographical location that is the basis for the product’s “quality, reputation or other characteristic.”⁹³

Within the realm of territoriality, GIs allow the incorporation of locally specific and traditional production methods. They also allow the evolution of locally unique farming techniques, food preservation methods, processing procedures, additives, packaging, etc., all of which contribute to the distinctive attributes of the product.⁹⁴ In this respect, GIs differ from the differentiation strategies of fair trade and environmental labelling that, as discussed in Chapter Three, introduce a homogenous set of certification practices that sometimes deviate from local practices and norms.⁹⁵ In contrast, a producer loses the right to use a GI if the production methods utilized deviate from the specified local

⁹² *Ibid.*

⁹³ See Chapter 6 Section 6.2; also see WIPO, *The Definition of Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Ninth Session, Geneva, November 11 to 15, 2002) SCT/9/4, para. 3.

⁹⁴ See Giovannucci, et al, *supra* note 237, Ch. 2 at 17; Philippe Cullet & Andrea Nascimento, “Geographical Indications” in S. Biber-Klemm and T. Cottier, eds, *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (London: CAB International, 2006) at 252.

⁹⁵ See text accompanying note 300, Chapter 3.

standard of production, or if the products originate from outside a specified geographical area of production.⁹⁶

The extent to which GIs may satisfy considerations of effectiveness, integrity and locality may depend on the legal means by which GIs are protected at the national level. As demonstrated in previous discussion, the method by which GIs are protected – *sui generis* or trademark-based – relate to important questions that determine the instrumentality of GIs, such as the condition of protection, scope of protection and the degree of control ILCs may exercise over the use of the GI.⁹⁷ This brings us to the second consideration which this thesis proposes, namely; what lawmakers, policy-makers and others at the national level should take into account once they adopt GIs as a modality for protecting TKBAPs. This consideration is the choice of a legal means for protecting GIs.

7.3.2.2 *The Choice of a Method for Protecting Geographical Indications*

One of the matters for developing countries and ILCs to consider in adopting GIs within their jurisdictions is the choice of instruments by which to protect them. The TRIPS Agreement acknowledges and provides that GIs could be protected by any “legal means.” Unlike the ubiquitous orthodox approach to protection in other regimes of IPRs, the protection of GIs can be accomplished through flexible methods that can be enforced in different forms.⁹⁸

⁹⁶ *Ibid.* citing Louis Lorvellec, “You’ve Got to Fight for Your Right to Party: A Response to Jim Chen” (1996) 5 Minnesota Journal of Global Trade 65.

⁹⁷ See discussion in Chapter 5 Section 5.5.

⁹⁸ For discussion of the inflexibility of IPRS standards in the TRIPs Agreement and the challenge it poses to the protection of TK, see Chapter 3 Section 3.2.2.2.

Among the different forms of GIs protection, the *sui generis* system and the trademark-based system represent, fundamentally, different approaches to GI protection. Each system of GIs protection incorporates its own distinct variations that differ in nature, scope and jurisprudence. The *sui generis* system of GIs incorporates *ex parte* or *ex-officio* methods of registering rights. This allows for registration by either individuals, public agencies, or other collectivities.⁹⁹ The system also incorporates variations such as PDO, PGI and TSG that the EU adopted and applies in reference to the level of attachment a product has to its territorial origin. By comparison, in the trademark-based system, variations exist in the form of collective marks, certification marks and ordinary trademarks. These flexibilities in the methods of protecting GIs provide a range of alternatives that may suit the needs and desires of many ILCs.

Regardless of the degree of flexibility of GIs protection, legal and policy makers at the national and local levels should adopt a method of protection based on the necessities for protecting a TKBAP at the local level. Such a decision should be based on an assessment of the extent to which each method of protection allows the establishment, use, and modifications needed to conform to the principles considered in the preceding subsection. In this respect, the *sui generis* model has essential features that accommodate the subject matter of TKBAPs “connoted” and “denoted” by GIs.¹⁰⁰ The *sui generis* system of GIs is a central construct in the conceptual and analytical framework of GIs addressed in this thesis.¹⁰¹

⁹⁹ See Chapter 5 Section 4.5.2.

¹⁰⁰ See discussion of the scope of the subject matter of TK in Chapter 2 Section 2.2.3.

¹⁰¹ See further discussion in Chapter 2 Section 2.7.

For instance, preceding Chapters have showed that in their *sui generis* forms, GIs designate products originating from places, instead of from specific individuals.¹⁰² In this context, the place-based aspect of the recognition of GIs rights allows ILCs to establish collective rights over traditional resources in a defined geographical area without a need to designate an individual rights holder. This makes it possible for local systems of jurisprudence among ILCs to govern, for example, the methods of production, the allocation of different production roles, and the classification of a specific knowledge of production and the procedures of its transfer and the modes of its utilization.¹⁰³ As well, the *sui generis* method of GIs allows the allocation of different rights related to the knowledge of production to individual specialists, families, clans or the tribe or nation as a whole, depending on ILCs' conception of "ownerships" that control access to their resources.¹⁰⁴

Thus, the *sui generis* method of GIs protection may serve to formalize production methods developed and generated through local consensus. The bases of GIs protection in the *sui generis* model can be drafted to comply with the requirements ingrained in local protocols and traditional rules regarding the management and conservation of biodiversity in the particular territory from which the TKBAP originates.

Methodological and disciplinary concerns limit exploration of the relationship between GIs and indigenous legal traditions that may be applicable in the protection of

¹⁰² See Chapter 2 Section 2.7 & Chapter 5 Section 5.5.1, above, for more discussion on this.

¹⁰³ See Chapter 5 Section 5.6 for discussion of the different structural and functional suitability between GIs and TK systems.

¹⁰⁴ See discussion of the different contexts of ownership in Western and ILCs' property systems in text accompanying note 89, Chapter 2.

TKBAPs. Indeed, this is best accomplished on a case-by-case basis through field and on-site studies that identify the prevailing indigenous legal cultures in a locality in relation to a particular product. However, the discussion in this thesis has identified the different ways in which the suitability of GIs for protecting TKBAPs may be further explored in specific contexts.¹⁰⁵ Based on its analyses throughout, and in light of assessments in preceding Sections of this Chapter, it can be concluded that the *sui generis* form of GIs protection has significant potential for protecting TKBAPs.

The foregoing conclusion does not, however, amount to an outright rejection of the trademark-based method of GIs protection. Where the protection of TKBAPs is sought under the trademark-based model of GIs protection, a number of conceptual and practical challenges may be encountered. This is because a number of legal and analytical challenges underlie the relationship between GIs and trademarks, a detailed analysis of which lies beyond the scope of this work.¹⁰⁶

In considering the option of a trademark-based GIs modality for protecting TKBAPs, one of the conceptual challenges explored in Chapter Two relates to the fact that trademarks are a category of private property rights.¹⁰⁷ As such, rights in trademarks are

¹⁰⁵ See Chapter 2 Section 2.8 & Chapter 5 Section 5.8.

¹⁰⁶ See the distinction between GIs and trademarks in Chapter 2 Section 2.7; also see discussion of issues that arise from the relationship between GIs and trademarks in Philippe Zylberg, “Geographical Indications v. Trademarks: The Lisbon Agreement: A Violation of TRIPS?” (2003) 11 U Baltimore Intell Prop LJ; Dev Gangjee, “Quibbling Siblings: Conflicts between Trade Marks and GIs” (2007) 82 Chicago-Kent L Rev 1253; Eleanor K. Meltzer, “Pass the Parmesan? What You Need to Know About Geographical Indications and Trademarks” *Virginia Lawyers Weekly* (July, 2002); Mary M. Squyres, *Geographical Indications in the Trademark Arena* (Chicago: Thomson West Publications, 2007); Heald, Paul J. “Trademarks and Geographical Indications: Exploring the Contours of the TRIPS Agreement” (1996) 29 Vand J Transnat’l L 635.

¹⁰⁷ See the distinction between GIs and trademarks as part of IPRs in Chapter 2 Section 2.7.

generally owned by individuals or corporations, and not by communities, states or nations.¹⁰⁸ In trademarks, only a legal person, either a natural person or a group of individuals formally incorporated as a legal person, claims the rights. The requirement of legal personality does not change even in the case of collective marks and certification marks, and these are the primary methods for protecting GIs in the trademark-based system.¹⁰⁹ In both cases, ownership of the marks or indications is attached to individuals that must be incorporated to form a legal person.¹¹⁰

The second conceptual challenge in relation to the use of a trademarks-based GIs relates to the fact, as previously explained, that the protection of trademarks – even certification marks and collective marks – is justified by economic considerations alone.¹¹¹ As such, the underlying cultural rationales for protecting TKBAPs may not be accounted for. Consequently, the degree of GIs protection for a product that can be acquired under existing national trademark systems is equivalent to the basic level of protection currently available under the TRIPS Agreement to products other than wines and spirits. It can be deduced from the above discussion¹¹² that the consequence of this problem is obvious: the trademark-based system may not accommodate biodiversity, cultural and social concerns like the *sui generis* system of GIs would do.

¹⁰⁸ See *ibid*; also see S. K. Sreedharan, “Reconciling TRIPS with the Convention on Biological Diversity – Indian Perspective” (2004) 2 Business Briefing at 1.

¹⁰⁹ See Chapter 5 Section 5.5.1.

¹¹⁰ In certification marks, the rights holder is a collective organization which certifies that individual traders that use the mark meet specified standards. In collective marks, the rights holder is usually an association or a cooperative which owns the mark on behalf of its members. see discussion in note 223, Chapter 2.

¹¹¹ See discussion in Section 7.3.1.1, above.

¹¹² See *ibid*.

The practical challenge that attaches to the first conceptual problem is that ILCs may not be able to establish rights over TKBAPs unless they fulfill the formal requirements of a “legal person” under Western legal regimes.¹¹³ Under these, informal cooperatives, farmers’ unions, producers’ organizations, clans, lineages and other collectivities must be incorporated as a “legal person.” Given this, it should be highlighted, first, that it is inappropriate to require validation of an ILC’s “personality” along with those collectivities that, otherwise, are sanctioned by autonomous indigenous legal cultures and structures.¹¹⁴ Second, it could practically be difficult to find ILC collectivities that have the organizational capacity and competence to undergo the procedures of registering as rights-holders and to defend their rights by taking legal action.¹¹⁵

As a strategy by which to overcome the two limitations when considering a trademarks-based protection of GIs, this thesis proposes that developing countries must use discretion and creativity in carrying out their obligation under the TRIPS Agreement to implement trademark protection in their jurisdictions. The TRIPS Agreement stipulates only the basic standards of protection for GIs. As such, developing countries may amend or modify their trademark law in order to offer higher degrees of protection to GIs. Developing countries may explore creative strategies regarding criteria by which to claim trademark registration and licensing conditions where third parties seek to use a GI, and

¹¹³ See Darrell Addison Posey & Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities* (Ottawa: IDRC, 1996).

¹¹⁴ See Fikret Berkes, *Sacred Ecology: Traditional Ecological Knowledge and Resource Management* (Philadelphia: Taylor & Francis, 1999); Y. Henderson M. Battiste, *Protecting Indigenous Knowledge and Heritage: A Global Challenge* (Saskatoon: Purich, 2000).

¹¹⁵ For discussion of the challenge of requirements of the legal identity of right-holders in IPRs in general, see text accompanying note 98, Chapter 3.

concerning prohibitions against unauthorized use, imitation, usurpation and misappropriation of GIs.¹¹⁶

In the absence of strong international protection of GIs, it may be challenging to accomplish amendments to national trademarks law in the case of ILCs in Canada, the US and other common law countries like Australia and New Zealand. With the coming into force of the TRIPS Agreement that introduced a higher degree of GIs protection for wines and spirits, Canada and the US amended their trademarks law to comply with the higher standard of protection.¹¹⁷ In addition, Canada, the US, and Australia held a number of bilateral frameworks of negotiations and discussion with the EU for stronger GIs protection.¹¹⁸

The discussion in Chapter Four showed changes in the trademark regime of Australia and New Zealand that somehow accommodate ILC interests.¹¹⁹ Similarly, there are limited experiences in Canada in which members and groups of ILCs protect a number of marks as official marks and certification marks to identify a wide spectre of goods and services ranging from traditional art and artwork to food products, clothing, tourist services, and enterprises.¹²⁰ The province of Quebec has enacted a GIs bill “to regulate

¹¹⁶ See discussion in Chapter 5 Section 5.4.1; Chapter 6 Section 6.4.2.2.

¹¹⁷ See Chapter 5 Section 5.5.1; also see note 73, Chapter 5, s 12(1) (g), s 12(1) (h), s 11.14, s S11.15, and s 11.18 (2); see 15 USC §1051-1127 (1994), s 2 (a).

¹¹⁸ See text accompanying note 179, Chapter 5.

¹¹⁹ See Chapter 4 Section 4.6.5.

¹²⁰ See Canadian Trade-Mark Data, GENUINE COWICHAN & DESIGN, Registration Number: TMA469023. The following are some of Aboriginal names that are registered, or are in the process of registration as “official marks:” SKATIN, KASKA, QUENEESH, NK’MIP and FIRST NATIONS SUMMIT. Also see Barry Steven Mandelker “Indigenous People and Cultural Appropriation: Intellectual Property Problems and Solutions” (2000) 16 Canadian Intellectual Property Review 367; Boughton,

the use of designations and claims identifying agricultural, aquacultural and other food products.”¹²¹ On March 21, 2009, the *Conseil des Appellations Éeservées et des termes Valorisants* (CARTV) recognized Charlevoix lamb as the first food product in North America to be legally protected based on its origin in the likes of Italy’s Parma ham and France’s Roquefort cheese.¹²² In recent times, similar initiatives have emerged in the US to adopt a version of GIs to protect “American Origin Products.”¹²³ If provincial governments and indigenous peoples’ governments introduce GIs systems based either on the *sui generis* system or on the trademark-based model, there could potentially be legal reforms to provide better protection for those products in the future.¹²⁴ Due to the limited scope of this thesis, further study and research is required to understand the applicability of GIs to protect TKBAPs in this direction.

Mindful of the above limitations and recommendations, this thesis adopts the position that the flexibility inherent in providing GIs protection offers a mixed blessing for developing countries in their desire to implement GIs within their jurisdictions. The

Protecting Aboriginal Marks online: Boughton Law Corporation <http://www.boughton.ca/files/669020_1.pdf>.

¹²¹ See *Act Respecting Reserved Designations and Added-Value Claims* (L.R.Q., chapter A-20.03).

¹²² See CARTV, *Protected Geographical Indications: Agneau de Charlevoix* online: CARTV <<http://cartv.gouv.qc.ca/en/pgi-agneau-charlevoix>>; see also Elizabeth Barham, “The Lamb that Roared: Origin-Labeled Products as Place-Making Strategy in Charlevoix, Quebec” in C. Clare Hinrichs & Thomas A. Layson, *Remaking the North American Food System: strategies for Sustainability* (Lincoln: University of Nebraska Press, 2007).

¹²³ In the U.S., a National Research and Outreach Project supported by the Department of Agriculture aspires “to vet” American GI products that could be identified as “belonging on a national listing.” See American Origin Products: <http://aop.uark.edu/index.html>

¹²⁴ Groups of producers in Vancouver recently started consultation with the British Columbia Ministry of Agriculture to introduce GIs for heritage-based agricultural products. See ITS: <<http://www.islandtastesensations.com/gi.html>>. In addition, the Assemblée Communautaire Fransaskoise in Saskatchewan holds continued interest in GIs. See Patricia Dawn Robertson, “Globe Focus: Prairie ‘Terroir-ists’ Cook up a Radical Plot” (Jun. 18, 2010) *Globe and Mail*. Also, see <http://www.fransaskois.sk.ca/>.

trademark-based system of protection may be relevant in some circumstances where GIs protection is primarily motivated by economic gains. Given that under the trademark system GIs rights are mostly protected through either collective trademarks or certification marks, the trademark-based system of GIs may be relevant to producers that have the Organizational capability to register, manage and control their certification and collective marks.

It is difficult to provide conclusive recommendations as to whether all the categories of TKBAPs described in Chapter Two could be covered under GIs protection.¹²⁵ It is also difficult to offer definitive guidance as to which form of GIs protection suits the practical and pragmatic needs of ILCs. This is because an in-depth analysis of empirical evidence for the purpose is beyond the scope of this thesis. Nevertheless, the key issues raised in this connection in Chapter Six should be supported through evidence and field-based research in specific contexts in order to determine the appropriate methods for protecting a specific product. Further research is needed to inform a comprehensive assessment of the impact, potential, and effectiveness of the different forms of GIs protection in developing countries in relation to individual products. As a recent study concludes, selecting the appropriate method of GIs protection at the national level requires careful consideration and preliminary assessment of the public and private benefits of GIs, and their likely costs in relation to a particular product.¹²⁶ If used correctly, the different forms of GIs protection provide alternative means of pursuing market-oriented development strategies that empower ILCs to practice fair and equitable participation in the market.

¹²⁵ See the constitutive elements of TKBAPs in Chapter 2 Section 2.6.

¹²⁶ See Giovannucci, et al, *supra* note 237, Ch. 2.

It is conceded that like any IP regime, the use of GIs to protect TKBAPs in developing countries presents challenges of implementation. The discussion in Chapter Six indicates that these challenges relate to introducing, establishing, and enforcing GIs rights. As such, the effectiveness of GIs as instruments for protecting TKBAPs should be carefully weighed on a case-by-case basis in light of immediate challenges and long-term opportunities. As the discussion in Chapter Six shows, the challenges and opportunities of using GIs to protect TKBAPs in developing countries are best determined through close analyses of major questions and critical issues, such as constraints faced by producers in developing countries, the structures of relevant GIs legislation, and the manner of implementation of GIs. Tackling prolonged challenges may entail sustained efforts that should be backed by appropriate planning and adequate investments over the medium to long terms. In the case of TKBAPs that do not already have established market recognition, the challenges associated with adopting GIs may be so significant that purported benefits cannot be reaped even in the long term. Approaches that are too simplistic, uniform, and focus on one method of protection without due consideration for another, may raise the same concerns as those that often arise in connection with the viability of IPRs implementation in developing countries.¹²⁷

Where GIs protection is necessitated by the need to ensure control over production systems on such grounds as biodiversity, cultural, food security and other social concerns, the form of GI protection takes a public rather than a private character.¹²⁸ In such cases, a

¹²⁷ See discussion in Chapter 3 Section 3.2.2.2.

¹²⁸ The public character of GIs runs contrary to the TRIPS Agreement's equation of all IPRs as "private rights." See TRIPS Agreement, *supra* note 13, Ch. 1, preamble, para. 4. The characterisation of GIs as private rights does not take into account the nature and jurisprudence of GIs development, and calls for the rectification of the Agreement in the future.

sui generis system of GIs may be preferred to that of a trademark-based system. The *sui generis* system of GIs protection could and, almost certainly, would encompass trademark functionality in generating economic benefits. However, an exclusive focus on economic concerns in the implementation of GIs through a trademark-based system entails the risk of marginalising broad public policy goals.

In initiatives to pursue a combination of economic, biodiversity, social, and cultural objectives, the discussion in Chapter Six shows that the *sui generis* form of GIs protection helps to facilitate concerted efforts among producers and a variety of agents, including public agencies. In the case of most developing countries, where traditional farmers are mostly underprivileged, agriculture is the prominent means of earning foreign currency.¹²⁹ As well, certain emblematic products are considered an expression of national identity.¹³⁰ In this scenario, collective efforts exerted under the institutional apparatus of the state may be necessary to facilitate the pursuit of long-term strategies of development.¹³¹ The involvement of other stakeholders may also be necessary to help small-scale producers and farmer groups to enforce and defend their rights in foreign jurisdictions.¹³² Such broad-based participation is possible under the *sui generis* system of GIs.¹³³

¹²⁹ See OECD, *Agricultural trade and poverty: making policy analysis count* (Paris: OECD Publishing, 2003).

¹³⁰ See Chapter 2 Section 2.4.

¹³¹ See Chapter 6 Section 6.4.2.2.

¹³² See *ibid.*

¹³³ See text accompanying note 111, Chapter 5.

Developing countries and ILCs may adopt or eschew the use of GIs depending on the specific product under consideration, the defined objectives that may be served, and the anticipated challenges relevant to each context. However, if a proactive decision is made to implement GIs on account of their relevance to achieving identifiable policy objectives, the practical difficulties of implementing them identified in this thesis are not insurmountable. In a way, these difficulties hardly outweigh the advantages of GIs in terms of their suitability and adaptability as regards important considerations in the long term, particularly their suitability to ensure cultural and biodiversity preservation and food security assurance.

7.4 EPILOGUE

The analyses in the preceding Chapters demonstrate that the search for a method of protecting TK should transcend a single modality. This is simply due to the different needs and expectations of ILCs. In consideration of this, the argument advanced in the first part of the thesis is for a pluralism of modalities to protect TK in recognition of its holistic features. The scope of analysis, however, does not allow for offering normative guidelines on how to craft an overarching modality for defensive protection of TK. Even so, the case was made that efforts to protect TK through inward-looking cultural protocols and other variations of *sui generis* modalities provide better policy options than those offered under a generic public domain framework.

It should also be admitted that though some modalities may be important to the protection of TK, it might not be feasible or even desirable to find one form of protective regime that covers all aspects of TK. In this respect, efforts that complement the

defensive modalities, and those based on ABS arrangements, are necessary to empower ILCs to take advantage of the products of their knowledge and practices in the global knowledge economic order.¹³⁴ Given the increasing awareness of the value and potential of TKBAPs to commercial viability, a protection system for TK should incorporate a form of IP-based protection that is fashioned, or refashioned to benefit ILCs in terms of being appropriate and useful to cater to their needs and expectations of protection for their knowledge systems and practices. As to commercially available TKBAPs, this objective can be accomplished through a re-examination of the suitability of IP tools. The analysis in this thesis demonstrates that GIs are plausible IP-based options for protecting TKBAPs.

GIs can be the preferred options for protecting TKBAPs in circumstances where other modalities of protection cannot address ILCs' concerns in respect to their participation in international trade, and as regards protection and advantage for them in socio-economic, biodiversity and cultural terms.¹³⁵ That this can be done arises from the conceptual and analytical foundations for the protection of GIs offered in this thesis. Beyond economic considerations, the need to recognize and protect the unique cultural values embodied in the agricultural knowledge and practices of ILCs justify claims for their stronger protection under GIs. A conceptualization of GIs as proprietary rights would determine

¹³⁴ Vandana Shiva, "War against Nature and the People of the South" in Sarah Denny Anderson, *Views from the South: The Effects of Globalization and the WTO on Third World Countries* (Chicago: Food First Books, 2000) at 121.

¹³⁵ See Chapter 3 Section 3.5; Chapter 6 Sections 6.3 & 6.5-6.8.

the conditions of protection, scope of protection, and the degree of control that ILCs will be equipped with under a regime of GIs protection.¹³⁶

As noted in the preceding Chapters, efforts to protect TK should recognize instruments that support ILCs' efforts to resist the impacts of global economic pressures in the local settings of traditional production and in the global markets for TKBAPs. Such recognition necessitates a strong protection for GIs at the international level for the benefit of ILCs that may use them to protect TKBAPs. For this reason, this thesis has argued that developing countries and ILCs should seek stronger protection for GIs in the context of ongoing negotiations to protect TK under international IP law and policy. The identification and critical appraisal of existing modalities for TK protection in Chapter Four shows the need for IP-based protection to supplement the defensive models for protecting TK systems. Thus, the protection of GIs should further facilitate synergy and cooperation between the WIPO, CBD, and FAO to fashion a binding international treaty to protect TK.

At the national level, domestic authorities may choose to implement GIs depending on the needs and specific circumstances that necessitate the recognition of GIs rights. Depending on the policy context for their adoption, GIs may link local resources-based production systems and global markets. Further, they may be effectively used to empower ILCs to transform their long-standing, socio-culturally embedded and context-specific knowledge into commercial income if their implementation is combined with appropriate measures to regulate the production and marketing of TKBAPs. At the same time, the use

¹³⁶ See Section 7.3.1 & Chapter 5 Section 5.10.

of GIs as a modality for protecting TKBAPs could contribute to food security, agrobiodiversity, cultural identity and sustainability.

Of all its advantages, it is the economic benefits of a GIs system to ILCs and developing countries that will, in particular, depend on the way a specific GI-product is produced, marketed and distributed. In this respect, the adoption of GIs should be considered from the perspective of an *ex ante* assessment of challenges in its implementation. It should also be assessed in terms of evidence-based analysis of their impact, potential and effectiveness. Flexibility in the methods of protecting GIs, and the variations in the form and nature of the system of GIs, provide opportunities to devise strategies for TKBAPs protection to suit the needs and desires of different ILCs on a case-by-case basis.

In addition, the effectiveness of a legal means of GIs protection for TKBAPs may depend on the policy context in which the distinct forms of protection are sought.¹³⁷ The form and nature of GIs protection must be guided by the policy strategies that have clearly defined their goals and purposes. Relevant questions to answer here include whether a product needs to be covered under GIs protection, which form of GIs protection should be adopted, and what modifications should be made to a method of GIs protection to conform it to ILCs' interests. These questions are best answered on a case-by-case basis, and by taking into consideration broad public and private objectives. In GIs implementation necessitated by the “publicly-oriented” goals of TK-based agricultural policy, the *sui generis* form of GIs protection best captures the essentials that

¹³⁷ See Section 5.5.3, above.

accommodate the subject matter of TKBAPs protection. A well-considered decision to implement GIs protection for TKBAPs may prefer a trademark-based method of protection as a bridge that may lead to a *sui generis* method of protection, and vice versa.

As a modality of TK protection, GIs are by no means a panacea for the enormous challenges that ILCs face from global economic pressures. In addition to the aforementioned potential challenges in their implementation, two limitations of GIs are acknowledged in this thesis. The first relates to the nature of protection GIs provide in the broader context of TK protection, and the second, in regard to the technical difficulties that may arise in the delimitation of the geographical boundaries for a product covered in GIs protection.

In relation to the first, it is conceded that in the absence of a comprehensive system to protect TK, the actual knowledge associated with GIs-relevant product may still be open to misappropriation by third parties. The role of GIs should not be overstated to the degree that they supplant more effective modalities of protection that are attuned to prevalent forms of biopiracy and TK misappropriation.¹³⁸ For this reason, GIs are best utilized to supplement, not supplant, other measures directed to the protection of TK.

Second, the demarcation of a production area in GIs protection follows the production history of a product based on ecological and cultural rather than political boundaries. TK practices in a GI-protected territory may not be protected if ILCs move to a place away

¹³⁸ Some of those systems that are more attuned to the most rampant aspects of biopiracy are discussed in Chapter 4 Section 4.6.3; see Vandana Shiva, “The Basmati Battle And its Implications for Biopiracy and TRIPS”, online: <<http://www.globalresearch.ca/articles/SHI109A.html>> (decrying increased advocacy for GIs systems, instead of other more effective systems as a “blind alley of Geographical Indicators”).

from their original place for any reason. In addition, technical and practical difficulties may ensue in implementing GIs in a trans-border and geographically scattered area of production. As indicated in Chapter Six, it is possible to address these challenges, somehow, by means of well-designed strategies incorporated into a GIs system.¹³⁹

Irrespective of the decision that ILCs and developing countries may make at national and local levels to protect TKBAPs, it is clear that a stronger protection of GIs in international IP law and policy is needed. In line with the recommendations and guidelines outlined in this Chapter, such protection is necessary so that GIs are considered as part of policy measures that furnish national responses to address social, cultural, biodiversity, and economic concerns associated with TK protection.

To conclude, the protection of the proprietary interests in GIs in the manner advanced in this thesis can contribute to “agro-epistemic pluralism” in the global IP system.¹⁴⁰ This is likely the case once the contribution of ILCs to the development and improvement of landraces, wild species, farmers’ varieties, and handicrafts are thereby recognized. Properly designed, GIs can be used to recognize TK-based creativity and practices in the same parlance that conventional IPRs recognize other knowledge, innovations and practices. The recognition of the role of GIs in the overall search for the protection of TK, currently ongoing at the international level, may, therefore, provide a credible way to justify the push to implement global IP norms in developing countries.¹⁴¹ Whilst IPRs are

¹³⁹ See Chapter 6 Section 6.9.

¹⁴⁰ See discussion of “agro-epistemic pluralism” in Chidi Oguamanam, “Tension on the Farm Fields: The Death of Traditional Agriculture?” (2007) 27: 4 *Bulletin of Science, Technology & Society* 260-273.

¹⁴¹ See discussion of the implementation of global IP tools in developing countries in the post-TRIPS period in Chapter 4 Section 4.3.1.

traditionally used to “foster innovation,” GIs can also be used to preserve and protect TK that has economic and cultural significance in agricultural production and is identified with a particular geographic origin.

BIBLIOGRAPHY

LEGISLATION

NATIONAL AND REGIONAL

35 USC §101 (1984).

§ 45 (15 USC. § 1127) (2008).

15 USC. §1052 (e) (1988).

African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources, Algeria (2000).

Algeria Executive Decree No. 76-121 on Procedures for Registration and Publication of Geographical Indications and the Establishment of the Relevant Fees, entered into force on 16 July 1976.

Code of Practice on Basmati Rice, British Retail Consortium, in Consultation with the Local Authorities Co-ordinators of Regulatory Services (LACORS) and the Association of Public Analysts (APA), (July 2005).

Commission Regulation (EC) No 753/2002, 2002 O.J. (L 118) 1.

Corrigendum to Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on Official Controls Performed to Ensure the Verification of Compliance With Feed and Food Law, Animal Health and Animal Welfare Rules [2004] O.J. L/ 191.

Council Directive (EC) 96/70, 1996 O.J. (L 299) 26.

Council Regulation (EC) 1493/1999 of 17 May 1999 on the Common Organization of the Market in Wine, [1999] O.J. L /1791.

Council Regulation (EC) 1576/89, 1989 O.J. (L 160) 1.

Council Regulation (EC) 2081/92 of 14 July 1992 on the Protection of Geographical Indications and Designations of Origin for Agricultural Goods and Foodstuffs, [1992] O.J. L/ 208.

Council Regulation (EC) 40/94 on the Community Trade Mark, 1994 O.J. (L 11) 1.

Council Regulation (EC) 510/2006 of 20 March 2006 on the Protection of Geographical Indications and Designations of Origin for Agricultural Goods and Foodstuffs, [2006] O.J. L 93/12.

Council Regulation (EC) 692/2003, 2003 O.J. (L 99) 1.

Council Regulation (EC) No 509/2006 of 20 March 2006 on Agricultural Goods and Foodstuffs as Traditional Specialities Guaranteed, [2006] O.J. 1 93/1.

Council Regulation on Organic Production and Labelling of Organic Products and Repealing Regulation (EEC) No 2092/91 [2007] O.J. L 834/2007.

Council Regulation(EC) 2081/92 of 14 July 1992 On the Protection of Geographical Indications and Designations of Origin for Agricultural Goods and Foodstuffs, [1992] O.J. L/ 208.

Council Regulation(EC) 2082/92 of 14 July 1992 on Certificates of Specific Character for Agricultural Goods and Foodstuffs, [1992] O.J. L/208.

Decree Regulating Wine-Making and the Stocking, Circulation and Trading of Wines, No. 2-75-321, 12 August 1977 (25 Shaban 1397) <<http://www.wipo.int/wipolex/en/details.jsp?id=2978&tab=2>>.

Decree Regulating Wine-making and the Stocking, Circulation and Trading of Wines, No. 2-75-321, 12 August 1977 (25 Shaban 1397) <<http://www.wipo.int/wipolex/en/details.jsp?id=2978&tab=2>>.

Gaceta Oficial (Official Gazette) No. 24,083 of June 27, 2000.

Japan Standard for Indication in Relation to Geographical Indications (Notification No. 4 of National Tax Agency), 28 December 1994.

Law Concerning Distinctive Signs of Origin and Quality for Foodstuff, Agricultural and Fishing Products, No. 25-06 , 23 May 2008.

Liquor Products Amendment Act, 24 November 2008, No. 32 Cape Town.

Mauritius Geographical Indications Act No. 23, entered into force 8 August 2002.

Mineral Waters under Council Directive (EC) 80/777, 1980 O.J. (L 229) 1.

Morocco Food and Agricultural Import Regulations and Standards – Narrative FAIRS Country Report, GAIN Report Number MO9012.

New Zealand Trade Marks Act 1953, as amended by the Trade Marks Amendment Act of 1994 and 2002.

Organic Foods Production Act of 1990, Title XXI of the Food, Agriculture, Conservation, and Trade Act of 1990 (Public Law 101–624).

Organic Products Regulations, RSC 1985 c. 20 (4th Supp.).

Patent Act, R.S.C. 1985, c. P-4.

Provisions for the Protection of Products of Geographical Indications, entered into force 15 July 2005 online: < http://www.wipo.int/clea/docs_new/pdf/en/cn/cn041en.pdf>.

South Africa Trade Marks Act, No. 194, December 22, 1993 online: <<http://www.wipo.int/wipolex/en/details.jsp?id=4074>>.

Special System for the Collective Intellectual Property Rights of Indigenous Peoples Act 20 (Gaceta Oficial (Official Gazette) No. 24,083 of June 27, 2000).

Switzerland Federal Law on Agriculture, Entered into Force on 1 January 1999.

Switzerland Federal Law on the Protection of Trademarks and Indications of Source, Entered into Force on 1 April 1993.

The Geographical Indications of Goods (Registration and Protection) Act, The Gazette of India Extraordinary No. 48, New Delhi, December 30, 1999.

The Geographical Indications of Goods (Registration and Protection) Rules (March 8, 2002) New Delhi, online: <http://www.ipindia.nic.in/girindia/GI_Rules.pdf>.

Trade Marks Act, R.S.C. 1985, c. T-13.

Tunisia Law No. 2007-68 on Appellations of Origin, Geographical Indications and Indications of Source for Handicrafts, Entered into Force on 27 December 2007.

INTERNATIONAL

Agenda 21, Rio de Janeiro, 3-14 June 1992 (“The Earth Summit”) online: < <http://www.un.org/geninfo/bp/envirp2.html> >.

Agreed Interpretation of the International Undertaking, Annex I (Resolution 4/89 of the Twenty-fifth Session of the FAO Conference, Rome, 11-29 November 1989).

Agreement Governing the Activities of States on the Moon and the Other Celestial Bodies, 11 July 1984, UN GAOR, 34th Session, Supplement No. 20, UN Document A/34/20 1979.

Agreement on Technical Barriers to Trade (TBT) (1994) ILM 81.

Agreement on Trade-Related Aspects of Intellectual Property Rights, 15 April 1994, 1869 U.N.T.S. 299; 33 I.L.M. 1197.

Antarctic Treaty (Dec. 1, 1959) 402 UNTS 71, entered into force on June 23, 1961.

Berne Convention for the Protection of Literary and Artistic Work (as amended on September 28, 1979) WIPO Database of Intellectual Property Legislative Texts.

Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization COP 6 Decision VI/24 (Sixth Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity, the Hague, 7 - 19 April 2002).

Charter of the United Nations, 24 October 1945, Can TS 1945 No. 76.

Constitution of the World Health Organization, online: WHO <http://www.opbw.org/int_inst/health_docs/WHO-CONSTITUTION.pdf>.

Convention Establishing the World Intellectual Property Organization, 26 April 1970, 21 UST 1770; 828 UNTS 3.

Convention for the Safeguarding of the Intangible Cultural Heritage, 17 October 2003, MISC/2003/CLT/CH/14, entered into force 20 April 2006.

Convention on the Protection and Promotion of the Diversity of Cultural Expressions, Oct. 20, 2005, U.N. Doc. CLT-2005/CONVENTION DIVERSITE-CULT REV.

Declaration of Alma-Ata (International Conference on Primary Health Care, Alma-Ata, 6-12 September, 1978).

Declaration of Permanent Sovereignty over Natural Resources, G.A. Res. 1803 (XVII), U.N. GAOR Supp. No.17, U.N. Doc. A/5217 (1962).

Declaration on the Rights of Indigenous Peoples, GA Res. A/61/295, 107th Plen. Mtg., (2007).

Draft Treaty for the Protection of Expressions of Folklore Against Illicit Exploitation and Other Prejudicial Actions, Reprinted in Copyright [1985] 47-58, and in Doc. WIPO/GRTKF/IC/3/10, dated 25 March 2002, Annex IV.

General Assembly Adopts Declaration on Rights of Indigenous Peoples, 13 September 2007 online: <<http://www.un.org/News/Press/docs/2007/ga10612.doc.htm>>.

General Rules of Procedure, as adopted on September 28, 1970, WIPO Pub. No.399 online: WIPO <http://www.wipo.int/freepublications/en/general/399/wipo_publications_399.pdf>.

International Convention for the Protection of New Varieties of Plants, 2 December 1961, 33UST. 2703, 815 U.N.T.S. 89 (as revised at Geneva on 10 November 1972, 13 October 1978) the 1991 revision.

International Covenant on Civil and Political Rights, 19 December 1966, 999 U.N.T.S. 171 Can TS 1976 No. 47, 6 I.L.M. 368, entered into force 23 March 1976.

International Covenant on Economic, Social and Cultural Rights, 16 December 1966, 993 UNTS 3, Can TS 1976 No. 46 entered into force on 3 January 1976.

International Labour Organization Convention No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries, 7 June 1989, reprinted in (1989) 28 I.L.M.1382.

International Treaty on Plant Genetic Resources for Food and Agriculture, adopted by the FAO Conference, at its Thirty-first Session (November 2001) on 3 November 2001, through Resolution 3/2001, entered into force on 29 June 2004.

International Undertaking on Plant Genetic Resources Conference (Resolution 8/83 of the Twenty-second Session of the FAO Conference, Rome, 5-23 November 1983).

Model Provisions for National Laws on the Protection of Expressions of Folklore Against Illicit Exploitation and Other Prejudicial Actions, reprinted in 16 Copyright Bull 62 (1982).

Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, open for signature on 2 February 2011, Annex 1 to CBD COP10.

Patent Cooperation Treaty, 24 January 1978 28 UST 7645; TIAS 8733 1160 UNTS 231.

Recommendation on the Safeguarding of Traditional Culture and Folklore (Adopted by the General Conference at Its Twenty-Fifth Session, Paris, 15 November 198).

Resolution 3/91 (Twenty-sixth Session of the FAO Conference - Rome, 1991).

Revision of the International Undertaking on Plant Genetic Resources, 6-24 November 1993, Resolution 7/93, Report of the Conference of FAO - Twenty-Seventh Session.

Rio Declaration on Environment and Development, June 1992, 32 I.L.M. (1992) 874.

São Paulo Consensus, 25 June 200, 4TD/410 (Eleventh session São Paulo, 13–18 June 2004).

The Agreement on Agriculture, 15 April 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, Legal Instruments—Results of the Uruguay Round vol. 31 online: <http://wto.org/english/docs_e/legal_e/legal_e.htm>.

The Antarctic Treaty (23 June 1961) 40 U.N.T.S. 71.

The Lisbon Agreement for the Protection of Appellations of Origin and their International Registration, Oct. 31, 1958, as last revised 1 Jan. 1994.

The Madrid Agreement for the Repression of False or Deceptive Indications of Source of Goods, 14 Apr. 1891, 828 U.N.T.S. 389.

The Paris Convention for the Protection of Industrial Property, 1883, as revised in Stockholm on July 14, 1967, reprinted in 21 U.S.T. 1583, 828 U.N.T.S. 305.

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, opened for signature on 2 February 2011, Annex 1 to CBD COP10. Agenda item 3.

Treaty Establishing the European Economic Community (EEC) (Rome, 1957), entered into force on 1 January 1958.

Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Jan. 27, 1967) 610 UNTS 205, entered into force on 10 October 1967.

Understanding on the Rules and Procedures Governing the Settlement of Disputes (1994) 1869 U.N.T.S. 401; 33 I.L.M. 1226 Annex 4.

United Nations Convention on Biological Diversity, 5 June 1992, 30619 U.N.T.S., entered into force on 29 December 1993.

United Nations Convention on the Law of the Sea United Nations Convention on the Law of the Sea, 1833 U.N.T.S. 3, 21 I.L.M. 1261, entered into force on 16 November 1994.

United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa, 17 June 1994, 33 I.L.M. 1328.

Universal Declaration of Human Rights, GA Res. 217(III), UN GAOR, 3d Sess., Supp. No.13, UN Doc. A/810 (1948).

JURISPRUDENCE

A.G. Spalding & Bros. v. A.W. Gamage, 32 RPC 273 (1915).

Bulun Bulun v. R & T Textiles Pty. Ltd. (1998), 157 ALR 193 (FCA).

Cad Kuhne GmbH & Co. u. Juho fimmf&ik GmbH G Co. KG, Case C-269/99.

Chateau-Gai Wines Ltd. v. Institut National des Appellations d'Origine des Vins et Eaux-de-Vie et al, [1975] 1 S.C.R. 190.

Diamond v. Chakrabarty, 447 US 303, 305-06 (1980).

ECJ, Kingdom of Denmark and Federal Republic of Germany v. Commission of European Communities ('Feta II') C-465/02 and C-466/02, [2005].

Foster v Mountford (1976) 29 FLR 233.

Institut National Des Appellations D'Origine Des Vins Et Eaux-De-Vie, et al, v. Andres Wines Ltd. et al, (1987) 16 CPR (3d) 385 (Ont. H CJ), affirmed by the Ontario Court of Appeal, (1990) 30 CPR (3d) 279.

Institut National Des Appellations d'Origine v. Brown-Forman Corp., 47 USPQ2d 1875 (TTAB 1998).

Milpurruru and Others v Indofurn Pty Ltd and Others (1994) 130 ALR 659.

Monsanto Canada Inc. v. Schmeiser, [2004] 1 S.C.R. 902, 2004 SCC 34 [Monsanto cited to S.C.R.].

Trade Marks Act, R.S.C. 1985, c. T-13.

WTO, *EC-US Report* (15 March 2005) (Report by the Panel) WTO Documents WT/DS174R WT/DS290R.

SECONDARY MATERIAL: BOOKS

A, Muhammed, Rüstem Aksel & R. C. Von Borstel. *Genetic Diversity in Plants* (New York: Plenum Press, 1977).

Alexander, Gregory S. *Commodity and Property: Competing Visions of Property in American Legal Thought* (Chicago: University of Chicago, 1998).

- Anderson, Jane E. *Law, Knowledge, Culture: The Production of Indigenous Knowledge in Intellectual Property Law* (London: Edward Edgar, 2009).
- Anderson, Kym & Will Martin. *Agricultural Trade Reform and the Doha Development Agenda* (Washington D.C.: World Bank Publications, 2006).
- Anderson, Kym, Will Martin & Ernesto Valenzuela. *The Relative Importance of Global Agricultural Subsidies and Market Access* (New York: World Bank, 2006).
- Anderson, Sarah Denny. *Views from the South: The Effects of Globalization and the WTO on Third World Countries* (Chicago: Food First Books, 2000).
- Antons, Christoph. *Traditional Knowledge, Traditional Cultural Expressions, and Intellectual Property Law in the Asia-Pacific Region* (The Hague: Kluwer Law International, 2009).
- Appadurai, Arjun. *Modernity at Large: Cultural Dimensions of Globalization* (Minneapolis: University of Minnesota Press, 1996).
- Ataman, Aksoy M. & John Christopher Beghin. *Global Agricultural Trade and Developing Countries* (New York: World Bank Publications, 2005).
- Barclay, Dylan. *Advantages, Constraints, and Key Success Factors of Establishing Quality Signs Linked to the Origin and Traditions in Albania: The Case of Chestnuts from Tropojë* (Rome: FAO, 2010).
- Barrientos, Stephanie & Catherine Dolan. *Ethical Sourcing in the Global Food System* (London: James & James Science, 2006).
- Barton, John H. *The Evolution of the Trade Regime: Politics, Law, and Economics of the GATT* (Princeton: Princeton University Press, 2006).
- Baslar, Kemal. *The Concept of the Common Heritage of Mankind in International Law* (Dordrecht: Martinus Nijhoff Publishers, 1998).
- Battiste, M & J. Y Henderson. *Protecting Indigenous Knowledge and Heritage: A Global Challenge* (Saskatoon: Purich, 2000).
- Becker, Gerhold & James Porter Buchanan. *Changing Nature's Course: The Ethical Challenge of Biotechnology* (Hong Kong: Hong Kong University Press, 1996).
- Bedjaoui, Mohammed, ed. *International Law: Achievements and Prospects* (Paris and The Netherlands: Martinus Nijhoff, 1991).
- Bell, Catherine & Robert K. Paterson. *Protection of First Nations Cultural Heritage: Laws, Policy, and Reform* (Vancouver: UBC Press, 2009).

- Bérard, Laurence, Marie Cegarra & Marcel Djama. *Biodiversity and Local Ecological Knowledge in France* (Nancy: Editions Quae, 2006).
- Bergesen, Helge Ole & George Parmann, eds. *Green Globe Yearbook* (Oxford: Oxford University Press, 1993).
- Berkes, Fikret. *Sacred Ecology: Traditional Ecological Knowledge and Resource Management* (Philadelphia: Taylor & Francis, 1999).
- Bernt, Hugenholtz P. & Lucie Guibault, eds. *The Future of the Public Domain* (The Hague: Kluwer Law International, 2006).
- Bhagwati, Jagdish & Hugh T Patrick, eds. *Aggressive Unilateralism: America's 301 Trade Policy and the World Trading System* (Michigan: University of Michigan Press, 1990).
- Biber-Klemm, Susette & Thomas Cottier, eds. *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (Wallingford: CABI, 2006).
- Birnie, P.W. & A.E. Boyle. *International Law and the Environment*, 2d ed, (Oxford: Oxford U. Press 2002).
- Blakeney, Michael. *Intellectual Property Rights and Food Security* (Oxfordshire: CAB International, 2009).
- Bosselmann, Klaus. *The Principle of Sustainability: Transforming Law and Governance* (Hampshire: Ashgate, 2008).
- Boström, Magnus & Mikael Klintman. *Eco-Standards, Product Labelling and Green Consumerism* (Newyork: Palgrave Macmillan, 2008).
- Bown, Chad P. *Self-Enforcing Trade: Developing Countries and WTO Dispute Settlement* (Washington, DC: Brookings Institution Press, 2009).
- Boyle, James. *The Public Domain: Enclosing the Commons of the Mind* (London: Yale University Press, 2008).
- Boyle, James. *Shamans, Software and Spleens: Law and the Construction of the Information Society* (Cambridge: Harvard University Press, 1996).
- Braga, Carlos Alberto Primo, et al. *Intellectual Property Rights and Economic Development* (New York: World Bank Publications, 2000).
- Braithwaite, J. & Peter Drahos. *Global Business Regulation* (Cambridge: Cambridge University, 2000).

- Brockway, L. H. *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens* (New York: Academic Press, 1979).
- Brookhart, Walter R, Sidney M. Leach & Ben D. Tobor. *Current International Legal Aspects of Licensing and Intellectual Property* (Chicago: American Bar Association, 1980).
- Bruno, Kenny. *The Greenpeace Guide to Greenwash* (Washington, D.C.: Greenpeace International, 1992).
- Brush, S.B. & Doreen Stabinsky, eds. *Valuing Local Knowledge: Indigenous peoples and Intellectual Property* (Washington: Island Press, 1996).
- Brydon, Diana & William D. Coleman. *Renegotiating Community: Interdisciplinary Perspectives, Global Contexts* (Vancouver: UBC Press, 2009).
- Burch, David. *Supermarkets and Agri-Food Supply Chains: Transformations in the Production and Consumption of Foods* (Cheltenham: Edward Elgar Publishing, 2007).
- Burrows, Beth, ed. *The Catch: Perspectives in Benefit Sharing* (Edmonds: The Edmonds Institute, 2005).
- Carrizosa, Santiago. *Accessing Biodiversity and Sharing the Benefits: Lessons from Implementing the Convention on Biological Diversity* (Gland: IUCN, 2004).
- Chaminade, Cristina & Bino Catasús. *Intellectual Capital Revisited: Paradoxes in the Knowledge Intensive* (Cheltenham: Edward Elgar Publishing, 2007).
- Chatty, Dawn & Marcus Colchester. *Conservation and Mobile Indigenous Peoples: Displacement, Forced Settlement, and Sustainable Development* (Colchester: Berghahn Books, 2002).
- Cooke, Elizabeth. *Modern Studies in Property Law* (Oxford: Hart Publishing, 2001).
- Correa, Carlos María. *Intellectual Property Rights, the WTO, and Developing Countries: The TRIPS Agreement and Policy Options* (New York: Zed Books, 2000).
- Correa, Carlos María. *Research Handbook on the Protection of Intellectual Property under WTO Rules* (Cheltenham: Edward Elgar Publishing, 2010).
- Cottier, Thomas & Petros C. Mavroidis, eds. *Intellectual Property: Trade, Competition, and Sustainable Development* (Ann Arbor: University of Michigan Press, 2003).
- D'Amato, Anthony A. & Doris E. Long. *International Intellectual Property Law* (The Hague: Kluwer Law International, 1997).

- Dankers, Cora & Pascal Liu. *Environmental and Social Standards, Certification and Labelling for Cash Crops* (Rome: FAO, 2003).
- Defrancesco, Edi, Luigi Galletto & Mara Thiene. *Food, Agriculture and the Environment: Economic Issues* (Milano: FrancoAngeli, 2005).
- Dixit, AK & VD Norman. *Theory of International Trade: A Dual, General Equilibrium Approach* (Cambridge: Cambridge University Press, 1980).
- Drahos, Peter & John Braithwaite. *Information Feudalism* (London: Earth Scan Publications, 2002).
- Drahos, Peter. *The Philosophy of Intellectual Property Rights* (Aldershot: Dartmouth, 1996).
- Drucker, Peter F. *The Age of Discontinuity: Guidelines to our Changing Society* (Piscataway: Transaction, 1968).
- Dutfield, Graham & Uma Suthersanen. *Global Intellectual Property Law: Commentary and Materials* (Cheltenham: Edward Elgar Publishing, 2008).
- Dutfield, Graham. *Intellectual Property Rights and the Life Science Industries: A Twentieth Century History* (Burlington: Ashgate Publishing, 2003).
- Dutfield, Graham. *Intellectual Property Rights, Trade, and Biodiversity: Seeds and Plant Varieties* (London: Earthscan, 2000).
- Evenson, Robert Eugene & V. Santaniello. *The Regulation of Agricultural Biotechnology* (Wallingford: CABI, 2004).
- FAO, *The State of the World's Plant Genetic Resources for Food and Agriculture* (Rome: FAO, 1998).
- _____. *Trade Reforms and Food Security: Conceptualizing the Linkages* (Rome: Food and Agricultural Organization of the United Nations, 2003).
- Finger, J. M. & Philip Schuler, eds. *Poor People's Knowledge: Promoting Intellectual Property in Developing Countries* (Washington: World Bank, 2004).
- Fowler, Cary & Pat Mooney. *Shattering: Food, Politics, and the Loss of Genetic Diversity* (Tucson: University of Arizona Press, 1990).
- Fridell, Gavin. *Fair Trade Coffee: The Prospects and Pitfalls of Market-Driven Social Justice* (Toronto: University of Toronto Press, 2007).

- Friis-Hansen, E. & B. Sthapit. *Participatory Approaches to the Conservation and use of Plant Genetic Resources* (Rome: International Plant Genetic Resources Institute, 2000).
- Furrer, Olivier. *Corporate Level Strategy: Theory and Applications* (New York: Taylor & Francis, 2010).
- Gatti, Anna & Andrea Boggio, eds. *Health and Development: Toward a Matrix Approach* (Hampshire: Palgrave Macmillan, 2008).
- Gay, Paul du & Michael Pryke, eds. *Cultural Economy: Cultural Analysis and Commercial Life* (London: Sage, 2002).
- Gervais, Daniel. *The TRIPS Agreement, Drafting History and Analysis*, 2nd ed., (London: Sweet and Maxwell, 2003).
- Ghuri, Pervez N. et al. *Managing Opportunity Development in Business Networks* (Hampshire: Palgrave, 2005).
- Giusta, Marina Della, Uma S. Kambhampati & Robert Wade. *Critical Perspectives on Globalization* (Cheltenham: Edward Elgar Publishing, 2006).
- Glowka, Lyle et al. *A Guide to the Convention on Biological Diversity* (Geneva: IUCN, 1994).
- Gokcekus, Huseyin et al. *Survival and Sustainability: Environmental Concerns in the 21st Century* (London: Springer, 2011).
- Graber, C B & Murri-Nenova, M, eds. *Intellectual Property and Traditional Cultural Expressions in a Digital Environment* (Cheltenham: Edward Elgar, 2008).
- Graber, Christoph B. & Jessica Christine Lai. *Indigenous Cultural Heritage and Fair Trade: Voluntary Certification Standards in the Light of WIPO and WTO Law and Policymaking* (Lucerne: The i-call Research Centre, 2011).
- Gready, Paul & Ensor, Jonathan. *Reinventing Development? Translating Rights-Based Approaches from Theory into Practice* (London: Zed Books, 2005).
- Greer, Jed & Kenny Bruno. *Greenwash and Corporate Environmentalism* (Penang: Third World Network & The Apex Press, 1997).
- Haanappel, Peter P. C. *The Law and Policy of Air Space and Outer Space: A Comparative Approach* (Frederick: Kluwer Law International, 2003).
- Halberg, Niels et al, eds. *Global Development of Organic Agriculture* (Oxfordshire: CABI Publishing, 2006).

- Hall, Budd L et al. *Indigenous Knowledges in Global Contexts: Multiple Readings of Our World* (Toronto: University of Toronto Press, 2000).
- Hansen, Stephen A. & Justin W van Fleet. *A Handbook on Issues and Options for TK Holders in Protecting their Intellectual Property and Maintaining Biological Diversity* (Washington, DC: American Association for the Advancement of Science, 2003).
- Hauser, Susan Carol. *Wild Rice Cooking: History, Natural History, Harvesting, and Lore* (Guilford: Globe Pequot, 2004).
- Havkin-Frenkel, D. & F. C. Belanger, eds. *Handbook of Vanilla Science and Technology* (Oxford: Wiley-Blackwell, 2010).
- Hayden, Cori. *When Nature Goes Public: the Making and Unmaking of Bioprospecting in Mexico* (Princeton: Princeton University Press, 2003).
- Hazell, Peter B.R. & C. Ramasamy, eds. *The Green Revolution Reconsidered: The Impact of High-Yielding Rice Varieties in South India* (Baltimore: Johns Hopkins University Press, 1991).
- Heath, C. & A.K. Sanders, eds. *New Frontiers of Intellectual Property Law: IP and Cultural Heritage, Geographical Indications, Enforcement, Overprotection* (Oxford: Hart Publishing, 2005).
- Held, David & Anthony G McGrew. *The Global Transformations Reader: An Introduction to the Globalization Debate* (Cambridge: Wiley-Blackwell, 2003).
- Herring, Ronald. *Transgenics and the Poor: Biotechnology in Development Studies* (Oxford: Routledge, 2008).
- Hobsbawm, Eric & Terence Ranger, eds. *The Invention of Tradition* (Cambridge: Cambridge University Press, 1992).
- Hoffman, Barbara T. *Art and Cultural Heritage: Law, Policy, and Practice* (New York: Cambridge University Press, 2006).
- Houghton, John & Peter Sheehan. *A Primer on the Knowledge Economy* (Victoria: Centre for Strategic Economic Studies, 2000).
- Hugenholtz, P. Bernt & Lucie Guibault, eds. *The Future of the Public Domain* (The Hague: Kluwer Law International, 2006).
- Ilias, Shayerah. *Intellectual Property Rights and International Trade* (New York: Nova Publishers, 2008).

- Inglis, Julian T, ed. *Traditional Ecological Knowledge: Concepts and Cases* (Ontario: International Program on Traditional Ecological Knowledge and International Development Research Centre, 1993).
- Jaffe, Adam B, et al. *Patents, Citations, and Innovations: A Window on the Knowledge Economy* (Cambridge: MIT Press, 2005).
- Janke, Terri. *Minding Culture: Case Studies on Intellectual Property and Traditional Cultural Expressions* (Geneva: World Intellectual Property Organization, 2003).
- Jasanoff, Sheila & Marybeth Martello, eds. *Earthly Politics: Local and Global in Environmental Governance* (Cambridge: MIT Press, 2004).
- Jehoram, Herman Cohen. *Protection of Geographic Denominations of Goods and Services* (Alphen aan den Rijn: Sijthoff & Noordhoff, 1980).
- Joerges, Christiane & Ernst-Ulrich Petersmann, eds. *Transnational Trade Governance and Social Regulation: Tensions and Interdependencies* (Oxford: Hart, 2006).
- Joseph, Benny. *Environmental Studies* (New Delhi: Tata McGraw-Hill, 2009).
- Kesan, Jay P. *Agricultural Biotechnology and Intellectual Property: Seeds of Change* (Oxfordshire: CABI, 2007).
- Khor, Martin. *Rethinking Globalization: Critical Issues and Policy Choices* (Dhaka: Zed Books, 2001).
- _____. & Kok Peng. *Intellectual Property, Biodiversity, and Sustainable Development: Resolving the Difficult Issues* (London: Zed Books, 2002).
- Kilham, Christopher. *Kava Medicine Hunting in Paradise: The Pursuit of a Natural Alternative to Anti-Anxiety Drugs and Sleeping Pills* (Rochester: Park Street Press, 1996).
- King, Robert C. et al. *A Dictionary of Genetics* (New York: Oxford University Press US, 2006).
- Kloppenburg, Jack Ralph. *First the Seed: The Political Economy of Plant Biotechnology* (Madison: University of Wisconsin Press, 2004).
- _____. ed. *Seeds and Sovereignty: Debate over the Use and Control of Plant Genetic Resources* (Durham: Duke University Press, 1987).
- Kneen, Brewster. *The Tyranny of Rights* (Ottawa: The Ram's Horn, 2009).

- Kono, Toshiyuki, ed. *Intangible Cultural Heritage and Intellectual Property: Communities, Cultural Diversity and Sustainable Development* (Antwerp: Intersentia, 2009).
- Kramer, Randall A, et al, *Last Stand: Protected Areas and the Defense of Tropical Biodiversity* (New York: Oxford University Press, 1997).
- Krikorian, Gaelle & Amy Kapczynski, eds. *Access to Knowledge in the Age of Intellectual Property* (New York: Zone Books, 2010).
- Ladas, Stephen Pericles. *Patents, Trademarks, and Related Rights: National and International Protection, Volume III* (Cambridge: Harvard University Press, 1975).
- Landes, William M. & Richard A. Posner. *The Economic Structure of Intellectual Property Law* (Cambridge: Harvard University Press, 2003).
- Lea, David. *Property Rights, Indigenous People and the Developing World: Issues From Aboriginal Entitlement to Intellectual Ownership Rights* (Danvers: BRILL, 2008).
- Leskien, Dan & Michael Flitner. *Intellectual Property Rights and Plant Genetic Resources: Options for A Sui Generis System* (Rome: Biodiversity International, 1997).
- Lesser, H, ed. *Transitions in Agbiotech: Economics of Strategy and Policy Proceedings of NE-165 Conference* (Washington, D.C.: Food Marketing Policy Center, 2000).
- Lewin, Bryan et al. *Coffee Markets New Paradigms in Global Supply and Demand* (Washington, DC: The International Bank for Reconstruction and Development, 2004).
- Lewinski, Silke von, ed. *Indigenous Heritage and Intellectual Property* (The Hague: Kluwer Law International, 2004).
- _____. *Indigenous Heritage and Intellectual Property: Genetic Resources, Traditional Knowledge and Folklore* (Bedfordshire: Kluwer Law International, 2009).
- Lloyd, Ian J. *Information Technology Law*, 4th ed, (Oxford: Oxford University Press, 2004).
- Lockie, Stewart & David, Carpenter, eds. *Agriculture, Biodiversity and Markets: Livelihoods and Agroecology in Comparative Perspective* (London/Washington: Earthscan, 2010).
- Macmillan, Fiona & Kathy Bowrey, ed. *New Directions in Copyright Law* (Cheltenham: Edward Elgar, 2006).

- Madeley, John. *Food for All: The Need For Anew Agriculture* (London: Zed Books, 2002).
- Maffi, Luisa. *Endangered Languages, Endangered Knowledge* (Oxford: Blackwell Publishers, 2002).
- Mallarach, Josep-Maria. *Protected Landscapes and Cultural and Spiritual Values* (Heidelberg: Kasperek Verlag, 2009).
- Mariani, Meredith T. *The Intersection of International Law, Agricultural Biotechnology, and Infectious Disease* (Leiden: BRILL, 2007).
- Maskus, Keith E, ed. *The WTO, Intellectual Property Rights and the Knowledge Economy: Critical Perspectives on the Global Trading System and the WTO* (Cheltenham: Edward Elgar, 2004).
- _____. & Jerome H Reichman, eds. *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime* (Cambridge: Cambridge University Press, 2005).
- Matthews, Duncan. *Intellectual Property and Development: The Role of NGOs and Social Movements* (Cheltenham: Edward Elgar Publishing, 2011).
- May, Christopher. *The Global Political Economy of Intellectual Property Rights: The New Enclosures* (London: Routledge, 2000).
- McManis, Charles R. *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (London: Earthscan Publications, 2007).
- Meléndez-Ortiz, Ricardo & Pedro Roffe. *Intellectual Property and Sustainable Development: Development Agendas in A Changing World* (Cheltenham: Edward Elgar Publishing, 2009).
- Merino, Leticia & Jim Robson, eds. *Managing the Commons: Indigenous Rights, Economic Development and Identity* (Mexico: CCMSS, 2005).
- Merino, Leticia & Jim Robson, eds. *Managing the Commons: Indigenous Rights, Economic Development and Identity* (Mexico: CCMSS, 2005).
- Mgbeoji, Ikechi. *Global Biopiracy: Patents, Plants and Indigenous Knowledge* (Vancouver: UBC Press, 2005).
- Miller, Kenton & Laura Tangle. *Trees of Life: Saving Tropical Forests and their Biological Wealth* (Boston: Beacon Press, 1991).

- Moore, Adam D, ed. *Intellectual Property: Moral, Legal and International Dilemmas* (New York: Rowman and Littlefield, 1997).
- Morrison, R. J. & Linda Crowl, eds. *Science of Pacific Island Peoples: Land Use and Agriculture* (Auckland: South Pacific Books, 1994).
- Mugabe, J. et al, eds. *Access to Genetic Resources: Strategies for Sharing Benefits* (Nairobi: African Center for Technology Studies Press, 1997).
- Nair, Latha R & Rajendra Kumar. *Geographical Indications: A Search for Identity* (New Delhi: LexisNexis Butterworths, 2005).
- Najam, Adil et al, eds. *Trade and Environment a Resource Book* (Geneva: International Institute for Sustainable Development, 2007).
- National Research Council Rediscovering Geography Committee, *Rediscovering Geography: New Relevance for Science and Society* (Washington: National Academies Press, 1997).
- Netanel, Neil Weinstock. *The Development Agenda: Global Intellectual Property and Developing Countries* (London: Oxford University Press, 2009).
- Niec, H, ed. *Cultural Rights and Wrongs: A Collection of Essays in Commemoration of the 50th Anniversary of the Universal Declaration of Human Rights* (Paris: UNESCO Publishing, 1998).
- de Carvalho, Nuno Pires. *The TRIPS Regime of Patent Rights* (The Hague: Kluwer Law International, 2010).
- Nwokeabia, H. *Why Industrial Revolution Missed Africa: A 'Traditional Knowledge' Perspective, Economic* (Addis Ababa: United Nations Commission for Africa, 2001).
- O'Connor, Bernard. *The Law of Geographical Indications* (London: Cameron May, 2004).
- Oguamanam, Chidi. *International Law and Indigenous Knowledge: Intellectual Property, Plant Biodiversity, and Traditional Medicine* (Toronto: University of Toronto Press, 2006).
- Oppenheim, Lassa. *International Law: A Treatise, Volume 1*, 3d ed., (Clark: The Law Book Exchange, 2005).
- Organization for Economic Co-Operation and Development, *The Knowledge-Based Economy* (Paris: OECD, 1999).

- Ottman, Jacquelyn. *The New Rules of Green Marketing: Strategies, Tools, and Inspiration for Sustainable Branding* (Sheffield: Berrett-Koehler Publishers, 2011).
- Oviedo, G. *Indigenous and Traditional Peoples of the World and Eco-region Conservation* (Gland: WWF-World Wide Fund for Nature, 2000).
- Page, Edward & M. R. Redclift. *Human Security and the Environment: International Comparisons* (Cheltenham: Edward Elgar Publishing, 2002).
- Pagiola, Stefano et al. *Selling Forest Environmental Services* (London: Earthscan Publications, 2002).
- Parmalee, Thomas. *Genetic Engineering* (Edina: ABDO Group, 2008).
- Payoyo, Peter Bautista. *Ocean Governance: Sustainable Development of the Seas* (New York: The United Nations University, 1994).
- Pellew, Robin, ed. *Global Biodiversity Assessment - United Nations Environment Program* (Cambridge: Cambridge University Press, 1995).
- Perrings, C.A. et al, eds. *Biodiversity Conservation* (Amsterdam: Kluwer, 1995).
- Petersmann, Ernst-Ulrich, ed. *Developing Countries in the Doha Round: WTO Decision-making Procedures and Negotiations on Trade in Agriculture and Services* (San Domenico di Fiesole: The Robert Schuman Centre for Advanced Studies, 2005).
- Pettigrew, Jane & Bruce Richardson. *The New Tea Companion: A Guide to Teas throughout the World* (London: Benjamin Press, 2005).
- Phillips, Peter & Chika Onwuekwe, eds. *Accessing and Sharing the Benefits of the Genomics Revolution* (Dordrecht: Springer Publishers, 2007).
- Pieterse, Jan Nederveen. *Development Theory: Deconstructions/Reconstructions* (London: Sage Publications Ltd, 2001).
- Posey, Darrell Addison. *Cultural and Spiritual Values of Biodiversity* (Nairobi: United Nations Environment Program, 1999).
- _____. & Graham Dutfield. *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities* (Ottawa: IDRC, 1996).
- Pugatch, Meir Perez. *The Intellectual Property Debate: Perspectives From Law, Economics and Political Economy* (Cheltenham: Edward Elgar Publishing, 2006).
- Rao, C.P. *Marketing and Multicultural Diversity* (Hampshire: Ashgate Publishing, 2006).

- Raynolds, Laura T, Douglas L. Murray & John Wilkinson. *Fair Trade: the Challenges of Transforming Globalization* (Oxon: Routledge, 2007).
- Robert P. Merges et al. *Intellectual Property in the New Technological Age* (New York: Aspen, 1997).
- Robinson, Daniel F. *Confronting Biopiracy: Challenges, Cases and International Debates* (London: Earthscan, 2010).
- Rooney, David et al, eds. *Handbook on the Knowledge Economy* (Cheltenham: Edward Elgar, 2005).
- Rubik, Frieder & Paolo Frankl. *The Future of Eco-Labeling: Making Environmental Product Information Systems Effective* (London: Greenleaf Pub., 2005).
- Sanders, Anselm Kamperman & Christopher Heath. *New Frontiers of Intellectual Property Law: IP and Cultural Heritage - Geographical Indications - Enforcement – Overprotection* (Oxford: Hart Publishing, 2005).
- Sarkar, R.M., eds. *Indigenous Knowledge in Traditional Folk Panorama: Genesis, Development and Applications* (New Delhi: Serials Publications, 2011).
- Sarris, Alexander & David Hallam. *Agricultural Commodity Markets and Trade: New Approaches to Analyzing Market Structure and Instability* (Cheltenham: Edward Elgar Publishing, 2006).
- Scafidi, Susan. *Who Owns Culture? Appropriation and Authenticity in American Law* (New Jersey: Rutgers University Press, 2005).
- Schechter, Frank I. *The Historical Foundations of the Law relating to Trade Marks* (New York: Columbia University Press, 1925).
- Schrijver, Nico. *Sovereignty over Natural Resources: Balancing Rights and Duties* (Cambridge: Cambridge University Press, 1997).
- Scott, A.J. *The Cultural Economy of Cities* (London: Sage, 2000).
- Scrinis, Gyorgy. *Colonizing the Seed Genetic Engineering and Techno-Industrial Agriculture* (Melbourne: Friends of the Earth, 1995).
- Sell, Susan K. *Private Power, Public Law: The Globalization of Intellectual Property Rights* (Cambridge: Cambridge University, 2003).
- Sen, Amartya. *Development as Freedom* (London: Alfred A. Knopf, 1999).

- _____. *Poverty and Famines: An Essay on Entitlement and Deprivation* (New York: Oxford University Press, 1982).
- Sengupta, Arjun, et al. *Reflections on the Right to Development* (New Delhi: Sage, 2005).
- Shannon, Thomas Anthony. *An Introduction to Bioethics* (Mahwah: Paulist Press, 1997).
- Sherman, Brad & Alian Strowell, eds. *Of Authors and Origins: Essays on Copyright Law* (New York: Oxford University Press, 1994).
- Sherman, Brad & Lionel Bently. *The Making of Modern Intellectual Property Law – The British Experience* (Cambridge: Cambridge University Press, 1999).
- Shiva, Vandana. *Biopiracy: The Plunder of Nature and Knowledge* (London: Zed Books, 1997).
- _____. *Protect or Plunder? Understanding Intellectual Property Rights* (London: Zed Books, 2001).
- _____. *Staying Alive: Women, Ecology and Development* (New York: Palgrave Macmillan, 1988).
- _____. & Gitanjali Bedi. *Sustainable Agriculture and Food Security: The Impact of Globalisation* (Thousand Oaks: Sage Pub, 2002).
- Smelser, Neil J. & Richard Swedberg, eds. *The Handbook of Economic Sociology* (Chechester: Princeton University Press and Russell Sage Foundation, 2005).
- Smith, Michael Ernest. *The Aztecs* (Victoria: Wiley-Blackwell, 2003).
- Srivastava, Jitendra et al. “Biodiversity and Agriculture: Implications for Conservation and Development” (Washington: The World Bank, 1996).
- Stenson, Anthony J. & Tim S. Gray. *The Politics of Genetic Resource Control* (London: Macmillan Press Ltd. 1999).
- Stevens, Christopher et al. *The WTO Agreement on Agriculture and Food Security* (London: Commonwealth Secretariat, 2000)
- Stevenson, Steve. *Values-Based Food Supply Chains: Executive Summary* (Ames: The Center for Integrated Agricultural Systems, 2009).
- Sutton, M.Q. & E. N. Anderson. *Introduction to Cultural Ecology* (Walnut Creek: AltaMira Press, 2004).

- Swanson, Timothy M. *Intellectual Property Rights and Biodiversity Conservation: An Interdisciplinary Analysis of the Values of Medicinal Plants* (Cambridge: Cambridge University, 1998).
- Swedberg, R & NJ. Smelser. *The Handbook of Economic Sociology* (Princeton: Princeton University Press, 1995).
- Swiderska, Krystyna et al. *Protecting Community Rights over TK: Implications of Customary Laws and Practices. Key Findings and Recommendations 2005-2009* (London: IIED, 2009).
- Throsby, David. *Economics and Culture* (Cambridge: Cambridge University Press, 2001).
- Twarog, Sophia & Promila Kapoor, eds. *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions* (New York; Geneva: UN, 2004).
- UNDP, *Human Development Report* (New York: Oxford University Press, 2001).
- United Nations High Commissioner for Human Rights, *Frequently Asked Questions on A Human Rights-Based Approach to Development Cooperation* (New York: United Nations, 2006).
- van Huylenbroeck, Guido & Guy Durand. *Multifunctional Agriculture: A New Paradigm for European Agriculture and Rural Development Perspectives on Rural Policy and Planning* (Hampshire: Ashgate, 2003).
- Vaver, David. *Intellectual Property Rights: Critical Concepts in Law* (New York: Routledge, 2006).
- Vincent Lebot, Mark Merlin & Lamont Lindstrom. *Kava: The Pacific Elixir: The Definitive Guide to Its Ethnobotany, History, and Chemistry* (Rochester: Inner Traditions International, 1997).
- Waelde, Charlotte & Hector MacQueen. *Intellectual Property: The Many Faces of The Public Domain* (Cheltenham: Edward Elgar, 2007).
- Wallerstein, Mitchel B, et al., eds. *Global Dimensions of Intellectual Property Rights in Science and Technology* (Washington: National Academy Press, 1993).
- Willem Grosheide, ed. *Intellectual Property and Human Rights: A Paradox* (Cheltenham: Edward Elgar, 2010).
- Windfuhr, Michael & Jonsén, Jennie. *Food Sovereignty: Towards Democracy in Localised Food Systems* (Warwickshire: ITDG Publishing, 2005).

WIPO, *Intellectual Property Handbook: Policy, Law and Use* (Geneva: World Intellectual Property Organization, 2004).

_____. *Introduction to Intellectual Property: Theory and Practice* (London: Kluwer Law International, 1997).

_____. *Model Law for Developing Countries on Appellations of Origin and Indications of Source* (Geneva: WIPO, 1975).

Wong, Tzen & Graham Dutfield. *Intellectual Property and Human Development: Current Trends and Future Scenarios* (Cambridge: Cambridge University Press, 201).

World Bank, *World Development Report: Agriculture for Development* (Washington DC: The International Bank for Reconstruction and Development / The World Bank, 2007).

Xu, Yi-Chong & Patrick Moray Weller. *The Governance of World Trade: International Civil Servants and the GATT/WTO* (Cheltenham: Edward Elgar, 2004).

Ziff, Bruce H. & Pratima V. Rao. *Borrowed Power: Essays on Cultural Appropriation* (New Brunswick: Rutgers University Press, 1997).

SECONDARY MATERIAL: ARTICLES

Abrams, David S. “Did TRIPS Spur Innovation?: An Analysis of Patent Duration and Incentives to Innovate” (2009) 157 U Pa L Rev 1613.

Adair, John R. “The Bioprospecting Question: Should the United States Charge Biotechnology Companies for the Commercial Use of Public Wild Genetic Resources” (1997) 24 Ecology L Q 131.

Addor, Felix et al. “Geographical Indications: Important Issues for Industrialized and Developing Countries” (2003) 74 The IPTS Report.

Addor, F. & Grazioli, A. “Geographical Indications beyond Wines and Spirits—A Roadmap for a Better Protection for Geographical Indications in the WTO TRIPS Agreement” (2002) 5 J World Intellect Property 865.

Adegbomire, Arinolayemi A. & Arnold, L. Taylor. “Origin, Prominence, Profit, and Consumer Confusion: An Analysis of the Global Debate on Geographical Indication Protection Systems” (2004) 4 Wake Forest Intell Prop L J 68.

Adinolfi, Felice et al. “Dedicated and Generic Marketing Strategies: The Disconnection between Geographical Indications and Consumer Behaviour in Italy” (2011) 113 British Food Journal 419.

- Aerni, Philipp. "Agricultural Biotechnology and its Contribution to the Global Knowledge Economy" (2007) 107 *Adv Biochem Engin/Biotechnol* 69.
- Agdomar, Michelle. "Removing the Greek from Feta and Adding Korbel to Champagne: The Paradox of Geographical Indications in International Law" (2008) 18 *Fordham Intell Prop Media & Ent LJ* 541.
- Agrawal, Arun. "Dismantling the Divide between Indigenous and Scientific Knowledge" (1995) 26 *Development and Change* 413.
- Ahmed, Mohsen Al Attar. "Monocultures of the Law: Legal Sameness in Restructuring of Global Agriculture" (2006) 11 *Drake J Agric L* 139.
- Akerlof, George. "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism" (1970) 84 *The Quarterly Journal of Economics* 488.
- Albayrak, Mevhibe & Erdoan Gunes. "Traditional Foods: Interaction between Local and Global Foods in Turkey" (2010) 4 *African Journal of Business Management* 555.
- Alsadon, A. A. & M.A. Wahb-allah. "Yield Stability for Tomato Cultivars and Their Hybrids under Arid Conditions" (2007) 760 *Acta Hort*.
- Alter, Joan Martinez. "International Biopiracy versus the Value of Local Knowledge" (2000) 11 *Capitalism Nature Socialism* 59.
- Altieri, Miguel A. "Can Biotechnology End Hunger? No: Poor Farmers Won't Reap the Benefits" (2000) 119 *Foreign Policy* 123.
- _____. "The Ecological Impacts of Large-Scale Agrofuel Monoculture Production Systems in the Americas" (2009) 29 *Bulletin of Science Technology & Society* 236.
- Anders, Sven & Julie A. Caswell. "The Benefits and Costs of Proliferation of Geographical Labelling for Developing Countries" (2009) 10 *The Estey Centre Journal of International Law and Trade Policy* 73.
- Angermeier, Paul L. "Does Biodiversity Include Artificial Diversity?" (1994) 8 *Conservation Biology* 600.
- Aoki, Keith. "Seeds of Dispute: Intellectual Property Rights and Agricultural Biodiversity" (2009) 3 *Golden Gate U Env'tl LJ* 79.
- Archer, Hadley et al. "The Impact of Forest Certification Labelling and Advertising: An Exploratory Assessment of Consumer Purchase Intent in Canada" (2005) 81 *The Forestry Chronicle* 229.

- Arezzo, Emanuela. "Struggling Around the Natural Divide: The Protection of Tangible and Intangible Indigenous Property" 25 *Cardozo Arts & Ent L J* 367.
- Atun, Rifat A, et al. "Innovation, Patents and Economic Growth" (2007) 11 *Innovation, Patents and Economic Growth* 279.
- Auer, Andreas. "Legal Implications of Accession to the European Union on Geographical Indications and Designations of Origin for Agricultural Products and Foodstuffs" (2008) 2 *Croatian Yearbook of European Law and Policy* 137.
- Aylward, David. "Towards a Cultural Economy Paradigm for the Australian Wine Industry" (2008) 26:4 *Prometheus* 373.
- Barham, Elizabeth. "Towards A Theory of Values-Based Labelling" (2002) 19 *Agriculture and Human Values* 349.
- _____. "Translating Terroir: The Global Challenge of French AOC Labelling" (2003) 19:2 *Journal of Rural Studies* 127.
- Barsh, Russel Lawrence. "How Do You Patent A Landscape?" (1999) 8:1 *International Journal of Cultural Property* 14.
- Becker, Lawrence C. "Deserving to Own Intellectual Property" (1993) 68 *Chi-Kent L Rev* 609.
- Beckerman-Roda, Andrew. "The Problem with Intellectual Property Rights: Subject Matter Expansion" 13 *Yale J L & Tech* 35.
- Bendekgey, Lee & Caroline H Mead. "International Protection of Appellations of Origin and Other Geographic Indications" (1992) 82 *Trademark Rep* 781.
- Berard, Laurence & Philippe Marchenay. "Local Products and Geographical Indications: Taking Account of Local Knowledge and Biodiversity" (2006) 187 *International Special science Journal* 109-116.
- Berg, Trygve. "Landraces and Folk Varieties: A Conceptual Reappraisal of Terminology" (2009) 166 *Euphytica* 423.
- Blakeney, Michael. "Proposals for the International Regulation of Geographical Indications" (2001) 4 *J World Intell Prop* 629.
- _____. "Protecting Expressions of Australian Aboriginal Folklore under Copyright Law" (1995) 9 *EIPR* 442.
- _____. "Protection of Traditional Knowledge by Geographical Indications" (2009) 3 *International Journal of Intellectual Property Management* 357.

- _____. "Protecting expressions of Australian Aboriginal Folklore under Copyright Law" (1995) 9 EIPR 442.
- _____. & G. Evans. "The Protection of Geographical Indications after Doha: Quo Vadis?" (2006) 9 JIEL 575.
- Blowfield, Mick. "Ethical Trade: A Review of Developments and Issues" (1999) 20 Third World Quarterly 753.
- Borchardt, Marilyn. "Global Small-Scale Farmers' Movement Developing New Trade Regimes" (2005) 28:97 Food First News & Views 1.
- Borowiak, Craig. "Farmers' Rights: Intellectual Property Regimes and the Struggle over Seeds" (2004) 32 Politics & Society 511.
- Borrás, Susana. "Legitimate Governance of Risk at the EU Level? The Case of Genetically Modified Organisms" (2006) 73 Technological Forecasting and Social Change 61 at 68.
- Bosselmann, Klaus. "Plants and Politics: The International Legal Regime Concerning Biotechnology and Biodiversity" (1996) 7 Colo J Int'l Env L & Pol'y 129.
- Bowen, Sarah et al. "Geographical Indications, *Terroir*, and Socioeconomic and Ecological Sustainability: The Case of Tequila" (2009) 24 Journal of Rural Studies 108.
- _____. "Development from Within? The Potential for Geographical Indications in the Global South" (2010) 13 J World Intell Prop 231.
- Bowers, Steven A. "Location, Location, Location: The Case against Extending Geographical Indication Protection under the TRIPS Agreement" (2003) 31 AIPLA Q J 129.
- Bowrey, Kathy. "Alternative Intellectual Property? Indigenous Protocols, Copyleft and New Juridifications of Customary Practices" (2006) Macquarie Law Journal 65.
- Bradley, A. Jane. "Intellectual Property Rights, Investment and trade in Services in the Uruguay Round: Laying the Foundations" (1987) 23 Stan J Int'l L 57.
- Bramley, C. & J.F. Kirsten. "Exploring the Economic Rationale for Protecting Geographical Indicators in Agriculture" (2007) 46 Agrekon 69.

- Bramley, Cerkia, et al. "The Economics of Geographical Indications: Towards A Conceptual Framework for Geographical Indication Research in Developing Countries" (2007) 46 *Agrekon* 109.
- Breckinridge, Robert E. "Reassessing Regimes: The International Regime Aspects of the European Union" (1997) 35 *Journal of Common Market Studies* 173.
- Broude, Tomer. "Taking 'Trade and Culture' Seriously: Geographical Indications and Cultural Protection in the WTO Law" (2005) 26 *U Pa J Int'l Econ L* 623.
- Brush, Stephen B. "Bioprospecting the Public Domain" (1999) 14 *Cultural Anthropology* 535.
- Brussaard, Lijbert et al. "Reconciling Biodiversity Conservation and Food Security: Scientific Challenges for A New Agriculture" (2010) 2 *Current Opinion in Environmental Sustainability* 1.
- Butler, Reg. "Expanding Sales for Rooibos & Honeybush" (2006) *Tea & Coffee Trade Journal* 1.
- Carroll, Michael W. "The Struggle for Music Copyright" (2005) 57 *Fla L Rev* 907.
- Caswell, Julie A. & Sven Anders. "The Benefits and Costs of Proliferation of Geographical labelling for Developing Countries" (2010) 10 *The Estey Centre Journal of International Law and Trade Policy* 77.
- Chandola, H. V. "Basmati Rice: Geographical Indication or Mis-Indication" (2006) 9 *J of World Intell Prop* 166.
- Chapotin, Saharah Moon & Jeffrey D. Wolt. "Genetically Modified Crops for the Bio-economy: Meeting Public and Regulatory Expectations" (2007) 16 *Transgenic Res* 675.
- Charlier, Christophe & Mai-Anh. Ngo. "An analysis of the European Communities: Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs Dispute" (2007) 10 *J World Intell Prop* (2007) 171.
- Chavez, Mark A. "Gene Patenting: Do the Ends Justify the Means" (2003) 7 *Computer L Rev & Tech J* 255.
- Chen, Jim. "A Sober Second Look at Appellations of Origin: How the United States Will Crash France's Wine and Cheese Party" (1996) 5 *Minn J Global Trade* 29.
- _____. "There's No Such Thing as Biopiracy ... And It's a Good Thing Too" (2006) 37 *McGeorge Law Review* 1.

- Chengsi, Zheng. "On the Copyright Protection of Folklore and Other Legislation in China" (1996) 3 *China Patents and Trade Marks* 91.
- Chesmond, Rhonda. "Protection or Privatisation of Culture? The Cultural Dimension of the International Intellectual Property Debate on Geographical Indications of Origin" (2007) 29 *European Intellectual Property Review* 379.
- Chon, Margaret. "Intellectual Property and the Development Divide" (2006) 27 *Cardozo L Rev* 2821.
- Cleveland, D. A. & Murray, S. C. "The World's Crop Genetic Resources and the Rights of Indigenous Farmers" (1997) 37 *Current Anthropology* 477.
- Coerper, M.G. "The Protection of Geographical Indications in the United States of America, with Particular Reference to Certification Marks" (1990) *Industrial Property* 232.
- Colding, Johan & Carl Folke. "Social Taboos: 'Invisible' Systems of Local Resource Management and Biological Conservation" (2001) 11 *Ecological Applications* 584.
- Coleman, William D. & Melissa Gable. "Agricultural Biotechnology and Regime Formation: A Constructivist Assessment of the Prospects" (2002) 46 *International Studies Quarterly* 451.
- Conforto, David. "Traditional and Modern-Day Biopiracy: Redefining the Biopiracy Debate" (2004) 19 *J Envtl L & Litig* 357.
- Conrad, Albrecht. "The Protection of Geographical Indications in the TRIPS Agreement" (1996) 86 *Trademark Rep* 11.
- Coombe, Rosemary J. "Legal Claims to Culture in and Against the Market: Neoliberalism and the Global Proliferation of Meaningful Difference" (2005) 1 *Law, Culture and the Humanities* 35.
- _____. "Objects of Property and Subjects of Politics: Intellectual Property Laws and Democratic Dialogue" (1991) 69 *Texas Law Review* 1853.
- _____. "The Recognition of Indigenous Peoples' and Community TK in International Law" (2001) 14 *St. Thomas L Rev* 275.
- _____. "Protecting Traditional Environmental Knowledge and New Social Movements in the Americas: Intellectual Property, Human Right, or Claims to an Alternative Form of Sustainable Development" (2005) 17 *Fla J Int'l L* 115.

-
- Steven Schnoor & Mohsen Ahmed, "Bearing Cultural Distinction: Informational Capitalism and New Expectations for Intellectual Property" (2007) 40 UC Davis L Rev 891.
- Cornwall, Andrea & Celestine Nyamu-Musembi. "Putting the 'Rights-Based Approach' to Development into Perspective" (2004) 25:8 Third World Quarterly 1415.
- Correa, Carlos M. "Internationalization of the Patent System and New Technologies" (2002) 20 Wis Int'l LJ 523.
- Cottier, Thomas & Marion Panizzon. "Legal Perspectives on Traditional Knowledge: The Case for Intellectual Property Protection" (2004) 7 JIEL 371.
- Cotton, Amy P. "123 Years at the Negotiating Table and Still No Dessert? The Case in Support of TRIPS Geographical Indication Protections" (2007) 82 Chi-Kent L Rev 1295.
- Coulter, Robert T. "Commentary on the UN Draft Declaration on the Rights of Indigenous Peoples" (1994) 18 Cult Surv Q 37.
- Craig, Carys J. "Locke, Labour and Limiting the Author's Right: A Warning Against A Lockean Approach to Copyright" (2002) 28 Queens L J 1.
- Creditt, Emily C. "Terroir v. Trademarks: The Debate over Geographical Indications and Expansions to the TRIPS Agreement (2008) 11 Vand J Ent & Tech L 425.
- Dagne, Teshager "The Application of Intellectual Property Rights to Biological Resources: A Technique for Less Economically Developed Countries to Maintain Control over the Biological Resources in their Territories?" (2009) 17 African Journal of International and Comparative Law 150.
- Dano, Elenita C. "Biodiversity, Biopiracy and Ecological Debt" (2003) 1 Jubilee South Journal 7.
- Das, Kasturi. "International Protection of India's Geographical Indications with Special Reference to 'Darjeeling' Tea" (2006) 9 J World Intell Prop 459.
- de Beer, Jeremy. "Reconciling Property Rights in Plants" (2005) 8 J of World Intell Prop 5-31.
- de Carvalho, Nuno Pires. "The Problem of Gene Patents" (2004) 3 Wash U Global Stud L Rev 701.
- Demaine, Linda J. & Aaron Xavier Fellmeth. "Reinventing the Double Helix: A Novel and Nonobvious Reconceptualization of the Biotechnology Patent" (2002) 55 Stanford Law Review 303.

- Derenberg, Walter J. "The Influence of the French Code Civil on the Modern Law of Unfair Competition, (1955) 4 Am J Comp L 1.
- Devereu, Stephen. "Sen's Entitlement Approach: Critiques and Counter-critique" (2001) 29 Oxford Development Studies 245.
- Dixon, Jane. "A Cultural Economy Model for Studying Food Systems" (1999) 16 Agriculture and Human Values 152.
- Downes, David R. "How Intellectual Property Could Be A Tool to Protect Traditional Knowledge" (2000) 25 Colum J Env'tl L 253.
- _____. "New Diplomacy for the Biodiversity Trade: Biodiversity, Biotechnology, and Intellectual Property in the Convention on Biological Diversity" (1993) 4 Touro J Transnat'l L 1.
- Drahos, Peter. "Biotechnology Patents, Market and Morality" (1999) 21 European Intellectual Property Review 441.
- _____. "Developing Countries and International Intellectual Property Standard-Setting" (2002) 5J World Intell Prop 765.
- _____. "Four Lessons for Developing Countries from the Trade Negotiations Over Access to Medicines" (2007) 28 Liverpool Law Review 11.
- Drezner, Daniel. "Globalizers of the World, Unite!" (1998) 21 Washington Quarterly 209-226.
- Durdik, Paul. "Ancient Debate, New Technology: The European Community Moves to Protect Computer Databases" (1994) 12 BU Int'l LJ 153.
- Dutfield, Graham. "TRIPS-related Aspects of Traditional Knowledge" (2001) 33 Case Western Reserve Journal of International Law 233.
- _____. "The Public and Private Domains: Intellectual Property Rights in Traditional Knowledge" (2000) 21 Science Communication 274.
- E. Mathias, P. Mundy & I. Köhler-Rollefso. "Marketing Products from Local Livestock Breeds: An Analysis of Eight Cases" (2010) 47 Animal Genetic Resource 59.
- Echols, Marsha A. "Geographical Indications for Foods" (2003) 47 Journal of African Law 199.
- Eisenberg, Rebecca S. "Patenting the Human Genome" (1990) 39 Emory L J 721.

- _____. "Why the Gene Patenting Controversy Persists" (2002) 77 *Academic Medicine* 1381.
- Elkin-Koren, Niva. "Copyright Law and Social Dialogue on the Information Superhighway: The Case against Copyright Liability of Bulletin Board Operators" (1995) 13 *Cardozo Arts & Entertainment Law Journal* 345.
- Emslie, John J. "Labelling Programs as a Reasonably Available List Restrictive Trade Measure Under Art. XX's Nexus Requirement" (2005) 30 *Brook J Intl L* 510.
- Engel, K. H. et al, "Current and Future Benefits from the Use of GM Technology in Food Production" (2002) 127 *Toxicology Letters* 329.
- Erstling, Jay. "Using Patents to Protect Traditional Knowledge" (2009) 15 *Tex Wesleyan L Rev* 295.
- Evans, G. E. "The Comparative Advantages of Geographical Indications and Community Trade Marks for the Marketing of Agricultural Products" (2010) 29 *Yearbook of European Law* 224.
- Evenson, R. E. "Intellectual Property Rights, Access to Plant Germplasm, and Crop Production Scenarios in 2020" (1999)39 *Crop Science* 1630.
- Fairweather, N Ben & Simon Rogerso. "The Problems of Global Cultural Homogenisation in a Technologically Dependent World" (2003) 1 *Info, Comm & Ethics in Society* 7.
- Farley, Christine Haight. "Conflict between US law and international Treaties Concerning Geographical Indications" (2001) 22 *Whittier L Rev* 73.
- _____. "Protecting Folklore and Indigenous Peoples: Is Intellectual Property the Answer?" (1997) 30 *Connecticut Law Review* 14.
- Fautrel, Vincent et al. "Protected Geographical Indications for ACP Countries: A Solution or a Mirage?"(2009) 8 *Trade Negotiations Insights* 8.
- Fischer, Rainer & Neil Emans. "Molecular Farming of Pharmaceutical Proteins" (2000) 9 *Transgenic Research* 279.
- Fisher III, William W. "Property and Contract on the Internet" (1998) 73 *Chi-Kent L Rev* 1203.
- _____. "Reconstructing the Fair Use Doctrine" (1988) 101 *Harv L Rev* 1659-1795.

- Fitzgerald, Brian. "Theoretical Underpinning of Intellectual Property: 'I am a Pragmatist But Theory is my Rhetoric'" (2003) 16 *Can J L & Jurisprudence* 179.
- Fleming, Lee & Olav Sorenson. "Technology as A Complex Adaptive System: Evidence from Patent Data" (2001) 30 *Research Policy* 1019.
- Florida, Richard & Martin Kenney. "The New Age of Capitalism: Innovation-Mediated Production" (1993) 25 *Futures* 637.
- Fonte, Maria. "Slow Food's Presidia: What do Small Producers do with Big Retailers?" (2006) 12 *Research in Rural Sociology and Development* 203.
- Fridell, Gavin "Fair Trade and Neo-liberalism: Assessing Emerging Perspectives" (2006) 33 *Latin Am Persp* 20.
- Frigo, Manlio. "Cultural Property V. Cultural Heritage: A 'Battle of Concepts' in International Law?" (2004) 86: 854 *International Review of the Red Cross* 361.
- Gade, Daniel. "Tradition, Territory, and Terroir in French Viniculture: Cassis, France, and Appellation Controlee" (2004) 94 *Annals of the Association of American Geographers* 848.
- Gadgil, Madhav, et al. "Indigenous Knowledge for Biodiversity Conservation" (1993) 22 *Biodiversity: Ecology, Economics, Policy* 151.
- Gangjee, Dev. "Quibbling Siblings: Conflicts between Trade Marks and GIs" (2007) 82 *Chicago-Kent L Rev* 1253.
- _____. "Say Cheese! A Sharper Image of Generic Use through the Lens of Feta" (2007) 29 *European Intellectual Property Review* 172.
- Garcia, Claude et al. "Geographical Indications and Biodiversity in the Western Ghats, India: Can Labelling Benefit Producers and the Environment in a Mountain" (2007) 27:3 *Mountain Research and Development* 206.
- Garg, Ajay K. et al. "A Study of Quality Management in Indian Handicraft Units" (2005) 6 *Global Business Review* 189.

- Gepts, Paul. "Who Owns Biodiversity, and How Should the Owners Be Compensated?" (2004) 134 *Plant Physiology* 1295.
- Gervais, Daniel J. "Spiritual but not Intellectual? The Protection of Sacred Intangible Traditional Knowledge" (2003) 11 *Cardozo J Int'l & Comp L* 467.
- _____. "The Internationalization of Intellectual Property: New Challenges from the Very Old and the Very New" (2002) 12 *Fordham Intell Prop Media & Ent LJ* 929.
- _____. "The Lisbon Agreement's Misunderstood Potential" (2009) 1 *WIPO Journal: Analysis and Debate of Intellectual Property Issues* 87.
- _____. "Intellectual Property, Trade & Development: The State of Play" (2005) 74 *Fordham L. Rev.* 508.
- _____. "Traditional Knowledge: Are We Closer to the Answers? The Potential Role of Geographical Indications" (2009) *ILSA J of Int and Comp Law* 551.
- Getz, Christy & Aimee Shreck. "What Organic and Fair Trade Labels Do Not Tell Us: Towards a Place-Based Understanding of Certification" (2006) 30 *International Journal of Consumer Studies* 490.
- Ghosh, Shubha. "Reflections on the Traditional Knowledge Debate" (2003) 11 *Cardozo J Int'l & Comp L* 497.
- _____. "Traditional Knowledge, Patents, and the New Mercantilism (Part II)" (2003) 85 *J Pat & Trademark Off Soc'y* 885.
- Gibson, Johanna. "Intellectual Property Systems, Traditional Knowledge and the Legal Authority of Community" (2004) 26 *EIPR* 280.
- _____. "Markets in Tradition – Traditional Agricultural Communities in Italy and the Impact of GMOs" (2006) 3 *SCRIPT-ed* 248.
- Giovannucci, Daniele. "Value and Trends for Sustainable Coffees" (2002) *Tea & Coffee Trade Journal* 1.
- Godson, R. "Law of Patents" (1833) 15 *Hansard Col* 977.
- Goebel, Burkhardt. "Geographical Indications and Trademarks: The Road from Doha" (2003) 93 *TMR* 964.
- Goldberg, Stacy D. "Who Will Raise the White Flag? The Battle between the United States and the European Union Over the Protection of Geographical Indications" (2001) 22 *U Pa J Int'l Econ L* 107.

- Gómez-Pompa, Arturo & Andrea Kaus. "Taming the Wilderness Myth" (1992) 42 *BioScience* 271.
- Gonzalez, Carmen G. "Trade Liberalization, Food Security, and the Environment: The Neoliberal Threat to Sustainable Rural Development" (2004) 14 *Transnat'l L & Contemp Probs* 419.
- Goodman, Michael K. "Reading Fair Trade: Political Ecological Imaginary and the Moral Economy of Fair Trade Foods" (2004) 23 *Political Geography* 891.
- Gopalakrishnan, N. S. "Impact of Patent System on Traditional Knowledge" (1998) *CULR* 219.
- Grajal, Alejandro. "Biodiversity and the Nation State: Regulating Access to Genetic Resources Limits Biodiversity Research in Developing Countries" (1999) 13 *Conservation Biology* 6.
- Granovetter, Mark. "Economic Action and Social Structure: The Problem of Embeddedness" (1985) 91 *American Journal of Sociology* 481.
- Grant, Catherine "Geographical Indications: Implications for Africa" (2005) 6 *Tralac Trade Brief* 1.
- Grote, U. "Environmental Labeling, Protected Geographical Indications, and the Interests of Developing Countries" (2009) 10 *The Estey Centre Journal of International Law and Trade Policy* 94.
- Guerra, Jorge Larson "Geographical Indications and Biodiversity: Bridges Joining Distant Territories" (2004) 2 *Comment – Bridges* 17.
- Gutierrez, Eva. "Geographical Indicators: A Unique European Perspective on Intellectual Property" (2005) 29 *Hastings Int'l & Comp L Rev* 29.
- Halewood, Michael. "Indigenous and Local Knowledge in International Law: A Preface to Sui Generis Intellectual Property Protection" (1999) 44 *McGill L J* 953.
- Hamilton, Chris. "Biodiversity, Biopiracy and Benefits: What Allegations of Biopiracy Tell us about Intellectual Property" (2006) 6 *Developing World Bioethics* 158.
- Hamilton, Chris. "Biodiversity, Biopiracy and Benefits: What Allegations of Biopiracy Tell Us About Intellectual Property" (2006) 3 *Developing World Bioethics* 158.
- Hardon, Jaap. "National Sovereignty and Access to Genetic Resources" (1996) 27 *Biotechnology and Development Monitor* 24.

- Hart, Stuart L. "Beyond Greening: Strategies for a Sustainable World" (1996) *Harvard Business Review* 66.
- Heald, Paul J. "Your Friend in the Rain Forest': An Essay on the Rhetoric of Biopiracy" (2001) 11 *Cardozo J Int'l & Comp* 519.
- _____. "Trademarks and Geographical Indications: Exploring the Contours of the TRIPS Agreement" (1996) 29 *Vand J Transnat'l L* 635.
- Held, David. "Cosmopolitanism: Globalisation Tamed?" (2003) 29:4 *Review of International Studies* 465.
- Helfer, Laurence R. "Mediating Interactions in an Expanding International Intellectual Property Regime" (2004) 36 *Case W Res J Int'l L* 123.
- _____. "Regime Shifting: The TRIPS Agreement and New Dynamics of International Intellectual Property Lawmaking" (2004) 29 *Yale J Int'l L* 1.
- Hertel, Thomas W. et al. "Why Isn't the Doha Development Agenda More Poverty Friendly?" (2009) 23 *Review of Development Economics* 543.
- Hess, Martin. "'Spatial' Relationships? Towards A Reconceptualization of Embeddedness" (2004) 28 *Progress in Human Geography* 165.
- Higgins, Vaughan et al. "Building Alternative Agri-Food Networks: Certification, Embeddedness and Agri-Environmental Governance" (2008) 24 *Journal of Rural Studies* 15.
- Hinde, Sarah & Jane Dixon. "Reinstating Pierre Bourdieu's Contribution to Cultural Economy Theorizing" (2007) 43 *Journal of Sociology* 401.
- Hinrichs, C. Clare. "Embeddedness and Local Food Systems: Notes on Two Types of Direct Agricultural Market" (2000) 16:3 *Journal of Rural Studies* 295.
- Hirshleifer, Jack. "The Private and Social Value of Information and the Reward to Innovative Activity" (1971) 61 *American Economic Review* 561-574.
- Ho, Cynthia M. "Biopiracy and Beyond: A Consideration of Socio-Cultural Conflicts with Global Patent Policies" (2006) 39 *U Mich J L Ref* 433.
- Hudson, Ian & Mark Hudson. "Fair-trade Coffee: The Prospects and Pitfalls of Market Driven Social Justice: Brewing Justice: Fair-trade Coffee, Sustainability, and Survival: Fair-trade: The Challenges of Transforming Globalization" (2009) 17 *Historical Materialism* 237.

- Hughes, Justin. "Champagne, Feta, and Bourbon: The Spirited Debate Over Geographic Indications" (2006) 58 *Hastings L J* 299.
- _____. "The Personality Interest of Artists and Inventors in Intellectual Property" (1998) *Cardozo Arts & Ent LJ* 81-181.
- _____. "The Philosophy of Intellectual Property" (1988) 77 *Geo LJ* 287.
- Iorns, Catherine J. "Australia Ratification of International Labour Organization Convention No.169" (1993) 1 *Murdoch University Electronic Journal of Law*.
- Ismail, Zenobia & Tashil Fakir. "Trademarks or Trade Barriers? Indigenous Knowledge and the Flaws in the Global IPR System" (2004) 31 *International Journal of Social Economics* 173.
- Jackson, Lee Ann. "Agricultural Biotechnology and the Privatization of Genetic Information Implications for Innovation and Equity" (2000) 3 *J World Intell Prop* 825.
- _____.et al. "Utilizing and Conserving Agro-biodiversity in Agricultural Landscapes" (2007) 121 *Agriculture, Ecosystems and Environment* 196.
- Chambers, Jasemine. "Patent Eligibility of Biotechnical Inventions in the United States, Europe, and Japan: How Much Patent Policy is Public Policy" (2002) 34 *Geo Wash Int'l L Rev* 223.
- Jena, Pradyot R. & Ulrike Grote. "Changing Institutions to Protect Regional Heritage: A Case for Geographical Indications in the Indian Agrifood Sector" (2010) 28 *Development Policy Review* 217.
- Jervis, Herbert. "Impact of Recent Legal developments on the Scope and Enforceability of Biotechnology Patent Claims" (1994) 4 *Dick J Env'tl L & Pol'y*.
- Joly, Pierre-Benoit & Marie-Angele de Looze. "An analysis of Innovation Strategies and Industrial Differentiation through Patent Applications: The Case of Plant Biotechnology" (1996) 25 *Research Policy* 1028.
- Jones, Andrew. "Theorizing Practice in Economic Geography: Foundations, Challenges, and Possibilities" (2011) 35 *Progress in Human Geography* 366.
- Josling, Tim. "The War on Terroir: Geographical Indications as a Transatlantic Trade Conflict" (2006) 57 *Journal of Agricultural Economics* 337.
- Joubert, E. et al. "South African Herbal Teas: *Aspalathus linearis*, *Cyclopia* spp and *Athrixia phylicoides*—A Review" (2008) 119 *Journal of Ethnopharmacology* 376.

- Joyner, Christopher C. "Legal Implications of the Concept of the Common Heritage of Mankind" (1986) 35 *The International and Comparative Law Quarterly* 190.
- JR, Harlan. "Our Vanishing Genetic Resources" (1975) 188 *Science* 618.
- K, Lopetcharat et al. "Fish Sauce Products and Manufacturing: A Review" (2001) 17 *Food Reviews International* 65.
- Kadidal, Shayana. "Subject-Matter Imperialism? Biodiversity, Foreign Prior Art and the Neem Patent Controversy" (1997) 37 *J L & Tech* 371.
- Kapczynski, Amy. "The Access to Knowledge Mobilization and the New Politics of Intellectual Property" (2008) 117 *Yale L J* 262.
- Kellermann, Jherime L. et al. "Ecological and Economic Services Provided by Birds on Jamaican Blue Mountain Coffee Farms" (2008) 22 *Conservation Biology* 1177.
- Kemp, Deborah J. & Forsythe, Lynn M. "Trademarks and Geographical Indications: A Case of California Champagne" (2006) 10 *Chap L Rev* 257.
- Kenny, Gadi. "Intellectual Property Rights of Darjeeling Tea in the Age of Globalization and World Trade" (2004) 752 *Trade & Environment Database Journal*.
- Kerr, William A. "Enjoying a Good Port with a Clear Conscience: Geographic Indicators, Rent Seeking and Development" (2006) 7 *The Estey Centre Journal of International Law and Trade Policy* 1.
- Kessie, Edwini. "The Doha Development Agenda at a Crossroads: What Are the Remaining Obstacles to the Conclusion of the Round: Part II?" (2011) *European Yearbook of International Economic Law* 403.
- Kireeva, Irina & Bernard O'Connor. "Geographical Indications and the TRIPS Agreement: What Protection is Provided to Geographical Indications in WTO Members?" (2010) 13 *Journal of World Intellectual Property* 275.
- Kneafsey, Moya, et al. "Exploring the Dimensions of Culture Economies in Rural West Wales" 41:3 *Sociologia Ruralis* 296.
- Kochhar, Sudhir. "Institutions and Capacity Building for the Evolution of Intellectual Property Rights Regime in India: IV– Identification and Disclosure of IP Products for their IPR Protection in Plants and Animals" (2008) 13 *JIPR* 336.
- Kolady, Deepthi Elizabeth, et al. "The Economic Effects of Geographical Indications on Developing Country Producers: A Comparison of Darjeeling and Oolong Teas" (2011) 2 *WIPOJ* 157.

- Komarek, Adam M. "Crop Diversification Decisions: The Case of Vanilla in Uganda" (2010) 49 *Quarterly Journal of International Agriculture* 227.
- Kono, Toshiyuki, ed. *Intangible Cultural Heritage and Intellectual Property: Communities, Cultural Diversity and Sustainable Development* (Antwerp: Intersentia, 2009).
- Krippner, Greta R. "The Elusive Market: Embeddedness and the Paradigm of Economic Sociology" (2001) 30 *Theory and Society* 775.
- Krishna, Vijesh V. "Assessing the Potential of Labelling Schemes for *In Situ* Landrace Conservation: An Example from India" (2010) 15 *Environment and Development Economics* 127.
- Kuruk, Paul. "Goading a Reluctant Dinosaur: Mutual Recognition Agreements as a Policy Response to the Misappropriation of Foreign Traditional Knowledge in the United States" (2007) 34 *Pepp L Rev* 629.
- Landes, William M. & Richard A. Posner, "Trademark Law: An Economic Perspective" (1987) 30 *Jl & Econ* 265.
- Lang, Aaron C. "On the Need to Expand Article 23 of the TRIPS Agreement" (2007) 16 *Duke J of Comp & Int'l L* 487.
- Lange, David. "Reimagining the Public Domain" (2003) 66 *Law & Contemp Probs* 463.
- Leaffer, Marshall A. "The New World of International Trademark Law" (1998) 2 *Marq Intell Prop L Rev* 1.
- Lehmann, Michael. "The Theory of Property Rights and the Protection of Intellectual and Industrial Property" (1985) 16 *IIC* 525-540.
- Lemley, Mark A. "Property, Intellectual Property, and Free Riding" (2005) 83 *Texas L Rev* 1031.
- Lenzen, Louis C. "Bacchus in the Hinterlands: A Study of Denominations of Origin in French and American Wine-Labeling Laws" (1968) 58 *Trademark Rep* 145.
- Lindquist, Leigh Ann. "Champagne or Champagne? An Examination of US Failure to Comply with the Geographical Provisions of the TRIPS Agreement" (1999) 27 *Ga J Int'l & Comp L* 309.
- Long, Doris Estelle. "Democratizing Globalization: Practicing the Policies of Cultural Inclusion" (2002) 10 *Cardozo J of Int'l & Comp L* 217.

- _____. "Globalization: A Future Trend or a Satisfying Mirage?" (2001) 49 J Copyright Society 313
- _____. "Traditional Knowledge and the Fight for the Public Domain" (2006) 5 J. Marshal L Rev Intell Prop L 317.
- Long, Pamela O. "Invention, Authorship, 'Intellectual Property', and the Origin of Patents: Notes toward a Conceptual History" (1991) 32 Technology and Culture 846.
- Lorvellec, Louis. "You've Got to Fight for Your Right to Party: A Response to Professor Jim Chen" (1996) 5 Minn J Global Trade.
- Louwaars, Niels P. "Seed Policy, Legislation and Law: Widening a Narrow Focus" (2002) 4 Journal of New Seeds.
- _____. "*Sui Generis* Rights: From opposing to complementary approaches" (1998) 36 Biotechnology and Development Monitor 13.
- Lucchi, Nicola. "Intellectual Property Rights in Digital Media: A Comparative Analysis of Legal Protection, Technological Measures, and New Business Models under EU and US Law" (2005) 53 Buff L Rev 1111.
- Lukose, Lisa P. "Rationale and Prospects of the Protection of Geographical Indication: An Inquiry" (2007) 12 Journal of Intellectual Property Rights 212.
- Madow, Michael. "Private Ownership of Public Image: Popular Culture and Publicity Rights" (1993) 81 California Law Review 125.
- Mandelker, Barry Steven. "Indigenous People and Cultural Appropriation: Intellectual Property Problems and Solutions" (2000) 16 Canadian Intellectual Property Review 367.
- Manley, Rhys. "Developmental Perspectives on the TRIPS and TK Debate" (2006) 3 Macquarie Journal of International and Comparative Environmental Law 113.
- Mapiye, Cletos. "Potential for Value-Addition of Nguni Cattle Products in the Communal Areas of South Africa: A Review" (2007) 2 African Journal of Agricultural Research 488.
- Marden, Emily. "Neem Tree Patent: International Conflict over the Commodification of Life" (1999) 22 B C Int'l & Comp L Rev 279.
- Marette, Stéphan. "Can Foreign Producers Benefit from Geographical Indications Under the New European Regulation?" (2009) 10 The Estey Centre Journal of International Law and Trade Policy 65.

- Marie-Vivien, Delphine. "The Role of the State in the Protection of Geographical Indications: From Disengagement in France/Europe to Significant Involvement in India" (2010) 13 J World Intell Prop 121.
- Martin, Jose Manuel Cortes. "The WTO TRIPS Agreement the Battle between the Old and the New World over the Protection of Geographical Indications" (2004) 7 J World Intellect Property 287.
- Mattoo, Aaditya & Arvind Subramanian. "From Doha to the Next Bretton Woods - A New Multilateral Trade Agenda" (2009) 88 Foreign Aff 15.
- Mauro, Francesco & Preston D. Hardison. "Traditional Knowledge of Indigenous and Local Communities: International Debate and Policy Initiatives" (2000) 10 Ecological Applications 1263
- McDonald, M A, et al. "The Effects of Secondary Forest Clearance and Subsequent Land-Use on Erosion Losses and Soil Properties in the Blue Mountains of Jamaica" (2002) 9 Agriculture, Ecosystems & Environment.
- Mcmanis, Charles R. "Intellectual Property, Genetic Resources and TK Protection: Thinking Globally, Acting Locally" (2003) 11 Cardozo J of Int'l & Comp L 547.
- _____. "Open Source and Proprietary Models of Innovation: Beyond Ideology" (2009) 30 Wash U J L & Pol'y 405.
- _____. "The Interface between International Intellectual Property and Environmental Protection: Biodiversity and Biotechnology" (1998) 76 Wash U L Q 255.
- Menescal, Andrta Koury. "Changing WIPO's Ways? The 2004 Development Agenda in Historical Perspective" (2005) 8 J World Intell Prop 761.
- Menezes, Francisco. "Food Sovereignty: A Vital Requirement for Food Security in the Context of Globalization" (2001) 44 Development 29.
- Merges, Robert P. "Intellectual Property in Higher Life Forms: The Patent System and Controversial Technologies" (1987) 47 Md L Rev 1051.
- Mgbeoji, Ikechi. "Beyond Patents: The Cultural Life of Native Healing and the Limitations of the Patent System as a Protective Mechanism for Indigenous Knowledge on the Medicinal Uses of Plants" (2005) 5 Canadian Journal of Law and Technology.
- _____. "Patents and TK of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Biopiracy?" (2001) 9 Ind J Global Legal Stud 163

- _____. "The Juridical Origins of the International Patent System: Towards a Historiography of the Role of Patents in Industrialization" (2003) 5 *J Hist Int'l L* 403
- _____. & Byron Allen. "Patent First, Litigate Later! The Scramble for Speculative and Overly Broad Genetic Patents: Implications for Access to Health Care and Biomedical Research" (2003) *CJLT* 83.
- Mohan, Sarah, ed. "Intellectual Property: Disclosure Talks Try to Clarify CBD-TRIPS Relationship" (2006) 6 *Bridges Trade BioRes* 7.
- Moran, Warren. "Rural space as intellectual property" (1993) 12 *Political Geography* 263.
- Morgera, Elisa & Elsa Tsioumani. "The Evolution of Benefit Sharing: Linking Biodiversity and Community Livelihoods" (2010) 19 *Review of European Community & International Environmental Law* 150.
- Mulik, Kranti & John M. Cresp. "Geographical Indications and the Trade Related Intellectual Property Rights Agreement (TRIPS): A Case Study of Basmati Rice Exports" (2011) 9 *Journal of Agricultural & Food Industrial Organization*.
- Mulligan, Shane P. "For whose Benefit? Limits to Sharing in the Bioprospecting 'Regime'" (1999) 8 *Environmental Politics* 35.
- Munzer, Stephen R. & Kal Raustiala. "The Uneasy Case for Intellectual Property Rights in Traditional Knowledge" (2007) 27 *Cardozo Arts & Ent L J* 38.
- Mutersbaugh, Tad. "The Number Is the Beast: A Political Economy of Organic-Coffee Certification and Producer Unionism" (2002) 34 *Environment & planning A* 1165.
- Nason, James D. "Traditional Property and Modern Laws: The Need for Native American Community Intellectual Property Rights Legislation" (2001) 12 *Stan L & Pol'y Rev* 255.
- Netanel, Neil. "Asserting Copyright's Democratic Principles in the Global Arena" (1998) 51 *Va L R* 217.
- _____. "Copyright and a Democratic Civil Society" (1996) 106 *Yale Law Journal* 283.
- Nicholson, Denise Rosemary. "Intellectual Property: Benefit or Burden for Africa?" (2006) 32 *IFLA Journal* 310.
- Noble, Brian. "Justice, Transaction, Translation: Blackfoot Tipi Transfers and WIPO's Search for the Facts of Traditional Knowledge Exchange" (2007) 109 *American Anthropologist* 338.

- O'Connor, Bernard. "Protecting Traditional Knowledge: An Overview of a Developing Area of Intellectual Property Law" (2003) 6 *J World Intellect Property* 677.
- O'Kickit, Mary. "Lessons Learned from Ethiopia's Trade-marking and Licensing Initiative: Is the European Union's Position on Geographical Indications Really Beneficial for Developing Nations?" (2009) 6 *Loy U Chi Int'l L Rev* 311.
- Oguamanam, Chidi "Patents and Traditional Medicine: Digital Capture, Creative Legal Interventions, and the Dialectics of Knowledge Transformation" (2008) 15 *Indiana Journal of Global Legal Studies* 489.
- _____. "Tension on the Farm Fields: The Death of Traditional Agriculture?" (2007) 27: 4 *Bulletin of Science, Technology & Society* 260.
- _____. "Agro-Biodiversity and Food Security: Biotechnology and Traditional Agricultural Practices at the Periphery of International Intellectual Property Regime Complex" (2007) *Mich St L Rev* 215.
- _____. "Beyond Theories: Intellectual Property Dynamics in the Global Knowledge Economy" (2009) 9 *Wake Forest Intell Prop L J* 104.
- _____. "Intellectual Property Rights in Plant Genetic Resources: Farmers' Rights and Food Security in Indigenous and Local Communities" (2006) 11 *Drake J Agric L* 273.
- _____. "Localizing Intellectual Property in the Globalization Epoch: The Integration of Indigenous Knowledge" (2004) 11 *Ind J Global Legal Stud* 135.
- _____. "Patents and Traditional Medicine: Digital Capture, Creative Legal Interventions, and the Dialectics of Knowledge Transformation" (2008) 15 *Ind J Global Legal Stud* 489.
- _____. "Regime Tension in the Intellectual Property Rights Arena: Farmers' Rights and Post-TRIPS Counter Regime Trends" (2006) 29 *Dalhousie L.J.* 413.
- _____. "Tension on the Farm Fields: The Death of Traditional Agriculture?" (2007) 27 *Bulletin of Science Technology Society* 260.
- Okediji, Ruth L. "The International Relations of Intellectual Property: Narratives of Developing Country Participation in the Global Intellectual Property System" (2003) 7 *Sing J Int'l & Comp L* 315.
- Onwuekwe, Chika B. "The Commons Concept and Intellectual Property Rights Regime: Whither Plant Genetic Resources and Traditional Knowledge?" (2004) 2 *Pierce Law Review* 65.

- Parrott, Nicholas, et al. "Spatializing Quality: Regional Protection and the Alternative Geography of Food" (2002) 9 *European Urban and Regional Studies* 241.
- Paterson, Robert K. & Dennis S. Karjala, "Looking Beyond Intellectual Property in Resolving Protection of the Intangible Cultural Heritage of Indigenous Peoples" (2003) 11 *Cardozo J of Int'l & Comp L* 633.
- Pauwelyn, Joost. "The Dog That Barked But Didn't Bite: 15 Years of Intellectual Property Disputes at the WTO" (2010) 1 *J Int Disp Settlement* 389.
- Penker, Marianne. "Mapping and Measuring the Ecological Embeddedness of Food Supply Chains" (2006) 37 *Geoforum* 368.
- Petit, Michel & Hélène Ilbert. "Are Geographical Indications a Valid Property Right? Global Trends and Challenges" (2009) 27:5 *Development Policy Review* 503.
- Petit, Nicolas. "Ethiopia's Coffee Sector: A Bitter or Better Future?" (2007) 7 *Journal of Agrarian Change* 245.
- Pimentel, David. "Overview of the Use of Genetically Modified Organisms and Pesticides in Agriculture" (2001) 9 *Ind J Global Legal Stud* 51-64.
- Pingali, Prabhu. "Agricultural Growth and Economic Development: A View through the Globalization Lens" (2007) 37 *Agricultural Economics* 1.
- Pirog, Richard et al. "Defining and Marketing "Local" Foods: Geographical Indications for US Products" (2010) 13 *J World Intell Prop* 94.
- Pistorius, R. "Making Agro-biodiversity Work: Results of an On-Line Stakeholder Dialogue (OSD) in the Netherlands" (2000) 48 *Netherlands Journal of Agricultural Science* 319.
- Posey, Darrell A. "Commodification of the Sacred through Intellectual Property Rights" (2002) 83 *Journal of Ethnopharmacology* 3.
- Preface, "Biodiversity in Agricultural Landscapes: Investing without Losing Interest" (2007) 121 *Agriculture, Ecosystems and Environment* 193.
- Prescott, Peter. "The Origins of Copyright: A Debunking View" (1989) 12 *Eur Intell Prop Rev* 453.
- Profeta, Adriano et al. "Protected Geographical Indications and Designations of Origin: An Overview of the Status Quo and the Development of the Use of Regulation (EC) 510/06 in Europe, With Special Consideration of the German Situation" (2010) 22 *Journal of International Food & Agribusiness Marketing* 179.

- Qaim, Matin. "Benefits of Genetically Modified Crops for the Poor: Household Income, Nutrition, and Health" (2010) 27 *New Biotechnology* 552.
- Ragavan, Srividhya. "Protection of Traditional Knowledge" (2001) 2 *Minn Intell Prop Rev* 1.
- Rangnekar, Dwijen. "The Intellectual Properties of Geography" (2009) 31 *European Intellectual Property Review* 537.
- _____. "The Law and Economics of Geographical Indications: Introduction to Special Issue of *J World Intell Prop*" (2010) 13 *J World Intell Prop* 77.
- _____. "R&D Appropriability and Planned Obsolescence: Empirical Evidence From Wheat Breeding in the UK (1960-1995)" (2000) 11 *Industrial and Corporate Change* 1011.
- _____. & Kumar, Sanjay. "Another Look at Basmati: Genericity and the Problems of a Transborder Geographical Indication" (2010) 13 *J World Intell Prop* 202.
- Ratuva, Steven. "Commodifying Cultural Knowledge: Corporatized Western Science and Pacific Indigenous Knowledge" (2010) 60 *International Social Science Journal* 153.
- Raustiala, Kal & Stephen R. Munzer. "The Global Struggle Over Geographic Indications" (2007) 18 *EJIL* 337.
- Ray, Christopher. "Culture, Intellectual Property and Territorial Rural Development" (1998) 38:1 *Sociologia Ruralis* 1.
- Raynolds, Laura T. "Fair Trade Rooibos tea: Connecting South African Producers and American Consumer Markets" (2010) 41 *Geoforum* 74.
- Reaume, Denise G. "Justice between Cultures: Autonomy and the Protection of Cultural Affiliation" (1995) 29 *U Brit Colum L Rev* 117.
- Renard, Marie-Christine. "The Interstices of Globalization: The Example of Fair Coffee" (1999) 39:4 *Sociologia Ruralis* 484.
- Rice, Robert A. "Noble Goals and Challenging Terrain: Organic and Fair Trade Coffee Movements in the Global Marketplace" (2001) 14 *Journal of Agricultural and Environmental Ethics* 39.
- Riley, Angela R. "Indigenous Peoples and the Promise of Globalization: An Essay on Rights and Responsibilities" (2000) 414 *Kan J L & Pub Pol'y* 155.

- _____. "Recovering Collectivity: Group Rights to Intellectual Property in Indigenous Communities" (2000) 18 *Cardozo Arts & Ent L J* 175.
- Rimmer, Matthew. "Australian Icons: Authenticity Marks and Identity Politics" (2004) 3 *Indigenous Law Journal* 139.
- Robinson, Daniel F. "Locating Biopiracy: Geographically and Culturally Situated Knowledges" (2010) 42 *Environment and Planning* 38.
- Roeder, Martin A. "The Doctrine of Moral Right: A Study in the Law of Artists, Authors and Creators" (1940) 53 *Harv L Rev* 554.
- Roht-Arriaza, Naomi. "Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities" (1995) 17 *Mich J Int'l L* 919.
- Rosenda, G. Kristin. "Regulating the Use of Genetic Resources – Between International Authorities" (2006) 16 *European Environment* 265.
- Rosset, Peter. "Food Sovereignty Global Rallying Cry of Farmer Movements" (2003) 9 *Backgrounder* 1.
- Rotstei, Fiona & Andrew Christie. "Blood, Toil, Tears and Sweat: The Battle of Sidamo" (2010) 32 *European Intellectual Property Review* 421.
- Russell, Alexandra Basak. "Using Geographical Indications to Protect Artisanal Works in Developing Countries: Lessons from a Banana Republic's Misnomered Hat" (2010) 19 *Transnat'l L & Contemp Probs* 705.
- Safrin, Sabrina. "Hyperownership in a Time of Biotechnological Promise: The International Conflict to Control the Building Blocks of Life" (2004) 98 *American Journal of International Law* 641.
- Sage, Colin. "Social Embeddedness and Relations of Regard: Alternative 'Good Food' Networks in South-west Ireland" (2003) 19 *Journal of Rural Studies* 47.
- Sagoff, Mark. "Intellectual Property and Products of Nature" (2002) 2 *The American Journal of Bioethics* 12.
- Salazar, Rene et al, "Protecting Farmers' New Varieties: New Approaches to Rights on Collective Innovations in Plant Genetic Resources" (2007) 35 *World Development* 1515.
- Saxena Sanjeev. & Anurudh K. Singh. "Revisit to Definitions and Need for Inventorization or Registration of Landrace, Folk, Farmers' and Traditional Varieties" (2006) 91 *Current Science* 1451.

- Schlais, Gregory K. "The Patenting of Sacred Biological Resources, the Taro Patent Controversy in Hawai'i: A Soft Law Proposal" (2003) 29 U Haw L Rev 581.
- Sell, Susan K. "Intellectual Property and Public Policy in Historical Perspective: Contestation and Settlement" (2005) 38 Loy L A L Rev 267.
- _____. "TRIPS was Never Enough: Vertical Forum Shifting, FTAS, ACTA, and TPP" (2011) 18 J Intell Prop L 447.
- Shapiro, Carl. "Premiums for High Quality Products as Returns to Reputations" (1983) 98 The Quarterly Journal of Economics 659.
- Shiva, Vandana. "Bioprospecting as Sophisticated Biopiracy" (2007) 32 Signs: J of Women in Culture & Soc'y 307.
- _____.et al. "Globalization and the Threat to Seed Security: Case of Transgenic Cotton Trial in India" (1999) 34 Economic and Political Weekly.
- Simon, Lori E. "Appellations of Origin: The Continuing Controversy" (1983) 5 Nw J Int'l L & Bus 132.
- Singhal, Shivani. "Geographical Indications and Traditional Knowledge" (2008) 11 Journal of Intellectual Property Law & Practice 732.
- Sinha, Amresh. "Globalization: 'Making Geography Irrelevant'" (2002) 24 Review of Education, Pedagogy, and Cultural Studies 181.
- Soam, S. K. "Analysis of Prospective Geographical Indications of India" (2005) 8 J World Intell Prop 679.
- Sonnino, Roberta. "Embeddedness in Action: Saffron and the Making of the Local in Southern Tuscany" (2007) 24 Agriculture and Human Values 61.
- Spaulding III, Norman W. "Commodification and Its Discontents: Environmentalism and the Promise of Market Incentives," (1997)16 Stan Env't'l L J 294.
- Sreedharan, S. K. "Reconciling TRIPS with the Convention on Biological Diversity – Indian Perspective" (2004) 2 Business Briefing 1.
- Srinivas, Krishna Ravi. "Traditional Knowledge and Intellectual Property Rights: A Note on Issues, Some Solutions and Some Suggestions" (2008) 3:1 Asian Journal of WTO & International Health Law and Policy 1.
- Stacy, Helen. "Relational Sovereignty" (2003) 55 Stan L Rev 2029.

- Stamatopoulou, Elsa. "Indigenous Peoples and the United Nations: Human Rights as a Developing Dynamic" (1994) 16 *Human Rights Quarterly* 58.
- Stamp, Mark. "Digital Rights Management: The Technology behind the Hype" (2003) 4 *Journal of Electronic Commerce Research* 102.
- Stenton, Gavin. "Biopiracy within the Pharmaceutical Industry: A Stark Illustration of How Abusive, Manipulative and Perverse the Patenting Process Can Be Towards Countries of the South" (2004) 26 *Eur Intell Property Rev* 1.
- Stern, Stephen. "Are GIs IP?" (2007) 29 *EIPR* 39.
- Stirner, Beatrice. "Stimulating Research and Development of Pharmaceutical Products for Neglected Diseases" (2008) 15 *European Journal of Health Law* 391.
- Strahilevitz, Lior Jacob. "Information Asymmetries and the Rights to Exclude" (2006) 104 *Michigan Law Review* 1835.
- Subbiah, S. "Reaping what they Sow: The Basmati rice controversy and strategies for protection of Traditional Knowledge" (2004) 27 *Boston College International & Comparative Law Review* 529.
- Suh, Jeongwook & Alan MacPherson. "The Impact of Geographical Indication on the Revitalisation of A Regional Economy: A Case Study of 'Boseong' Green Tea" (2007) 39 *Area* 518.
- Sunder, Madhavi. "IP³" (2006) 59 *Stanford Law Review* 257.
- _____. "The Invention of Traditional Knowledge" (2006) 70 *Law & Contemp Probs* 97.
- _____. & Chander, A. "The Romance of the Public Domain" (2004) 92 *California Law Review* 1331.
- Svarstad, H. "Analysing Conservation-Development Discourses: The Story of a Biopiracy Narrative" (2002) 29 *Forum For Dev Stud* 63.
- Tallontire, Anne. "Top Heavy? Governance Issues and Policy Decisions for the Fair Trade Movement" (2009) 21 *Journal of International Development* 1004.
- Tang, Ching-Ping & Shui-Yan Tang. "Negotiated Autonomy: Transforming Self-Governing Institutions for Local Common-Pool Resources in Two Tribal Villages in Taiwan" (2001) 29 *Human Ecology* 49.

- Tarlock, A. Dan. "Exclusive Sovereignty versus Sustainable Development of a Shared Resource: The Dilemma of Latin American Rainforest Management" (1997) 32 *Tex Int'l L J* 37.
- Taubman, Anthony. "Is There a Right of Collective Personality?" 28 *European Intellectual Property Review* 485.
- _____. "Thinking Locally, Acting Globally: How Trade Negotiations over Geographical Indications Improve Fair Trade Rules" (2008) *Intellectual Property Quarterly* 231.
- Taylor, Peter Leigh. "In the Market But Not of It: Fair Trade Coffee and Forest Stewardship Council Certification as Market-Based Social Change" (2005) 33 *World Development* 129.
- Tejera, Valentina. "Tripping over Property Rights: Is it Possible to Reconcile the Convention on Biological Diversity with Article 27 of the TRIPS Agreement?" (1999) 33 *New Eng L Rev* 967.
- Teuber, Ramona "Geographical Indications of Origin as a Tool of Product Differentiation: The Case of Coffee" (2010) 22 *Journal of International Food & Agribusiness Marketing* 277.
- _____. "Consumers and Producers Expectations Towards Geographical Indications: Empirical Evidence for A German Case Study" (2011) 113 *British Food Journal* 900.
- Thiedig, Frank & Bertil Sylvander. "Welcome to the Club? An Economical Approach to Geographical Indications in the European Union" (2000) 49 *Agrarwirtschaft* 428.
- Thrupp, Lori Ann. "Linking Agricultural Biodiversity and Food Security: The Valuable Role of Agro-biodiversity for Sustainable Agriculture" (2000) 76 *International Affairs* 265.
- Tobin, Brendan. "Redefining Perspectives in the Search for Protection of Traditional Knowledge: A Case Study from Peru" (2001) 10:1 *RECIEL*.
- Torsen, Molly. "Apples and Oranges (and Wine): Why the International Conversation Regarding Geographic Indications is at a Standstill" (2005) 87 *Journal of the Patent & Trademark Office Society* 31.
- Turco, Antonio. "Generic No More—Expanded Protection of Geographical Indications in Canada" (2003) *Bulletin on Intellectual Property* 3.
- Tustin, John. "Traditional Knowledge and Intellectual Property in Brazilian Biodiversity Law" (2006) 14 *Tex Intell Prop L J* 131.

- van Caenegem, William Albert. "Registered Geographical Indications: Between Intellectual property and rural policy, Part I" (2003) 6 *Journal of World Intellectual Property* 699.
- van Overwalle, Gertrui. "Protecting and Sharing Biodiversity and Traditional Knowledge: Holder and User Tools" (2005) 53 *Economical Econ* 585.
- van Zanten, Wim. "Constructing New Terminology for Intangible Cultural Heritage" (2004) 56 *Museum Int'L* 36.
- Vialard, Antoine. "Regulating Quality Wines in European and French Law" (1999) 19 *N Ill U L Rev* 234.
- Villa, Tania Carolina Camacho, et al, "Defining and Identifying Crop Landraces" (2005) 3 *Plant Genetic Resources* 373.
- Vincent, Michel. "Extending Protection at the WTO to Products Other Than Wines and Spirits: Who Will Benefit?" (2007) 8 *Estey Centre Journal of International Law and Trade Policy* 57.
- Vittori, Massimo. "The International Debate on Geographical Indications (GIs): The Point of View of the Global Coalition of GI Producers—oriGIIn" (2010) *J World Intell Prop* 305.
- Walker, Rachel Durkee & Jill Doerfler. "Wild Rice: The Minnesota Legislature, a Distinctive Crop, GMOs, and Ojibwe Perspectives" (2009) 32 *Hamline L Rev* 499.
- Wattanaputtipaisan, Thitapha. "Trademarks and Geographical Indications: Policy Issues and Options in Trade Negotiations and Implementation" (2009) 26 *Asian Development Review* 166.
- Waye, Vicki. "Assessing Multilateral vs. Bilateral Agreements and Geographic Indications through International Food and Wine" (2005) 14 *Currents: Int'l Trade L J* 56.
- Webersik Christian & Clarice Wilson. "Achieving Environmental Sustainability and Growth in Africa: The Role of Science, Technology and Innovation" (2009) 17 *Sustainable Development* 400.
- Weeraworawit, Weerawit. "Formulating an International Legal Protection for Genetic Resources, Traditional Knowledge and Folklore: Challenges for the Intellectual Property System" (2004) 11 *Cardozo J Int'l & Comp L* 769.
- Weissbrodt, David & Kell Schoff. "Human Rights Approach to Intellectual Property Protection: The Genesis and Application of Sub-Commission Resolution 2000/7" (2004) 5 *Minnesota Intellectual Property Law Review* 1.

- Winter, Michael. "Embeddedness, the New Food Economy and Defensive Localism" (2003) 19 *Journal of Rural Studies* 23.
- Woods, Micheal "Food for Thought: The Biopiracy of Jasmine and Basmati Rice Woods" (2002) 13 *Alb L J Sci & Tech* 123.
- Xiaobing, Wang & Irina Kireeva. "Protection of Geographical Indications in China: Conflicts, Causes and Solutions" (2007) 10 *J World Intell Prop* 79 .
- Young, Oran R. "Regime Dynamics: The Rise and Fall of International Regimes" (1982) 36 *International Organization* 277.
- Yu, Peter K. "Cultural Relics, Intellectual Property, and Intangible Heritage" (2008) 81 *Temple Law Review* 455.
- _____. "Currents and Crosscurrents in the International Intellectual Property Regime" (2004) 38 *Loy L A L Rev* 323
- _____. "International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia" (2007) *Mich St L Rev* 1.
- Zemer, Lior. "On the Value of Copyright Theory" (2006) 1 *Intellectual Property Quarterly* 55.
- Zerbe, Noah. "Biodiversity, ownership, and indigenous knowledge: Exploring Legal Frameworks for Community, Farmers, and Intellectual Property Rights in Africa" (2005) 53 *Ecological Economics* 493.
- Zeven, A.C. "Landraces: A Review of Definitions and Classifications" (1998) 104 *Euphytica* 127.
- _____. "Traditional Maintenance Breeding of Landraces: 1. Data by Crop" (2000) 116 *Euphytica* 65.
- Zimmerman, Diane Leenheer. "Copyrights as Incentives: Did We Just Imagine That?" (2011) 12 *Theoretical Inquiries L* 29.
- Zou, Jinghua. "Rice And Cheese, Anyone? The Fight Over TRIPS Geographical Indications Continues" (2005) 30 *Brooklyn J Int'l L* 1141.

SECONDARY MATERIAL: MONOGRAPHS

- Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(J) and Related Provisions of the Convention on Biological Diversity, *Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices to Identify Priority Elements* (Fifth meeting, 15-19 October 2007, Montreal) UNEP/CBD/WG8J/5/6 20 September 2007.
- African Commission on Human and Peoples' Rights & International Work Group For Indigenous Affairs, *Report of the African Commission's Working Group of Experts on Indigenous Populations/ communities* (Copenhagen: Skolens Trykkeri, 2005).
- Agarwal, Sanjeev & Michael J. Barone, *Emerging Issues for Geographical Indication Branding Strategies*, Matric Research Paper 05-MRP 9 (2005).
- Arewa, Olufunmilayo B. *Biopiracy and Borrowing: Culture, Cultural Heritage and the Globalization of Intellectual Property* Case Research Paper Series in Legal Studies Working Paper 04-19 (March 2006).
- _____. *Culture as Property: Intellectual Property, Local Norms and Global Rights* North-western Public Law Research Paper No. 07-13 (2007).
- Aubard, Audrey. *The Use of Geographical Indications to Promote Economic Development: Issues, Opportunities, Policy Options*, Paper Commissioned by the ACP-EU TradeCom Facility in the Context of the ACP Regional Workshops on Geographical Indications (2010).
- Augustine, Stephen J. *Traditional Aboriginal Knowledge and Science versus Occidental Science* (Prepared for the Biodiversity Convention Office of Environment Canada, 1997).
- Bagal, Monique & Vittori, Massimo. *Preliminary Report on the Potential for Geographical Indications in Côte d'Ivoire and the Relevant Legal Framework* Paper commissioned by the ACP-EU programme Trade.Com (ACP Regional Workshops on Geographical Indications, April - May 2010, Geneva).
- Barham, Elisabeth. "Localization within Globalisation: Better Protecting Geographical Indications to Favour Sustainable Development" (Comments offered for the 2004 Annual WTO Public Symposium ORIGIN Round Table on Geographical Indications, Geneva, 27 May 2004).
- Barjolle, Dominique. "Impacts of Geographical Indications: Review of Methods and Empirical Evidences" (Paper Presented at International Association of Agricultural Economists Conference, Beijing, China, 16-22 August 2009).

- Benavente, Daniela. *The Economics of Geographical Indications: GIs Modeled As Club Assets* Graduate Institute of International and Development Studies Working Paper No: 10/2010 (2010).
- Benni, Nadja El. & Reviron, Sophie. *Geographical Indications: Review of Seven Case-Studies World Wide*, Working Paper No 2009/15 (2009).
- Bereskin, Daniel R. “Legal Protection of Geographical Indications in Canada” (Paper Presented at the Intellectual Property Institute of Canada’s Annual Meeting, Halifax, September 18, 2003).
- Biber-Klemm, Susette. “The Protection of Traditional Knowledge on the International Level – Reflections in Connection with World Trade” (UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, Geneva, 2000).
- Biénabe, Estelle, et al. *Sharing views on Quality Products Linked to Geographical Origin; How they Can Contribute to Rural Development? Rooibos* (Joint SINER-GI FAO Meeting, Roma, 31 Jan. 2008).
- Blakeney, Michael. *Intellectual Property, Traditional Knowledge and Genetic Resources: Policy, Law and Current Trends* (Paper Delivered at the WIPO National Seminar on Intellectual Property for Faculty Members and Students of Ajman University, Ajman, 5May 2004).
- Bocedi, Giorgio & GB Avvocati. *Country Paper, Kenya: Which Protection for GIs and What Potential GI Products?* (Paper Commissioned by the ACP-EU Program Trade.Com in the Frame of the ACP Regional Workshops on geographical Indications, April - May 2010).
- Boehlje, Micheal D. et al. *Value Chains in the Agricultural Industries* Purdue University Staff Paper # 99-10, (1999).
- Bramley, Cerkia et al. *The Economics of Intellectual Property: The Economics of Geographical Indications: Towards a Conceptual Framework for Geographical Indication Research in Developing Countries* (Geneva: World Intellectual Property Organization, 2009).
- Brazil, *Review of Article 27.3(b) - Communication from Brazil* (24 November 2000) IP/C/W/228.
- Burfitt, Alex, Chris Collinge & Adreene Staines. *Knowledge and the Economy: Cross-Disciplinary Perspectives and the Knowledge Economy Thesis*, Working Paper, University of Birmingham Centre for Urban and Regional Studies School of Public Policy (2007).

Calboli, Irene. *Expanding the Protection of Geographical Indications of Origin under TRIPS: Old Debate or New Opportunity?* Marquette University Law School Legal Studies Research Paper No. 06 (2006).

CBD Executive Secretary, *Review of Implementation of Article 10 of the Convention (Sustainable Use of Biodiversity) and Application of the Addis Ababa Principles and Guidelines* (Subsidiary Body On Scientific, Technical And Technological Advice Fourteenth Meeting, Nairobi, 10-21 May 2010) UNEP/CBD/SBSTTA/14/7.

_____. *Review of Implementation of Article 10 of the Convention (Sustainable Use of Biodiversity) and Application of the Addis Ababa Principles and Guidelines* (Subsidiary Body on Scientific, Technical and Technological Advice Fourteenth Meeting, Nairobi, 10-21 May 2010) UNEP/CBD/SBSTTA/14/7.

_____. *Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices to Identify Priority Elements* (Fifth meeting, 15-19 October 2007, Montreal) UNEP/CBD/WG8J/5/6 20 September 2007.

_____. *Knowledge, Innovations and Practices of ILCs* (Subsidiary Body on Scientific, Technical and Technological Advice, Second Meeting Montreal, 2 to 6 September 1996) UNEP/CBD/SBSTTA/2/7.

_____. *Draft Decisions for the Eighth Meeting of the Conference of the Parties to the Convention on Biological Diversity* (Conference of the Parties to the Convention on Biological Diversity, Eighth meeting, Curitiba, 20-31 March 2006) UNEP/CBD/COP/8/1/Add.2.

_____. *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Ninth Meeting: Article 8(j) and related provisions* (Conference of the Parties to the Convention on Biological Diversity, Ninth Meeting, Bonn, 19–30 May 2008) Agenda item 4.2 UNEP/CBD/COP/DEC/IX/13.

CBD, *Access and Benefit-sharing Factsheet* (Montreal: Secretariat of the Convention on Biological Diversity, 2010).

_____. *Interrelation of Access to Genetic Resources and Disclosure Requirements in Applications for Intellectual Property Rights: Report of the World Intellectual Property Organization (WIPO)*, Note by the Executive Secretary, (Conference of the Parties to the Convention on Biological Diversity, Eighth Meeting, Curitiba, 20–31 March 2006, Item 17 of the Provisional Agenda).

Cobo, José Martínez. *Study of the Problem of Discrimination against Indigenous Populations*, 1986/7, UN Doc E/CN.4/ Sub.2/1986/7.

Christian, Nigel David. *From Biopiracy to Bioprospecting: An Historical Sociology of the Search for Biological Resources* (PhD thesis, University of Warwick, 2007).

Comim, Flavio. “Operationalizing Sen’s Capability Approach” (Paper Presented at the Conference Justice and Poverty: Examining Sen’s Capability Approach, Cambridge 5-7 June 2001).

Commentary from Francis Gurry - WIPO Director General, *Address at Ceremony to Mark the 50th Anniversary of the Adoption of the Lisbon Agreement*, 31 October 2008 online: WIPO <http://www.wipo.int/about-wipo/en/dgo/speeches/gurry_lisbon_08.html>.

Communication from Brazil to the WTO TRIPS Council, *Review of Art. 27.3(b)*, 24 November 2000, IP/C/W/228.

Communication from Mauritius on behalf of the African Group to the WTO TRIPS Council, *Review of the Provisions of Art. 27.3(b)*, 20 September 2000, IP/C/W/206.

Communication from the European Communities and their Member States, *Negotiations Relating to the Establishment of a Multilateral System of Notification and Registration of Geographical Indications* (Council for Trade-Related Aspects of Intellectual Property Rights Special Session, 2002) TN/IP/W/3.

_____. *Review of the Provisions of Art. 27.3(b) of the TRIPS Agreement*, 13 June 2001, IP/C/W/254.

_____. *Draft Agreement on Trade-Related Aspects of Intellectual Property Rights*, MTN.GNG/NG11/W/68 (29 March 1990).

Conference of the Parties to the Convention on Biological Diversity, *Article 8(j) and Related Provisions*, Decision VI/10, in *Report of the Sixth Meeting of the Conference of the Parties to the Convention on Biological Diversity* (27 May 2002) 161-164, U.N. Doc. UNEP/CBD/COP/6/20.

_____. “Decision V/16 Adopted at the Fifth Meeting of the Conference of the Parties to the Convention on Biological Diversity: Article 8(j) and Related Provisions” COP 5 Decision V/16.

_____. *Draft Elements for an Action Plan for Capacity Building for Access to Genetic Resources and Benefit-Sharing*, COP 6 Decision VI/24 (Sixth Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity, The Hague, 7 - 19 April 2002).

_____. *Report of the First Meeting of the Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(j) and Related Provisions of the Convention on Biological Diversity*, UNEP/CBD/COP/5/5 (First Meeting of the Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(j) (WG8J 1), Seville, 27 - 31 March 2000).

Correa, Carlos M. "Protection of Geographical Indications in CARICOM Countries" (2002).

_____. *The Politics and Practicalities of a Disclosure of Origin Obligation*, Quaker United Nations Office Occasional Paper 16 (2005).

_____. *Traditional Knowledge and Intellectual Property: Discussion Paper* (Geneva: The Quaker United Nations Office, 2001).

_____. *Sovereign and Property Rights over Plant Genetic Resources*, FAO Background Study Paper No. 2 Commission on Plant Genetic Resources (1994).

Council for Trade-Related Aspects of Intellectual Property Rights, *Extension of the Transition Period Under Article 66.1 for Least-Developed Country Members*, IP/C/40 (Nov.2005), online: <http://www.tripsagreement.net/documents/GATTdocs/Decision_of_the_Council_for_TRIPS_of_29_November_2005_E.doc>.

_____. *Review Under Article 24.2 of the Application of the Provisions of the Section of the TRIPS Agreement on Geographical Indications: Summary of the Responses to the Checklist of Questions*, IP/C/W/253, (4 April 2001).

_____. *Communication from Bulgaria et al.* WTO Doc. IP/C/W/353, 24 June, 2002.

Council for Trade-Related Aspects of Intellectual Property Rights, Special Session, *Multilateral System of Notification and Registration of Geographical Indications for Wines and Spirits: Report by the Chairman, Ambassador Darlington Mwape* (Zambia) to the Trade Negotiations Committee (21 April 2011) TN/IP/21.

D. A. Posey & G. Dutfield, "Mind the Gaps: Identifying Commonalties and Divergencies Between Indigenous Peoples and Farmers Groups" (Draft paper presented to the 5th Global Biodiversity Forum, Buenos Aires, 1-3 November 1996).

Das, Abhijit. "Geographical Indications: UNCTAD's Initiative in India" UNCTAD India Project (Organised by UNDP RCC, UNDP Cambodia and Economic Institute of Cambodia Phnom Penh, 4 September 2008).

Daes, Erica-Irene A. *Working Paper on the Concept of "Indigenous People"* (Prepared for the Working Group on Indigenous Populations, 1996) UN Doc E/CN.4/Sub.2/AC.4/1996/2.

DeCarlo, Thomas E., et al. "Consumer Perceptions of Place-Based Foods, Food Chain Profit Distribution, and Family Farms" Leopold Center for Sustainable Agriculture Competitive Grant Report MSP05-2004 (2006).

- Dennis M. Warren, *Using Indigenous Knowledge in Agricultural Development*, World Bank Discussion Paper 127 (1991).
- Dhar, Biswajit. *Sui Generis Systems for Plant Variety Protection: Options under TRIPS: A Discussion Paper* (Geneva: Quaker United Nations Office, 2002).
- Diaz-Bonilla, Eugenio. *Food Security and Trade Negotiations in the World Trade Organization*, TMD Discussion Paper No. 59 (2000).
- Downes, David R. & Sarah A. Laird *Innovative Mechanisms for Sharing Benefits of Biodiversity and Related Knowledge: Case Studies on Geographical Indications and Trademarks* (Paper Prepared for UNCTAD Biotrade Initiative, 1999).
- Draft Conclusions of Workshop B: EU Quality Schemes* (Czech Presidency High Level Conference on the Future of Agricultural Product Quality Policy, Prague, 13 March 2009).
- Drahos, Peter. *Towards an International Framework for the Protection of Traditional Group Knowledge and Practice* (UNCTAD-Commonwealth Secretariat Workshop on Elements of National *Sui Generis* Systems for the Preservation, Protection and Promotion of Traditional Knowledge, Innovations and Practices and Options for an International Framework, Geneva, 4-6 February 2004).
- Dutfield, Graham. *Sharing the Benefits of Biodiversity: Access Regimes and Intellectual Property Rights* Science, Technology and Development Discussion Paper No. 6 (1999).
- Eleanor Meltzer, *Geographical Indications: Point of View of Governments* (Worldwide Symposium on Geographical Indications, Organized by the World Intellectual Property Organization & the United States Patent and Trademark Office, San Francisco, California, July 9 to 11, 2003) WIPO/GEO/SFO/03/3.
- Ellis, Karen & Keane, Jodie. *A Review of Ethical Standards and Labels: Is There a Gap in the Market for a New 'Good For Development' Label?* Overseas Development Institute Working Paper 297 (2008).
- Escudero, Sergio. *International Protection of Geographical Indications and Developing Countries*, South Centre Trade Working Paper No. 10, (2001).
- European Communities - Protection of Trademarks and Geographical Indications for Agricultural products and Foodstuffs* – Request for Consultations by the United States (2003) G/L/619IP/D/19/Add.1WT/DS174/1/Add.1.

- _____. “Promotion of Traditional Regional Agricultural Products and Food: A Further Step towards Sustainable Rural Development” (Twenty-Sixth FAO Regional Conference for Europe, Innsbruck, Austria, 26-27 June 2008, Agenda Item 11).
- _____. *Rome Declaration on World Food Security and World Food Summit: Plan of Action* (World Food Summit, 13-17 November 1996, Rome).
- _____. *The State of Food Insecurity in the World: Addressing Food Insecurity in Protracted Crises* (Rome: Food and Agriculture Organization of the United Nations Rome, 2010).
- _____. *The State of the World’s Plant Genetic Resources for Food and Agriculture* (Rome: FAO, 1998).
- _____. & Siner-GI, *Linking People, Places and Products: A Guide for Promoting Quality Linked to Geographical Origin and Sustainable Geographical Indications* (Rome: FAO, 2009).
- G, Velasquez & P, Boulet. “Essential Drugs in the New International Economic Environment” (1999) 77 Bulletin of the World Health Organization.
- GATT Secretariat, *“The Dunkel draft” from the GATT Secretariat: Draft Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, 20 December 1991* (Geneva: W.S. Hein, 1992).
- _____. *Communication from Argentina, Brazil, Chile, China, Colombia, Cuba, Egypt, India, Nigeria, Peru, Tanzania and Uruguay*, 14 May 199(GATT doc. MTN.GNG/NG11/W/71).
- _____. *Communication from Argentina, Brazil, Chile, China, Colombia, Cuba, Egypt, India, Nigeria, Peru, Tanzania and Uruguay*, 14 May 199(GATT doc. MTN.GNG/NG11/W/71).
- _____. *Communication from the United State*, 11 May 1990 (GATT doc. MTN.GNG/NG11/W/70) online: WTO < http://www.wto.org/gatt_docs/English/SULPDF/92100144.pdf>.
- Geuze, Matthijs. “Protection of Geographical Indications – International Legal Framework” (Presentation at National Roving Seminars on Geographical Indications, Chennai, January 29-30, 2009).
- Giovannucci, Daniele et al. *Guide to Geographical Indications: Linking Products and their Origins* (Geneva: International Trade Centre, 2009).

Gorman, Daniel. “Geographical Indications, Mobility, and Identity Paper presented at the annual meeting of the Theory vs. Policy?” (Connecting Scholars and Practitioners, New Orleans Hilton Riverside Hotel, the Loews New Orleans Hotel, New Orleans, LA, Feb 17, 2010).

Gupta, A.K. *Securing Traditional Knowledge and Contemporary Innovations: Can Global Trade Links Help Grassroots Innovations* (Invited Paper for World Trade Forum, Bern, Switzerland, August 27-29, 1999).

_____. “Rewarding Traditional Knowledge and Contemporary Grassroots Creativity: The Role of Intellectual Property Protection” (Draft Paper Presented in the International Seminar on Traditional Knowledge and IPRs, Center for International Development, Harvard University, Boston, 2000).

Halwart, Matthias & Dilip Kumar, eds. *Papers Presented at the FAO/NACA Consultation on Aquaculture for Sustainable* (Rome: Food & Agriculture Org., 2005).

Hart, Sharelle. *Elements of a Possible Implementation Agreement to UNCLOS for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction* IUCN Environmental Policy and Law Papers online – Marine Series No. 4 (Glan: IUC, 2008).

Heinemann, Jack A. *A Typology of the Effects of (Trans) Gene Flow on the Conservation and Sustainable Use of Genetic Resources*, CGRFA Background Study Paper No. 35 (2007).

Horlings, Ina & Terry Marsden. “Towards the Real Green Revolution? Exploring the Conceptual Dimensions of a New Ecological Modernisation of Agriculture that Could ‘Feed the World’” The Centre for Business Relationships, Accountability, Sustainability and Society Working Paper Series No. 54 (2010).

Hughes, Justin. “Coffee and Chocolate – Can We Help Developing Country Farmers through Geographical Indications?” A Report Prepared for the International Intellectual Property Institute, Washington, D.C. (2009) online: IIPi <http://www.iipi.org/reports/a-ip27E_Hughes.pdf>.

India’s Submission to the WTO Committee on Trade and Environment, *Protection of Biodiversity and Traditional Knowledge the Indian Experience*, 14 July 2000, WT / C T E /W/ ~I~P~/C,/ W/198.

_____. *Protection of Biodiversity and Traditional Knowledge the Indian Experience*, 14 July 2000, WT/CTE /W/ ~I~P~/C,/ W/198.

Indian Ministry of Textile, “Report of Task Force on Handicrafts Fora” (1989) 674 ODC.

- International Assessment of Agricultural Knowledge, Science and Technology for Development, *Global Report: Agriculture at Cross Roads* (Washington: IAASTD, 2008).
- International Seed Federation, *Disclosure of Origin in Intellectual Property Protection Applications* (Position Paper, Ad Hoc Open-Ended Working Group on Access and Benefit Sharing, Third meeting, Bangkok, 14-18 February 2005) UNEP/CBD/WG-ABS/3/INF/3.
- International Union of Biological Sciences International Commission for the Nomenclature of Cultivated Plants, *International Code of Nomenclature for Cultivated Plants* (Leuven: International Society for Horticultural Science, 2009).
- Jena, Pradyot R. & Ulrike Grote. “Does Geographical Indication (GI) Increase Producer Welfare? A Case Study of Basmati Rice in Northern India” (Paper submitted to the ISEE Conference on Advancing Sustainability at the time of Crisis, 2010, Bremen).
- Humphrey, John & Olga Memedovic. *Global Value Chains in the Agri-food Sector* (Vienna: United Nations Industrial Development Organization, 2006).
- Joint Communication from the African Group, “Taking Forward the Review of Article 27.3(b) of the TRIPS Agreement,” IP/X/W/404, June 26, 2003.
- Jones, Jessica et al. “National Report for Namibia: Rapid Trade and Environment Assessment (RTEA)” (Winnipeg: International Institute for Sustainable Development, 2009).
- Josling, Tim. “Geographical Indications: Protection for Producers or Consumer Information?” (Paper presented to the Annual Conference of the Australian Agricultural and Resource Economics Society, Coffs Harbour, 7-11 February 2005).
- Kiene, Tobias. *Needs and Opportunities for the EU in the TK Debates: The Agricultural Dimension*, Iddri Paper No. 3 (2006).
- Swiderska, Krystyna. “Protecting Traditional Knowledge: A framework based on Customary Laws and Bio-Cultural Heritage” (Paper Delivered at the International Conference on Endogenous Development and BioCultural Diversity, Geneva, 3-5 October 2006).
- Lee, Richard “Food Security and Food Sovereignty” Centre for Rural Economy Discussion Paper Series No. 11 (2007).
- M, Penker & Klemen F. *Transaction Costs and Transaction Benefits Associated with the Process of PGI/PDO Registration in Austria* (Paper Prepared for the 116th EAAE-SYAL Seminar “Spatial Dynamics in Agri-food Systems: Implications for Sustainability and Consumer Welfare”, 2010, Vienna).

- Marette, Stéphan et al. “The Recent International and Regulatory Decisions about Geographical Indications,” Matric Working Paper 07-MWP (10 January 2007).
- Mauritius, *Review of the Provisions of Article 27.3(b): Communication from Mauritius on behalf of the African Group* (20 September 2000) IP/C/W/206.
- Mawardi, Surip. “Advantages, Constraints and Key Success Factors in Establishing Origin- and Tradition-Linked Quality Signs: The Case of Kintamani Bali Arabica Coffee Geographical Indication, Indonesia” Case study on Quality Products Linked to Geographical Origin in Asia Carried out for FAO, Indonesian Coffee and Cocoa Research Institute (2009).
- Mechlem, Kerstin. “The Right to Food, Food Security and Biodiversity Conservation” (Presentation at IUCN World Conservation Congress, 19 November 2004, Bangkok).
- Mengistie, Getachew. “The Ethiopian Fine Coffee Designations Trade Marking & Licensing Initiative Experience” (Presented at WIPO Conference on Building Partnerships for Mobilizing Resources for Development, Geneva, November 5 and 6, 2009).
- Mgoabi, Ikechi. *Patents and Plants: Rethinking the Role of International Law in Relation to the Appropriation of TK of the Uses of Plants (TKUP)* (JSD thesis, Dalhousie University, 2001).
- Minister of Indian Affairs and Northern Development, *Intellectual Property and Aboriginal People*, a Working Paper QS-7018-001-EE-A1, (1999).
- Moctezuma, Kasey. *Promoting Geographical Indication Extension as a Tool to Sustain Tradition: Examining the Comté Case* (M.A Thesis, Monterey Institute of International Studies 2005).
- Morand, Pascal. “Globalization: The Need for a New Perspective” (Report of the International Working Group on Globalization, Paris, 2008).
- Orellana, Marcus. *REDD Legal Issues: ILCs* (Center for International Environmental Law Draft Report, 30 March 2009).
- Osorio, Néstor. “The Global Coffee Crisis: A Threat to Sustainable Development” (ICO Submission to Submission to the World Summit on Sustainable Development, Johannesburg, 21 August 2002).
- OECD, *Appellations of Origin and Geographical Indications in OECD Member Countries: Economic and Legal Implications*, Working Party on Agricultural Policies and Markets of the Committee for Agriculture Joint Working Party of the Committee for Agriculture and the Trade Committee, COM/AGR/APM/TD/WP (2000).

- Okediji, Ruth L. Geographical Indications in the WTO and EPA, Paper for Training on Legal Aspects of Trade Policy, Regional and Multilateral Trade Negotiations for the West African Region, Accra, Ghana, 8-12 November 2010).
- Panizzon, Marion. *Traditional Knowledge and Geographical Indications: Foundations, Interests and Negotiating Positions*, Working Paper No. 2005/01 (2006).
- Paus, Marguerite & Sophie Reviron. “Crystallisation of Collective Action in the Emergence of A Geographical Indication System” (International EAAE-SYAL Seminar – Spatial Dynamics in Agri-food Systems, Parma, 27-30 October 2010).
- Petersmann, Ernst-Ulrich, ed. *Developing Countries in the Doha Round : WTO Decision-making Procedures and Negotiations on Trade in Agriculture and Services* (San Domenico di Fiesole: The Robert Schuman Centre for Advanced Studies, 2005).
- Petit, Michael et al. *Why Governments Cannot Make Policy: the Case of Plant Genetic Resources in the International Arena* (Washington: International Potato Center, 2001).
- Petric, Hajnalka & Richard Eberlin, eds. *Global food security – A Global Challenge for Politics and Industry* (Forum International Green Week – Technical Forum, 16 January 2009, Berlin, Germany).
- R P, Ang & Teo J C. “Philippine Export Promotion Policies and their Responsiveness to European Market Conditions: A Case Study of Philippine Handicraft Exports to Belgium and Germany” (ASEAN Business Case Studies No 3, September 1995).
- Teuber, Ramona, Sven Anders & Corinne Langinier, *The Economics of Geographical Indications : Welfare Implications Structure and Performance of Agriculture and Agri-products Industry Network /Working paper #2011-6* (2011).
- Rangnekar, Dwigen. *Demanding Stronger Protection for Geographical Indications – The Relationship between Local Knowledge Information and Reputation*, United Nations University Discussion paper series 2004/11(2004).
- _____. *Geographical Indications: A Review of Proposals at the TRIPS Council*, UNCTAD/ICTSD Capacity Building Project on Intellectual Property Rights and Sustainable Development, June 2002.
- Raynold, Laura T. *Poverty Alleviation through Participation in Fair Trade Coffee Networks: Existing Research and Critical Issues* Community and Resource Development Program Background Paper (2002).
- Razzaque, Mohammad A. et al. “Global Rice Trade Liberalisation: Implications from Some Alternative Scenarios” (9th GTAP Annual Conference Addis Ababa, 2006).

- Reviron, Sophie. *Geographical Indications: Creation and Distribution of Economic Value in Developing Countries* Institute for Environmental Decisions, IED Working Paper No 2009/14 (2009).
- Schaffri, Dora et al. *The International Treaty on Plant Genetic Resources for Food and Agriculture –Implications for Developing Countries and Interdependence with International Biodiversity and Intellectual Property Law*, IPDEV Work Package 5, (2006).
- Shepherd, Ben. *Costs and Benefits of Protecting Geographical Indications: Some Lessons from the French Wine Sector*, GEM Working Paper, (2006)
- Schneider, J, ed. *Indigenous Knowledge in Conservation of Crop Genetic Resource* (Proceedings of an International Workshop, Cisarua, Bogor, 30 January–3 February).
- Schnepf, Randy. “Price Determination in Agricultural Commodity Markets: A Primer” CRS Report for Congress, (2006).
- Scialabba, Nadia El-Hage & Douglas Williamson. *Environment and Natural Resources Service Sustainable Development Department: The Scope of Organic Agriculture, Sustainable Forest Management and Eco-forestry in Protected Area* Working Paper No. 18, Rome (2004).
- Secretariat of the Permanent Forum on Indigenous Issues, *State of the World’s Indigenous Peoples* (New York: United Nations, 2009).
- Setboonsarng, Sununtar. “Can Ethical Trade Certification Contribute to the Attainment of the Millennium Development Goals? A Review of Organic and Fair-trade Certification” ADB Institute Discussion Paper No. 115 (2008).
- Smallacombe, Sonia. *Scoping project on Aboriginal Traditional Knowledge*, Desert Knowledge CRC Report Number 22 (2007).
- Submission by Brazil on behalf of the delegations of Brazil, China, Cuba, Dominican Republic, Ecuador, India, Pakistan, Thailand, Venezuela, Zambia and Zimbabwe*, IP/C/W/356, 24 June 2002.
- Summary of the Second Session of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture: Farmers’ Rights* (November 2007) 9:410 Earth Negotiations Bulletin Secretariat of the ITPGR,
- Sylvander, B. “Quality of Life and Management of Living Resources: Key Action n° 5 Sustainable agriculture, fisheries and forestry, and integrated development of rural areas including mountain areas” (WP 7 Final Report Synthesis and Recommendations, 2004).

Taubman, Antony. "The Public Domain and International Intellectual Property Law Treaties" ANU College of Law Research Paper No. 07-17 (2007).

Terri Janke, *Using Intellectual Property Tools to Protect Traditional Cultural Expressions/Traditional Knowledge Related Issues at Arts Festivals* (Presentation to Council for the Festival of Pacific Art, 31 March - 2 April 2008, Pago Pago).

The Crucible Group, *People, Plants and Patents* (Ottawa: International Development Research Center, 1994).

Thi Tuyet, Nguyen. *A Study of Legal Protection of Geographical Indications in the European Community and in Vietnam* (University of Lund, Master's Thesis, 2007). *Third Session of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture* (Tunis, 1 – 5 June 2009) IT/GB-3/09/Report online: < <ftp://ftp.fao.org/ag/agp/planttreaty/gb3/gb3repe.pdf>>.

Trade Negotiations Committee, *Draft Modalities for TRIPS Related Issues: Communication from Albania, Brazil, China, Colombia, Ecuador, the European Communities, Iceland, India, Indonesia, the Kyrgyz Republic, Liechtenstein, the Former Yugoslav Republic of Macedonia, Pakistan, Peru, Sri Lanka, Switzerland, Thailand, Turkey, the ACP Group and the African Group* (19 July 2008), TN/C/W/52.

UN Non-Governmental Liaison Service (NGLS), *Intergovernmental Negotiations and Decision Making at the United Nations: A Guide* (New York: United Nations Non-Governmental Liaison Service (NGLS), 2007).

UNCTAD Secretary-General, *Review of the Technical Cooperation Activities of UNCTAD and their Financing: Annex I- Review of Activities Undertaken in 2009* (Trade and Development Board Working Party on the Strategic Framework and the Program Budget, Fifty-sixth Session, Geneva, 6–8 September 2010, Item 3 of the provisional agenda) TD/B/WP/222/Add.1.

UNESCO, *Recommendation on the Safeguarding of Traditional Culture and Folklore* (Adopted by the General Conference at its twenty-fifth session, Paris, 15 November 198).

UNESCO/ITC, *International Symposium on Crafts and the International Market: Trade and Customs Codification* (Manila, October 1997) CLT/CONF/604/7.

UNESCO/WIPO, *African Regional Consultation on the Protection of Expressions of Folklore* (The First Regional Meeting Organized in Cooperation with WIPO, in pursuance of the Plan of Action adopted by the UNESCO/WIPO World Forum on the Protection of Folklore held in Phuket, Thailand, from 8 to 10 April 1997).

United Nations Permanent Forum on Indigenous Issues, *Resource Kit on Indigenous Peoples' Issues* (New York: United Nations, 2008).

Vinciguerra, Vincenzo. *Contribution to the Understanding of the Public Domain* (2006) *bepress Legal Series Working Paper* 1639.

Vivas-Eugui, David & C. Spennemann. *The Treatment of Geographical Indications in Recent Regional and Bilateral Free Trade Agreements*, UNCTAD/ITCSD Project on Intellectual Property and Sustainable Development (2006).

Wagle, Swarnim. *Geographical Indications as Trade-Related Intellectual Property: Relevance and Implications for Human Development in Asia-Pacific*, UNDP Asia-Pacific Trade and Investment Initiative Discussion Paper (2007).

Webster's Two New College Dictionary (Boston: 3rd ed, Houghton Mifflin Harcourt, 2005).

WHO, *WHO Policy Perspectives on Medicines No.2* (May 2002).

WIPO International Bureau, "WIPO Introductory Seminar on Intellectual Property: General Introduction to Intellectual Property Rights" (Paper Presented at a conference organized by the WIPO in cooperation with the Ministry of Commerce and Industry and the Sultan Qaboos University (SQU), Muscat, Oman, 19 April 2004) WIPO/IP/MCT/APR/04/2.

_____. *Possible Solutions for Conflicts between Trademarks and Geographical Indications and for Conflicts between Homonymous Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Fifth Session, Geneva, September 11 to 15, 2000) SCT/5/3.

_____. *The Protection of Traditional Knowledge, Including Expressions of Folklore* (WIPO International Forum on "Intellectual Property and Traditional Knowledge: Our Identity, Our Future, Muscat, January 21 and 22, 2002) WIPO/IPTK/MCT/02/INF.4.

_____. *Consolidated Survey of Intellectual Property Protection of Traditional Knowledge*, WIPO/GRTKF/IC/5/7 (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Geneva, July 7-15, 2003).

_____. *Elements of A Sui Generis System for the Protection of Traditional Knowledge* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Fourth Session, Geneva, December 9 to 17, 2002) WIPO/GRTKF/IC/4/8.

. *The Protection of Traditional Cultural Expressions/ Expressions of Folklore: Draft Objectives and Principles* (Intergovernmental Committee On Intellectual Property and Genetic Resources, Traditional Knowledge And Folklore, Tenth Session, Geneva, November 30 to December 8, 2006) WIPO/GRTKF/IC/10/4, Annex.

. *The Protection of Traditional Knowledge: Draft Objectives and Principles* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Tenth Session Geneva, November 30 to December 8, 2006) WIPO/GRTKF/IC/10/5.

WIPO, “Geographical Indications and the Territoriality Principle” (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Ninth Session, Geneva, November 11 to 15, 2002).

. *Intellectual Property, Traditional Knowledge and Genetic Resources Policy Options for Developing Countries* (Presented at International Conference on Intellectual Property, the Internet, Electronic Commerce and Traditional Knowledge, Sofia, 29 – 31 May 2001).

. “Proposal Presented by the African Group to the First Meeting of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore” (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, First Session, Geneva, April 30 to May 3, 2001).

. *Adopted Report: Document Prepared by the Secretariat*, (Eleventh Session, Geneva, July 3 to 12, 2007) WIPO/GRTKF/IC/11/15.

. *Basic Proposal* (Diplomatic Conference on the Revision of the Paris Convention, Geneva, February 4 to March 4, 1980) PR/DC/4.

. *Brief Summary of Working Documents*, (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Seventh Session Geneva, November 1 to 5, 2004) WIPO/GRTKF/IC/7/INF/3.

. *Composite Study on the Protection of Traditional Knowledge* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Fifth Session Geneva, July 7 To 15, 2003) WIPO/GRTKF/IC/5/8.

. *Consolidated Survey of Intellectual Property Protection of Traditional Knowledge, Traditional Knowledge and Folklore* (Delivered to the Intergovernmental Committee on Intellectual Property and Genetic Resources, Geneva, July 7-15, 2003).

. *Draft Agenda* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Seventh Session Geneva, November 1 to 5, 2004) WIPO/GRTKF/IC/7/1 Prov.

. *Draft Articles on the Protection of Traditional Knowledge Prepared at IWG 2* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Second Intersessional Working Group, Geneva, February 21 to 25, 2011).

. *Genetic Resources: List of Options* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Eleventh Session, Geneva, July 3 to 12, 2007) WIPO/GRTKF/IC/11/8.

. *Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Tenth Session, Geneva, April 28 – May 2, 2003) SCT/10/4.

. *Geographical Indications: Historical Background, Nature of Rights, Existing Systems for Protection and Obtaining Effective Protection in Other Countries* (Standing committee on the law of trademarks, industrial designs and geographical indications, 6th session, March 12-16, 2001) SCT/6/3.

. *Matters Concerning the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore*, Agenda Item 28 (WIPO General Assembly Thirty-Eighth (19th Ordinary) Session September 22 to October 1, 2009) online: WIPO < http://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_15/wipo_grtkf_ic_15_ref_decision_28.pdf>.

. *Outcome of Third Session of Working Group on the Development of the Lisbon System (Appellations of Origin)* (Third Session, Geneva, May 23 to 27, 2011) LI/WG/DEV/3/3.

. *Policies, Measures and Experiences Regarding Intellectual Property and Genetic Resources: Submission by the International Institute for Environment and Development (IIED)*, WIPO/GRTKF/IC/16/INF/13 (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore Sixteenth Session, Geneva, May 3 to 7, 2010).

. *Progress Report on the Status of Traditional Knowledge as Prior Art* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Second Session Geneva, December 10 to 14, 2001) WIPO/GRTKF/IC/2/6.

. *Project on Intellectual Property and Product Branding for Business Development in Developing Countries and Least-Developed Countries (LDCs)* (Committee On Development and Intellectual Property (CDIP), Fifth Session, Geneva, April 26 to 30, 2010) CDIP/5/5.

. *Protection of Traditional Knowledge: Overview of Policy Objectives and Core Principles* Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Seventh Session, Geneva, November 1 to 5, 2004) WIPO/GRTKF/IC/7/5.

. *Recognition of Traditional Knowledge Within the Patent System* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge And Folklore Thirteenth Session, Geneva, October 13 to 17, 2008).

. *Review of Existing Intellectual Property Protection of Traditional Knowledge*, WIPO/GRTKF/IC/3/7 (Intergovernmental Committee on Intellectual Property and Genetic Resources, TK and Folklore, Third Session, Geneva, June 13 To 21, 2002).

. *Revision of the Lisbon Agreement or Conclusion of A new Treaty (Committee of Experts on the International Protection of Appellations of Origin and Other Indications of Source* (Second Session, Geneva, December 1 to 5, 1975) TAO/II/3.

. *Specific Legislation for the Legal Protection of Traditional Cultural Expressions—Experiences and Perspectives of New Zealand*, Annex II, WIPO/GRTKF/IC/4/INF/2.

. *Survey on Existing Forms of Intellectual Property Protection for Traditional Knowledge* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Second Session Geneva, December 10 to 14, 2001) WIPO/GRTKF/IC/2/5.

. *The Definition of Geographical Indications* (Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications, Ninth Session, Geneva, November 11 to 15, 2002) SCT/9/4.

. *The Need for a New Treaty and its Possible Contents* (Committee of Experts on the International Protection of Geographical Indications, First Session, Geneva, May 28 to June 1, 1990) GEO/CE/I/2.

. *The Protection of Traditional Knowledge: Draft Gap Analysis; Revision* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Thirteenth Session, Geneva, October 13 to 17, 2008) WIPO/GRTKF/IC/13/ 5(b) Rev.

_____. *The Protection of Traditional Knowledge: Draft Objectives and Principles* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Tenth Session Geneva, November 30 to December 8, 2006) WIPO/GRTKF/IC/10/5.

_____. *TK – Operational Terms and Definitions* (Intergovernmental Committee on Intellectual Property and Genetic Resources, TK and Folklore Third Session, Geneva, 13 to 21 June 2002).

_____. *Traditional Knowledge, Traditional Cultural Expressions and Genetic Resources: The International Dimension* (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Sixth Session Geneva, March 15 to 19, 2004) WIPO/GRTKF/IC/6/6.

Wolff, Franziska. “Legal Factors Driving Agro-biodiversity Loss” (2004) Environmental Law Network International.

WTO Committee on Agriculture, Special Session, *Agreement on Agriculture: Special and Differential Treatment and a Development Box*, Proposal to the June 2000 Special Session of the Committee on Agriculture by Cuba, Dominican Republic, Honduras, Pakistan, Haiti, Nicaragua, Kenya, Uganda, Zimbabwe, Sri Lanka and El Salvador, WTO Document G/AG/NG/W/13 of 23 June 2000.

WTO Trade Negotiation Committee, *Cover Note BY TNC Chair* (21 April 2011) TN/C/13 online: WTO < http://www.wto.org/english/tratop_e/dda_e/chaire_text11_e/chaire_text11_e.htm>.

WTO, *Doha Work Programme* (Decision adopted by the General Council, 1 August 2004) WTO Document WT/L/579.

_____. *Ministerial Declaration* (Ministerial Conference Fourth Session, Doha, 9 - 14 November 2001) T/MIN (01)/DEC (adopted in November 14, 2001).

_____. *Preparations for the 1999 Ministerial Conference – The TRIPS Agreement*. Communication from Kenya on behalf of the Africa Group, (1999) WT/GC/W/302.

Zografos, Daphne. *Geographical Indications & Socio-Economic Development* Working Paper 3 (2008).

OTHER MATERIALS

Bewicke Calverly M., Dietary Supplements Containing Kava Root Extract, Passion Flower, Chamomile Flowers, Hops, and Schizandra Fruit, U.S. Patent 5,770,207, 1998.

- Gow, et.al, Kavalactone Product, US Patent 7,001,620, 2006.
- Gregg, Jr. & Fred B., Kava-Kava Root Composition and Associated Methods, US Patent 6,541,044, 2003.
- “Shirkina Sun-Dried Sidamo”, Starbucks Corporation, Can 1219525(08 June 2004) abandoned.
- US Pat. No. 4,736,866 (Apr. 12, 1988).
- USPTO, United States Patent 7,642,435 to Sarreal, et al, *Rice hybrid XL729*, US 2009/0126035 A1, May 14, 2009.
- AIPPI Working Committee, *Summary Report on Question Q191: Relationship Between Trademarks and Geographical Indications 3* (2006) online: AIPPI <<https://www.aippi.org/download/committees/191/SR191English.pdf>>.
- Alessandri & Compania Abogados, “Chile Grants the First Registration Recognizing A Geographical Indication” (24 April 2010) online: Latin Counsel <<http://www.latincounsel.com/eng/noticiaampliada.php?nid=7564>>.
- Altieri, Miguel A. “10 Reasons Why Biotechnology Will Not Ensure Food Security, Protect the Environment and Reduce Poverty in the Developing World” *Third World Network* online: TWIN <<http://www.twinside.org.sg/title/miguel-cn.htm> >.
- Araya, Selome “From Bean to Cup: the Battle between Starbucks and Ethiopian Coffee Farmers” *ArticlesBase*, (03 January 2008) online: <<http://www.articlesbase.com/politics-articles/from-bean-to-cup-the-battle-between-starbucks-and-ethiopian-coffee-farmers-295718.html>>.
- Assembly of First Nations, *A First Nations - Federal Crown Political Accord on the Recognition and Implementation of First Nation Governments* (19 April 2004) online: Assembly of First Nations <<http://www.afn.ca/cmslib/general/PolAcc.pdf>>.
- Barber, Benjamin R. “Jihad vs. Mcworld” (1992) 269 *The Atlantic Monthly* online: <<http://www.theatlantic.com/politics/foreign/barjiha.htm>>.
- Blakeney, Michael L. & Thierry Couillet. *The Protection of Geographical Indications (GI): Generating Empirical Evidence at Country and Product Level to Support African ACP Country Engagement in the Doha Round Negotiations* Mid-Term Progress Report, Ref: 9 ACP RPR 140 - 011-10, online: <<http://acp-mts-programme.org/assets/docs/103/191/9238567-2afa5bf.pdf>>.

- _____. “The Protection of Traditional Cultural Expressions” online: EC-ASEAN Intellectual Property Rights Co-operation Program <http://www.ecap-project.org/fileadmin/ecapII/pdf/en/activities/regional/aun_sept_07/traditional_cultural_expressions_word.pdf>.
- Brydon, Diana. “Globalization and Autonomy” online: <http://www.globalautonomy.ca/global1/glossary_pop.jsp?id=CO.0053>..
- Carter, Lindsay. South Africa: Rooibos TED Case Studies Number 777, 2005 <<http://www1.american.edu/ted/riobas.htm>>.
- CBD Secretariat, *Article 8(j): Traditional Knowledge, Innovations and Practices*, online: CBD <<http://www.cbd.int/traditional/intro.shtml>>.
- CBD, *Background and Status: Traditional Knowledge, Innovations and Practices*, online: <<http://www.cbd.int/programs/socio-eco/traditional/background.aspx>>.
- _____. *Cooperation with Other Organizations, Initiatives and Conventions*, COP 6 Decision VI/20, online: CBD <<http://www.cbd.int/decision/cop/?id=7194>>.
- _____. *Decisions on Cooperation* online: CBD <<http://www.cbd.int/cooperation/decisions.shtml>>.
- Center for Indigenous Environmental Resources, *Sharing the Story: Sustainable Initiatives in First Nations, Community Profiles and Project Information* (2005) online: CIER <<http://www.cier.ca/WorkArea/showcontent.aspx?id=602>>.
- Centre for Studies in Food Security at Ryerson University, “Food Security Defined” online: Ryerson University <<http://www.ryerson.ca/foodsecurity/>>.
- Commentary from Francis Gurry - WIPO Director General, *Address at Ceremony to Mark the 50th Anniversary of the Adoption of the Lisbon Agreement*, 31 October 2008 online: WIPO <http://www.wipo.int/about-wipo/en/dgo/speeches/gurry_lisbon_08.html>.
- Comte.com, *Comte, 1st A, Cheese in France: A Traditional Craft Over A Thousand Years Old* online: <<http://www.comte.com/comte-1st-aop-cheese-in-france,6,0,17,2,1.html>>.
- Conference of Parties to the CBD, *Institutional Matters and the Program of Work*, COP 4 Decision IV/16 online: <<http://www.cbd.int/decision/cop/?id=7139>>.

Dasgupta, Biplab. "Intellectual Property Rights: For Safeguards against Bio-Piracy" India's National Magazine 16:21 (09-22 October 1999)

Dedeurwaerdere, Tom et al. "A New Market Road: Bioprospection Beyond Intellectual Property Rights" <http://perso.cpd.ucl.ac.be/dedeurwaerdere/articles%20Tom/Dedeurwaerdere%20Pascual%20Vijesh%20_2005_%20version%20site%20oct%20006%E2%80%A6.pdf>.

Drahos, Peter. "The Universality of Intellectual Property Rights: Origins and Development" online: WIPO <<http://www.wipo.int/tk/en/hr/paneldiscussion/papers/pdf/drahos.pdf>>.

Duke, Winona La. "Wild Rice: Maps, Genes and Patents" (2001) online: Save Wild Rice <<http://savewildrice.org/winona-article>>.

Dutfield, Graham. "Identification of Outstanding ABS Issues: Access to GR and IPR: What is Biopiracy?" (International Expert Workshop on Access to Genetic Resources and Benefit Sharing, 2004) online: <<http://www.canmexworkshop.com/documents/papers/I.3.pdf>>.

Earthmodal, *Dialogue, Advocacy and Community Building for Peace and Sustainability* (08 July 2006) online: <<http://earthmodal.net/em/subs/Dialogue.html>>.

EC, "The EC's Proposal for Modalities in the WTO Agriculture Negotiations" (2003) online: EC Directorate-General for Trade <http://trade.ec.europa.eu/doclib/docs/2005/september/tradoc_112403.pdf>.

_____. "Agriculture and Preferential Trade Relations with Developing Countries the Case of ACP Countries" (2008) online: Gateway to the European Union <http://ec.europa.eu/agriculture/developing-countries/publi/overview/text_en.pdf>.

_____. *External Trade, Intellectual Property, TRIPs and Geographical Indications: EU submits Three Communications on Geographical Indications, Brussels, 24 June 2002*, online: <http://europa.eu.int/comm/trade/issues/sectoral/intell_property/wto_nego/intel4.ht>.

_____. Press Release, "WTO Talks: EU Steps Up Bid for better Protection of Regional Quality Products" (Aug. 28, 2003) online: Europa <http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/o3/1_178>.

_____. "Intellectual Property: Why Do Geographical Indications Matter to Us?" Background Note 01/04 (2003) online: <http://ec.europa.eu/trade/issues/sectoral/intell_property/argu_en.htm>.

ERS/USDA, "WTO: Beyond the Agreement on Agriculture, TRIPS" *Briefing Rooms* (12 April 2009) online: <<http://www.ers.usda.gov/briefing/wto/geoindications.htm>>.

EU, *Agricultural Product Quality Policy: Impact Assessment Part B: Geographical Indications* online: < http://ec.europa.eu/agriculture/quality/policy/com2009_234/ia_annex_b_en.pdf >.

European Observatory on Fair Trade and Public Procurement, *Fair Trade definition as agreed by FLO, WFTO, NEWS! and EFTA* online: <[http://www.european-fair-trade-association.org/observatory/index.php/fair trade](http://www.european-fair-trade-association.org/observatory/index.php/fair%20trade)>.

Fair Trade Foundation, *Retail products* online: fairtrade < http://www.fairtrade.org.uk/products/retail_products/default.aspx>.

FAO Committee on Commodity Problems, *Geographical Indications for Tea* (Intergovernmental Group on Tea, Eighteenth Session, Hangzhou, 14 – 16 May 2008) CCP:TE 08/5 online: < <ftp://ftp.fao.org/docrep/fao/meeting/013/k2020E.pdf>>.

_____. “What is Agro-biodiversity?” online: FAO < <ftp://ftp.fao.org/docrep/fao/007/y5609e/y5609e00.pdf> >.

_____. *Agricultural Biodiversity, Multifunctional Character of Agriculture and Land Conference: Background Paper 1* (Maastricht: FAO, 1999) online: FAO <<ftp://ftp.fao.org/docrep/fao/007/y5609e/y5609e00.pdf>>.

_____. *Creating Conditions for the Development of GIs: the Role of Public Policies* online: FAO <<http://www.fao.org/docrep/012/i1057e/i1057e07.pdf>>.

_____. *Major Food and Agricultural Commodities and Producers, Economic and social Development Division*, online: < <http://www.fao.org/es/ess/top/commodity.html?lang=en&item=661&year=2005>>.

_____. *Multilateral Trade Negotiations on Agriculture: A Resource Manual* (Rome: Food and Agriculture Organization of the United Nations, 2000) online: FAO <<http://www.fao.org/docrep/003/x7355e/x7355e06.htm>>.

_____. *Quality Linked to Geographical Origin: Product, People and Place*, online: Quality and Origin < <http://www.foodqualityorigin.org/eng/index.html>>.

_____. *Report of the Conference of FAO - First Session: Report of Commission to the Conference*, online: FAO < <http://www.fao.org/docrep/x5584E/x5584e06.htm> >.

Frye, Stephanie. “European Union Competitor – Promotion of EU Agricultural Products outside the EU” (27 November 2004) USDA Foreign Agricultural Service GAIN Report <http://fas.usda.gov/fassearch_results_h.asp?searchstringcomte+cheese>.

Garamfalvi, Alexia. "Ethiopian Coffee Trade-mark Dispute With Starbucks Runs Hot and Cold" *Legal Times* (March 8, 2007) available at <<http://www.law.com/jsp/article.jsp?id=1173261800496>>.

Genetic Resources Action International, "Turning the Paddy Gold: Corn in Southeast Asia" (1999) online: GRAIN <<http://www.grain.org/seedling/index.cfm?id=98>>.

Geneva Declaration on the Future of the World Intellectual Property Organization, (October 2004) online: Consumer Project on Technology <<http://www.cptech.org/ip/wipo/futureofwipodeclaration.pdf>>.

Ghanaweb, "Parliament Passes Four Bills" (12 December 2003) online: <<http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=48134>>.

Global Trade and Regional Integration Program, "The Starbucks/Ethiopian Coffee Saga: Geographical Indications as a Linchpin for Development in Developing Countries" Policy Notes No. 3 (2008) online: The Nordic Africa Institute <http://www.nai.uu.se/publications/electronic_publications/notes_trade3.pdf>.

GRAIN, "Elements of the Obligation to Disclose the Source and Country of Origin of Biological Resource and/or TK Used in an Invention", online: Grain <<http://www.grain.org/rights/tripsreview.cfm?id=62>>.

_____. "Freedom from IPR: Towards A Convergence of Movements" (October 2004) online: <<http://www.grain.org/seedling/?id=301>>.

_____. "The TRIPS Review at A Turning Point?" (2003): online: <<http://www.grain.org/es/article/entries/104-the-trips-review-at-a-turning-point>>.

Howell, Robert G. "The Interconnection of Intellectual Property and Cultural Property" online: <www.fphlcc.ca/downloads/interconnection-of-ip-cultural-property.pdf>.

IDEA project, *Vanilla* ADC Commercialisation Bulletin No.1 (2000)

IIED et al, *Sui Generis Systems for the Protection of Traditional Knowledge* (Information for the Secretariat of the Convention on Biological Diversity, 31st October 2005) online: IIED <<http://www.iied.org/pubs/pdfs/G02378.pdf>>.

IISD Reporting services, "A Brief Introduction to the CGRFA" (November 2004) Earth Negotiations Bulletin, online: Linkages A Multimedia Resource for Environment and Development Policy Makers <<http://www.iisd.ca/biodiv/cgrfa10/curtain.html>>.

Ilias, Shayerah. *The Proposed Anti-Counterfeiting Trade Agreement: Background and Key Issue* (2010) Congressional Research Service <http://assets.opencrs.com/rpts/R41107_20100312.pdf>.

Indian and Northern Affairs Canada, “How do I know if my Inuit Sculpture is Authentic?” in *Frequently Asked Questions about the North* (2001) online: <<http://www.ainc-inac.gc.ca/ai/mr/is/info115-eng.pdf>>.

Intellectual Property Research Institute of Australia (IPRIA), *Sidamo: A Teaching Case for WIPO* (2009) online: WIPO <http://www.wipo.int/export/sites/www/academy/en/ipacademies/educational_materials/cs4_sidamo.pdf>.

International Rice Research Institute, “The Rise Crisis: What Needs to be Done?” (2008) online: <http://www.irri.org/publications/today/pdfs/7-3/RT_The_Rice_Crisis.pdf>.

Irshad, Husain Nazish. *Emergence of Knowledge Economy*, online: Legal Service India <<http://www.legalserviceindia.com/article/1121-Emergence-of-Knowledge-Economy.html>>.

James, T.C “Protection of Geographical Indications: The Indian Experience” (2009) 13 Bridges, online: ICTSD <<http://ictsd.org/i/news/bridges/54279/#respond>>.

Khor, Martin. *IPRs and Biodiversity: Stop the Theft of Indigenous Knowledge* (TWN Briefings for WSSD No.6) online: TWN <<http://www.twinside.org.sg/title/jb6.htm>>.

Light Years IP, “Distinctive values in African Exports: How Intellectual Property can raise export income and alleviate poverty” (2008) online: <http://www.lightyearsip.net/downloads/Distinctive_values_in_African_exports.pdf>.

London Economics, “Evaluation of the CAP Policy on Protected Designations of Origin (PDO) and Protected Geographical Indications (PGI): Final Report” (November 2008) online: European Commission <http://ec.europa.eu/agriculture/eval/reports/pdopgi/report_en.pdf>.

Maskus, Keith E. “Observations on the Development Potential of Geographical Indications” (Paper Prepared for the U.N. Millenium Project Task Force on Trade, March 2003), online: <www.ycsg.yale.edu/documents/papers/Maskus.doc>.

Menell, Peter S. “Intellectual Property: General Theories” online: <<http://www.dklevine.com/archive/ittheory.pdf>>.

Menon, Ramesh. “Traditional Knowledge Receives A Boost” (13 January 2007) online: India together <<http://www.indiatogether.org/2007/jan/eco-tkd1.htm>>.

- Moritz, Thomas. "Building the Biodiversity Commons" (2002) 8 D-Lib Magazine online: <<http://www.dlib.org/dlib/june02/moritz/06moritz.html>>.
- Mugabe, John. "Intellectual Property Protection and Traditional Knowledge: An Exploration in International Policy Discourse" online: WIPO <<http://www.wipo.int/tk/en/hr/paneldiscussion/papers/pdf/mugabe.pdf>>.
- Native Harvest, *Manoomin and Patents* (2008) online: WELRP <<http://nativeharvest.com/node/249>>.
- Nel, Willie. "Rooibos as A Potential GIs" online: The Technical Centre for Agricultural and Rural Cooperation <www.cta.int/en/content/download/4074/.../GI-Rooibos-Willie_per_cent20Nel.pdf>.
- Nicholls, Alex. "Eco-labelling – as A Potential Marketing Tool for African Products: An Overview of Opportunities and Challenges" online: UNEP <<http://www.unep.org/roa/docs/pdf/Eco-labelling-Brochure.pdf>>.
- Office of the United States Trade Representative (USTR), "US and Other Trade Partners Present Positions and Proposals to Prevent Unauthorized Use of Geographic Names," USTR Press Release 20 September 2002 online: <http://www.ustr.gov/Document_Library/Press_Releases/2002/September/US_Other_Trade_Partners_Present_Positions_Proposals_to_Prevent_Unauthorized_Use_of_Geographic_Names.html>.
- Ohlgart, Dietrich C. "Geographical Indications and Trademarks: War or Peace?" (Paper Presented at European Communities Trade Mark Association 25th Annual Meeting , Warsaw, 2006) online : <http://www.ecta.org/IMG/pdf/Olghart_text_1.pdf>.
- Oxfam International, Crisis in the Birthplace of Coffee, "Oxfam International Research Paper" (2002) online: Oxfam <<http://www.maketradefair.com/assets/english/CoffeeCrisisKafaEthiopia.pdf>>.
- Oxford Policy Management/International Institute for Environment and Development, *Fair Trade: Overview, Impact, Challenges* (2000) Study to Inform DFID's Support to Fair Trade online: <<http://portals.wi.wur.nl/files/docs/ppme/ACF3C8C.pdf>>.
- Pau, Sarbajit. "An Overview of the Indian Tea Industry" online: ICWAI <<http://www.icwai.org/icwai/knowledgebank/oh02.pdf>>.
- Pilch, Janice T. *Traditional Cultural Expression Library Copyright Alliance: Issue Brief* (2009) online: <<http://wo.ala.org/tce/wp-content/uploads/2009/10/pilchissuebrieftce.pdf>>.

- Plan of Implementation Adopted by the World Summit on Sustainable Development* (2002) Johannesburg online: < http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf >.
- Prakash, Siddhartha. “Case study: India” (Geneva: World Trade Organization, 1998) online: GRAIN <<http://grain.me.uk/a/1783> >.
- Prakash, Siddhartha. “Indigenous Knowledge and Intellectual Property Rights” *IK Notes* No. 19 (2000) online: World Bank <<http://www.worldbank.org/afr/ik/iknt19.pdf>>.
- Rangnekar, Dwijen. *Geographical Indications and Localization: A Case Study of Feni*, CSGR Report (2009) online: <www.esrc.ac.uk/my-esrc/.../4fcff116-d65b-4ed1-8540-9e10c2dfcca9>.
- Ray, Shrabashi & Gautam Anand. “Geographical Indications: Contextualizing the Case of ‘Darjeeling Tea’” online: <http://www.trademarkdhaba.com/resource/GI_darjeeling_tea_case.pdf>.
- Rimmer, Matthew. “A Submission to the Joint Standing Committee on Treaties on the Agreement between Australia and the European Community on Trade in Wine” Submission No. 7 (2009) online: Bepress electedWorks<http://works.bepress.com/cgi/viewcontent.cgi?article=1068&context=matthew_rimmer>.
- Ruiz, M. *The International Debate on Traditional Knowledge as Prior Art in the Patent System: Issues and Options for Developing Countries* (2002) online: CIEL <http://www.ciel.org/Publications/PriorArt_ManuelRuiz_Oct02.pdf>.
- Saeed, Muhamaad. “WTO: Coldiretti Claims Agro-Piracy Top Priority” (15 June 2004) 4:11 The World Trade Review online: <<http://www.worldtradereview.com/news.asp?pType=N&iType=A&iID=84&siD=8&nID=15472>>.
- Satish, John K. “75 Handicrafts to Get Geographical Indication” Business Standard (14 August 2006) online: Business Standard Limited < <http://www.business-standard.com/india/news/75-handicrafts-to-get-geographical-indication/255337/>>.
- Schmidlehner, Michael. “Cupuaçu – A Case of Amazonian Self-Assertion” (2003) Seedling online: GRAIN < <http://www.grain.org/seedling/?id=234> >.
- Sen, Amartya. “What’s the Use of Music? The Role of the Music Industry in Africa” (Prepared for the World Bank–Policy Sciences Center, Workshop on the Development of the Music Industry in Africa, Washington, D.C., June 20–21, 2000) online: <http://www.worldbank.org/research/trade/africa_music2.htm>.

- Simeone, Tonina. "Indigenous TK and Intellectual Property Rights," 17 March 2004, Political and Social Affairs Division, Online: <[http://www.Parl.Gc.Ca/Information/Library/Prbpubs/Prb0338-E.Htm#Limitation Stxt](http://www.parl.gc.ca/information/library/prbpubs/prb0338-e.htm#limitationstxt)>.
- Stix, Gary. "Legal Circumvention: Molecular Switches Provide a Route around Existing Gene Patents" (2002) online: Scientific American <<http://www.scientificamerican.com/article.cfm?id=legal-circumvention> >.
- Submission by IIED et al, *Sui Generis Systems for the Protection of Traditional Knowledge* (Information for the Secretariat of the Convention on Biological Diversity, 31st October 2005) online: IIED <<http://www.iied.org/pubs/pdfs/G02378.pdf>>.
- Tanasugar, Lerson. "New Challenges in IPRs Protections: Biological Diversity & Biotechnology Jasmine Rice Crisis A Thai Perspective" <<http://lerson.org/public/IP/1998jasmine.pdf>>.
- Teekampagne, "Only Accept Original Darjeeling Tea" online: <<http://www.teekampagne.de/en/tea/darjeeling-tea/only-accept-genuine-darjeeling>>.
- The International Institute for the Advanced Study of Cultures, Institutions and Economic Enterprise, *Technical Assistance to the Uganda Ministry of Tourism, Trade and Industry in the Area of Intellectual Property Rights: Final Report* (2009) online: Tradecom <http://www.tradecom-acpeu.org/Portals/49/IIAS_Final_Report.pdf >.
- The Leipzig Commitment to Agricultural Biodiversity, "Towards A Peoples' Plan of Action" Leipzig, 14-16 June 1996 online: Third World Network <<http://www.twinside.org.sg/title/lei-cn.htm> >.
- Tong, Wei. "China-EU Start Cooperation on GI Products Protection and Administration" (23 march 2011) online: CRI English <<http://www.crinordic.com/7146/2011/03/29/2702s629209.htm>>.
- Traditional Knowledge Digital Library, *About TKDL* online: <<http://www.tkdl.res.in/tkdl/langdefault/common/Abouttkdl.asp?GL=Eng>>.
- U.K. Commission on Intellectual Property Rights, "Traditional Knowledge and Geographical Indications" in *Integrating Intellectual Property Rights and Development Policy* (2002) online: <http://www.iprcommission.org/graphic/documents/final_report.htm>.

UK Agricultural Biodiversity Coalition, “What Is Agricultural Biodiversity?” Online: <<http://www.ukabc.org/>>.

UNCTAD, *Commercial Diplomacy Program, Training Tools on the TRIPS Agreement: The Developing Countries’ Perspective* (January 2002) online: <http://www.unctad.org/en/docs/ditctncdmisc17_en.pdf>.

_____. *UNDP and Indigenous Peoples: A Practice Note on Engagement* online: <<http://europeandcis.undp.org/files/uploads/Poverty%20reduction/UNDP%20and%20indigenous%20peoples.pdf>>.

UNDP, “Convention on Biological Diversity” Frameworks for Action online: [undp.org](http://www.undp.org/biodiversity/biodiversitycd/frameCBD.htm) <<http://www.undp.org/biodiversity/biodiversitycd/frameCBD.htm>>.

UNESCO, *Frequently Asked Questions*, online: UNESCO <<http://www.unesco.org/culture/ich/index.php?pg=0002>>.

_____. *Recommendation on the Safeguarding of Traditional Culture and Folklore* (Adopted by the General Conference at its Twenty-fifth Session, Paris, 15 November 198) Online: <http://portal.unesco.org/en/ev.php-URL_ID=13141&URL_DO=DO_TOPIC&URL_SECTION=201.html>.

United Nations University, *TK Initiative: Convention on Biological Diversity*, online: United Nations University http://www.unutki.org/default.php?doc_id=47

United States Patent and Trademark Office, *Geographical Indication Protection in the United States*, at 3 online: USPTO <http://www.uspto.gov/web/offices/dcom/olia/globalip/pdf/gi_system.pdf>.

UNU-IAS, “The Role of Registers & Databases in the Protection of Traditional Knowledge A Comparative Analysis” (2004) online: United Nations University <http://www.ias.unu.edu/binaries/UNUIAS_TKRegistersReport.pdf>.

Urs, Shalini R. *Digital Libraries: The Road Ahead* (Inflibnet Centre, February 8, 2007) online: Caliber <http://www.vidyanidhi.org.in/shaliniurs_files/caliber.pdf>.

USTR *Press Release* 20 September 2002 online: <http://www.ustr.gov/Document_Library/Press_Releases/2002/September/US_Other_Trade_Partners_Present_Position_s_Proposals_to_Prevent_Unauthorized_Use_of_Geographic_Names.html>.

Uzma, Jamil. “Biopiracy: The Patenting of Basmati by RiceTec” Publication of the Commission on Environmental, Economic and Social Policy-South Asia & Sustainable Policy Development Institute (October 8 1998) online: <www.iucn.org/themes/ceesp/publications/art-mono/basmati.doc>.

Vassilakis, Georges. "The *Ex officio* Protection" (Minutes of the Round Table on Geographical Indications, Con contributo Mipaaf D.M. 2032 del 07/04/2008 in collaboration with OriGIn Brussels, 9 June 2009) online: Insight-Consulting <http://www.insightconsulting.eu/documents/uploads/news_en_minutes_of_the_round_table_on_the_ex_officio_protection.pdf>.

Via Campesina, "Food Sovereignty: A Future without Hunger" (1996) online: <http://www.voiceoftheturtle.org/library/1996_per_cent20Declaration_per_cent20of_per_cent20Food_per_cent20Sovereignty.pdf>.

_____. "The Right to Produce and Access to Land: Food Sovereignty - A Future without Hunger" (1996) online: The Voice of the Turtle <http://www.voiceoftheturtle.org/library/1996_per_cent20Declaration_per_cent20of_per_cent20Food_per_cent20Sovereignty.pdf>.

von Moltke, Konrad. "After Doha-Assessing the outcomes of the WTO Fourth Ministerial Conference" *IISD Commentary* (April 2002) online: IISD <<http://www.iisd.org>>.

Watching, "Greenwashing" online: <<http://www.sourcewatch.org/index.php?title=Greenwashing>>.

WHO, *Fact Sheet N°134: Traditional Medicine* (December 2008), online: <<http://www.who.int/mediacentre/factsheets/fs134/en/>>.

_____. Traditional Medicine Fact sheet N°134 (2008) online: WHO <<http://www.who.int/mediacentre/factsheets/fs134/en/>>.

Williams, Rachael & Marianne Penker. "Do Geographical Indications Promote Sustainable Rural Development?" online: <http://oega.boku.ac.at/fileadmin/user_upload/Tagung/2008/Band_18/18_3_Williams_Penker.pdf>.

WIPO, *Draft: Gap Analysis on the Protection of Traditional Knowledge* (May 30, 2008) online: <http://www.wipo.int/export/sites/www/tk/en/igc/pdf/tk_gap_analysis.pdf>.

_____. "Geographical Indications: Tasting success in China" (2007) 4 WIPO Magazine 8.

_____. "Making the Origin Count: Two Coffees" (2007) 5 WIPO Magazine

_____. *Draft Report on Fact-finding Missions on Intellectual Property and Traditional Knowledge (1998-1999)* (Geneva, April 2001) online: WIPO <<http://www.wipo.int/tk/en/tk/ffm/report/index.html>>.

_____. *The 45 Adopted Recommendations under the WIPO Development Agenda*, online: < <http://www.wipo.int/export/sites/www/ip-development/en/agenda/recommendations.pdf>>.

_____. *Traditional Knowledge: Key to a Diverse and Sustainable Future, Intellectual Property and Traditional Knowledge*, Booklet No. 2, online: WIPO < http://www.wipo.int/freepublications/en/tk/920/wipo_pub_920.pdf >.

_____. *What is Intellectual Property?* online WIPO: <<http://www.wipo.int/about-ip/en/>>.

Working Group on Indigenous Populations, *Working Paper by the Chairperson-Rapporteur on the Concept of Indigenous Peoples*, U.N. Doc. E/CN.4Sub.2/AC.4/1996/2 (1996) online: <<http://cwis.org/fwdp/International/96-12980.txt>>.

World Bank, *Trading on Your Intellect*, online: You Think Issues < <http://youthink.worldbank.org/issues/trade/intellect.php>>.

World Forum for Food Sovereignty, *Forum Documents* (2007) online: <<http://www.nyeleni.org/spip.php?article118> >.

WTO, *The Relationship Between the TRIPS Agreement and the Convention on Biological Diversity: Summary of Issues Raised and Points Made* (Council for Trade-Related Aspects of Intellectual Property Rights, 8 August 2002) IP/C/W/368 online: < www.wtocenter.org.tw/SmartKMS/fileviewer?id=25636 >.

_____. “TRIPS: Which Countries are using the General Transition Periods?” online: WTO < http://www.wto.org/english/tratop_e/trips_e/tripfq_e.htm>.

Young, Graham. “Fair Trade’s Influential Past and the Challenges of its Future” (Report Prepared for the Conference “Fair Trade, An Asset for Development: An International Dialogue” 28 May 2003, the King Baudouin Foundation, Brussels) online: < <http://www.traditionsfairtrade.com/class/documents/Youngbackgrounder-Eng.pdf> >.

Zandonà, Daniela Ida. “ACTA and the Protection of Geographical Indications: One Step Forward and Two Steps Back” (November 08, 2010) European Federation of Origin Wines online: <http://www.efow.eu/press/acta_and_the_protection_of_geographical_indications_one_step_id_80 >.