

North-South Relations under the Clean Development Mechanism: Bridging the  
Divide or Widening the Gap?

by

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DALHOUSIE UNIVERSITY  
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## ABSTRACT

*The Clean Development Mechanism (CDM) of the Kyoto Protocol has been hailed as the grand compromise of the North-South divide over climate change mitigation for its ability to reconcile the economic demands of the North with the developmental needs of the South. Having been primarily analyzed from isolated economic, environmental, or developmental perspectives, the CDM's efficacy in bridging the North-South divide remains poorly understood. This research evaluates the CDM against three qualitative criteria focused on issues affecting Southern nations' participation in international agreements. An examination of distributive and procedural issues characterizing the CDM shows that significant trade-offs exist between Northern and Southern interests under the CDM and suggests that the interests of the South are often sacrificed. On this basis, conclusions are drawn which point to the need for increased attention to and accommodation of Southern interests in the CDM specifically, and global climate change efforts more broadly.*

## LIST OF ABBREVIATIONS AND SYMBOLS USED

CDF	Clean Development Fund
CDM	Clean Development Mechanism
CER	Certified Emissions Reduction
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> -e	Carbon Dioxide Equivalent
DNA	Designated National Authority
ET	Emissions Trading
EU	European Union
FDI	Foreign Direct Investment
G-77	Group of 77
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GWP	Global Warming Potential
HFC	Hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
LDCs	Least Developed Countries
NAMAs	Nationally Appropriate Mitigation Actions
PDD	Project Design Document
SIDS	Small Island Developing States
UNFCCC	United Nations Framework on Climate Change Convention
USD	United States Dollars

## CHAPTER ONE: INTRODUCTION

### **Context of Study**

Global climate change will have a significant impact on all nations, but particularly those in the global South (World Bank Group, 2003; UNFCCC, 2007) The Intergovernmental Panel on Climate Change (IPCC) has concluded that massive greenhouse gas (GHG) emission reductions, as high as 85 to 90 percent below 1990 levels, will be required to avoid catastrophic impacts of global warming (IPCC, 2007). As such, there has been much debate over how to approach this monumental challenge in recent years. Increasingly at issue is how to increase the involvement of Southern nations in emission reduction efforts, as the rapid industrialization and population growth of nations such as China, India and Brazil have led many to doubt the efficacy of a climate change mitigation regime which fails to include them.<sup>1</sup> However, nations in the global South remain adamant that, in light of their disproportionately low historical contributions to global GHG levels, their cooperation in emissions abatement efforts must not inhibit, and should even enhance, their economic growth and development. Thus, there is a fundamental North-South divide over responsibility for emission reductions which begs the question of how the international community can effectively combat climate change in a world of vast inequalities of income and resource consumption.

It is intuitive to believe that, if climate change mitigation and development policies could converge, then Southern nations' "fear of environmental measures hampering

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<sup>1</sup> See Bhaksar, 1995; Michaelowa & Jotzo, 2005; Ellis, Winkler, Corfee-Morlot & Gagnon-Lebrun, 2007; Zenghelis & Stern, 2009.

development” would vanish (Nussbaumer, 2008, p. 92) and meaningful global participation would then be forthcoming. As such, the 1992 United Nations Framework Convention on Climate Change (UNFCCC) treaty sought to establish the principle of ‘common but differentiated responsibilities,’ which acknowledges the scientific need for global cooperation in mitigating climate change while respecting Southern nations’ developmental needs (UNFCCC, 1992a). The Clean Development Mechanism (CDM), codified in Article 12 of the Kyoto Protocol to the UNFCCC (UNFCCC, 1998), is currently the only policy initiative substantively linking developing nation emissions to international cooperative efforts on climate change under this framework of ‘common but differentiated responsibilities.’

The CDM, a market-based mechanism, allows Northern (investor) nations with binding emission reduction commitments under the Kyoto Protocol to earn credits towards meeting these commitments by implementing emission reduction projects in Southern (host) nations where it is more cost-effective to do so. In exchange for their participation Southern nations are to gain from the transfer of various project-related ‘sustainable development benefits.’ The CDM is therefore, in theory, a ‘win-win-win’ mechanism (Hayward, 2006, p. 14) in that it simultaneously benefits participants economically (low-cost emissions reductions), environmentally (by maximizing a finite amount of resources available for climate change mitigation) and developmentally (through the transfer of ‘clean’ technologies and other sustainable development benefits to hosts).

However, despite this rhetoric of mutual gain, it has been suggested that the cost-minimizing nature of market mechanisms creates significant trade-offs between cost-

efficiency and non-monetized gains such as sustainable development benefits (Chinn, 1999; Kolshus, Vevatne, Torvanger & Aunan, 2001; Nelson & de Jong, 2003; Brown, Adger, Boyd, Corbera-Elizalde & Shackley, 2004; Ellis et al., 2007; Baumert, 2006; Pearson, 2007). That such a trade-off exists seems to suggest a fundamental contradiction between the intent of the CDM to demonstrate the benefits of Southern participation in emissions abatement and the ability of the mechanism to accomplish this. It is this contradiction which this research sought to address.

### **Review of Literature**

A growing body of literature addressing the CDM has emerged in recent years. While the relatively limited scope and scale of this literature makes an independent review unwarranted at this time, it is nevertheless useful to delineate the three major categories of analysis which have characterized the literature on the CDM thus far, as doing so will clarify where analytical gaps exist.

#### *Economic and Environmental Analyses of the CDM*

Literature on the CDM has focused primarily on issues of cost-effectiveness and the validity of emissions reductions achieved under the CDM's market mechanism. Economically, concerns have been raised about the CDM's high project transaction costs as well as the CDM's ability to produce low-cost emissions in large enough volume to meaningfully contribute to climate change mitigation efforts (Baumert, 2006; Neidenberger & Spalding-Fecher, 2006; Ellis et al., 2007; Zenghelis & Stern, 2009). Despite such concerns, the majority of these analyses nevertheless conclude

that the CDM's ability to minimize emission reduction costs make it, or a similar market mechanism, indispensable to international climate change mitigation efforts.

From an environmental perspective, significant concerns have been expressed about the validity of the emission reductions being achieved under the CDM. This is primarily because the structure of the market offers investors and hosts alike incentives to overstate the host nations' 'business as usual' emission levels against which the reductions are evaluated (Repetto, 2001; Millock, 2002; Haya, 2007; Schneider, 2007), allowing for an "almost limitless" generation of emission credits (Bachram, 2004, p. 8). It is also thought that, instead of facilitating environmentally sustainable development in host nations, the CDM might actually deter potential host nations from pursuing sustainable development paths as doing so would decrease their ability to attract CDM investment in the future (Halsnæs & Shukla 2008; Olsen & Fenhann, 2008; Wara & Victor, 2008). Some have even argued that the desire to attract CDM investment has encouraged nations to proliferate highly polluting industrial practices and processes (Wara, 2006; Haya, 2007; Wara & Victor, 2008).

Despite concerns about the potential trade-offs between the environmental and economic benefits of the CDM, this literature accepts, for the most part, the necessity of a market mechanism and therefore suggests improving methodologies for project baseline establishment, closer monitoring of the validity of emissions reductions (Haites & Yamin, 2000) and sectoral (as opposed to project-based) crediting schemes to improve the mechanism's environmental efficacy (Figueres, 2005; Niederberger & Spalding-Fecher, 2006; Sterk & Wittneben, 2006; Sterk, 2008). Thus, most scholars are "rather moderate in their judgement" and "mainly preoccupied with a 'fine-

tuning' of the mechanism," focusing on piecemeal evaluations of narrowly defined aspects of the CDM and suggestions for improvement (Paulsson, 2009, p. 63) rather than posing fundamental challenges to its market-mechanism basis.

*The CDM's Contribution to Sustainability and Development*

A much smaller body of literature seeks to analyze the CDM's impact on sustainable development in host nations. Within this literature it seems that a majority of scholars interpret the 'sustainable development' aspect of the CDM as related primarily to its contributions (typically technological) towards GHG reductions in host nations. As such, these analyses tend to focus on evaluating the quality and quantity of technology transferred and the impact that these transfers have on environmental sustainability in host nations (Rowlands, 2001; Millock, 2002; Pacudan, 2005; Flamos, 2007; Seres, 2007; Dechesleprêtre, Glachant, & Ménière, 2008; Zenghelis & Stern 2009). A smaller sub-set of scholars seek to evaluate the 'sustainable development benefits' of the CDM from the perspective of host nations by employing a more expansive notion of what constitutes a 'sustainable development benefit,' which includes various social, economic and environmental project impacts (Ellis et al., 2007; Olsen, 2007; Pearson, 2007; Sutter & Parreño, 2007). These scholars have sought primarily to evaluate the CDM's potential as a development intervention, either analyzing its contribution to the development priorities of specific host nations (Gundimeda, 2004; Sirohi, 2007) or suggesting ways to increase the development benefits associated with the mechanism (Humphrey, 2004; Zhang, 2006; Heuberger, Brent, Santos, Sutter & Imboden, 2007). From this perspective, the literature is much more critical of the market mechanism basis of the CDM, as in many cases it is found

that there are significant trade-offs between cost-efficiency and the provision of sustainable development benefits for host nations (Sutter, 2003; Cosbey et al., 2005; Baumert, 2006; Pearson, 2007; Schneider, 2007). However, while this literature may offer a fundamental challenge to the CDM's efficacy as a development intervention, there nevertheless seems to be a consensus that the provision of sustainable development benefits under the CDM should not come at the cost of the market mechanism's ability to achieve its primary goal of providing low-cost emission reductions (Bozmoski, Lemos & Boyd, 2008; Wara, 2006). Literature addressing the 'sustainable development' benefits of the CDM from a more developmental (rather than environmental) perspective has therefore largely failed to connect the provision of sustainable development benefits to issues of Southern acceptance of and participation in the CDM specifically, and the possible impact on future environmental negotiations more broadly (Bozmoski et al., 2008; Klinsky & Dowlatabadi, 2009).

#### *Gaps Remaining in Literature*

That the existing literature on the CDM seems to focus overwhelmingly on the environmental and economic aspects of the mechanism suggests that 'efficiency' is associated almost exclusively with the CDM's ability to minimize the extent of the climate change burden; therefore 'efficiency' seems to be synonymous with cost-effectiveness (Shukla, 2005, p. 122). However, unlike other emissions trading and offset mechanisms for which these cost-benefit analyses may be appropriate, the CDM is not simply meant to facilitate low-cost emission reductions. Rather, it is designed to engage Southern nations in global emission abatement efforts. As such, it

is necessary to focus more closely on those facets of the mechanism of most concern to the South.

## **Theoretical Approach**

### *Re-Conceptualizing the CDM*

The perceived purpose of the CDM will determine the criteria against which it is evaluated. For example, if the CDM is thought to be simply a market tool designed to decrease the costs of Kyoto Protocol compliance for the North, then the transfer of sustainable development benefits to host nations under the CDM is ideal, but ultimately irrelevant as the mechanism's ability to provide low-cost emission reduction options operates independent of any such benefits. If the goal of the CDM is interpreted as cost-minimization *and* the transitioning of Southern nations towards less carbon-intensive economies, then issues such as technology transfer and the impact of the CDM on hosts' national energy and industrial practices become more important as evaluative criteria. Likewise, if the CDM is seen as an opportunity for Southern nations to leverage developmental benefits from wealthy Northern nations, then the mechanism's ability to provide these benefits is the desired area of inquiry. That the literature addressing the CDM has almost exclusively focused on these compartmentalized evaluative approaches is indicative of a significant lacunae in the scholarly understanding of the context out of which the CDM arose, i.e. the stymied negotiations between North and South over the South's role in mitigating climate change.

As Matsuo (2003) noted at the onset of the CDM's implementation, it was expected that Southern nations would come to understand the "win-win nature of the market-based mechanisms" through their experiences with CDM projects," meaning that "the success of the CDM [would] bring the success of international climate mitigation efforts in a cost-effective manner" based on "mutual understanding and benefits" (pp. 9 -10). Sari and Meyers (1999) similarly claim that, because the CDM is the 'only link' between Southern nations and the Kyoto Protocol, its "workability" is important not only to enable the effectiveness of global cooperation under the Kyoto Protocol, but also to ensure Southern nations' willingness to participate in future global emissions agreement (p. 3). Thus, the broader relevance of the CDM is not related to the amount of emission reductions it results in, or the cost-efficiency with which it operates, but rather its effectiveness in mitigating the North-South divide. Effectiveness in this regard requires that the CDM demonstrate that the conflicting interests of the North and South can be reconciled and that the developmental needs of the South can be enhanced rather than inhibited by the use of a 'mutually advantageous' market mechanism.

The CDM's contribution to cost-efficient emissions reductions, and perhaps even environmental sustainability in Southern nations, may be facilitated through a market mechanism (and adequately understood through economic and technological analyses). However, evaluating the CDM's efficacy in bridging the North-South divide requires a more critical approach which does not conflate the achievement of various quantitative environmental, economic, or technological successes with the desirability or efficacy of a market-based mechanism as a whole. In seeking to

evaluate the CDM from a more holistic perspective it was necessary to employ evaluative criteria which could address those characteristics of the CDM which are of more relevance to the South. The following section lays out three such evaluative criteria. It should be first be noted, however, that while I am evaluating the CDM in isolation from other aspects of the current Kyoto climate change regime, much of the literature from which the following evaluative criteria are drawn seeks to analyze international regimes, institutions, or agreements in their entirety. However, because the CDM has a unique objective within the broader Kyoto regime – the institutionalization of North-South climate cooperation – and because Southern nations can choose whether or not to participate in the CDM based on their perceptions of the mechanism’s desirability or potential benefits, the application of said evaluative criteria to the CDM is nevertheless warranted for my purposes.

## **Evaluative Criteria**

### *Defining CDM Effectiveness*

In seeking to analyze the ‘effectiveness’ of any cooperative mechanism or agreement, one must first realize that the very notion of effectiveness is a variable concept. Some may perceive wide-spread cooperation in a mechanism to be indicative of its efficacy, while others may associate success with a mechanism’s ability to achieve its mandated goals (Young, 1999; Grundig, 2006). As noted above, much of the current literature on the CDM seems to have evaluated the mechanism primarily in terms of its capacity to achieve its mandated economic and environmental goals. However, such accomplishments do not necessarily mean that the CDM is efficient, or

successful, as a cooperative agreement can succeed in accomplishing its explicit goals but nevertheless fail to address the underlying problem it was initially created to address (Hisschemöller & Gupta, 1999; Young, 1999). Therefore, the first criteria against which I will be evaluating the CDM will be whether or not it has mitigated or ameliorated the problem that prompted its creation, i.e. the need to involve Southern nations in climate change mitigation by demonstrating the reconcilability of various North-South interests. This criteria, which has been used to evaluate the efficiency of international environmental agreements in the past (e.g. Hisschemöller & Gupta, 1999; Young & Levy, 1999; Schmidt, 2006) acknowledges that while the CDM may be achieving its mandated objectives of low-cost emission reductions and environmental sustainability in Southern nations, it may nevertheless be failing to address the underlying problem of the North-South divide which it was implicitly designed to mitigate.

### *The Importance of Procedural Equity*

The second criteria I will employ to evaluate the CDM is related to the CDM's capacity to provide procedural equity. Many scholars have emphasized the importance of "procedurally fair rules" for cultivating participation in a given cooperative agreement (Neumeyer, 2001, p. 132). Procedural equity is thought to be particularly important as it allows those nations who perceive their interests to be under-represented by a given decision or negotiation outcome to feel that they have at least been formally recognized, increasing the likelihood that their interests will be worked into future agreements (Schlosberg, 1999). As Neumeyer (2001) explains, "substantially the same bargaining outcome that is accepted by a party if it feels

sufficiently involved in the bargaining process can be rejected if the party feels that it has been treated unjustly” (p. 132). Therefore, procedural equity is likely to influence the acceptability of an international agreement or cooperative mechanism regardless of its outcomes (Lind & Taylor, 1988; Corbridge, 1998; Shrader-Frechette, 2002; Murdock, Wiessner & Sexton, 2005).

Procedural equity is important for more than simply increasing the likelihood of individual nations’ support of and participation in an international cooperative agreement or institution. If negotiators lack domestic support for their positions towards an international agreement, its implementation is likely to fail domestically, and therefore internationally (Hisschemöller & Gupta, 1999). As such, procedural equity in the form of transparency and substantive public participation at the local level is also important for a cooperative mechanism as it can help link local issues to global ones, thereby increasing the chances that domestic populations will support participation in the mechanism at the international level (Ibid; Goldschmidt, 2002).

Issues of procedural equity are of particular relevance to an international cooperative agreement involving relations and between parties perceiving themselves to be unequal. From a historical perspective, it is argued that much of the under-representation of developing world interests and general marginalization of the poor in international institutions today are the result of Southern nations’ low “representation” and “access to power” in past international decision-making processes (Ikeme, 2003, p. 197). While the existence of inequalities in negotiating power can exacerbate contradictions between nations, reinforce zero-sum worldviews, erode conditions of mutual trust, or simply cause parties to lose their

interest in the entire cooperative process (Hisschemöller & Gupta, 1999; Kverndokk, 1995; Parks & Roberts, 2006), agreement on and enforcement of fair processes and procedures can help to mitigate these feelings of structural vulnerability, therefore making “seemingly impossible international cooperation possible” (Parks & Roberts, 2006, p. 339). As the CDM is a series of on-going negotiations between unequal parties, both at the international level between North and South and at the local level between host communities and project implementers, procedural equity in the context of the CDM is of the utmost relevance for the acceptance and support of the mechanism amongst Southern nations.

#### *The Facilitation of Social Trust*

The final criteria against which I will evaluate the CDM concerns the mechanism’s ability to facilitate ‘social trust,’ which is thought to be quite important in securing international cooperation in a variety of institutions and regimes. The theory of social trust is premised on the notion that while participation in an agreement or institution at the domestic level can be enforced by national governments, in the international arena, nations must “decide whom to make agreements with, and on what terms, largely on the basis of their expectations about their partners’ willingness and ability to keep their own commitments” (Keohane, 1984, quoted in Parks & Roberts, 2008, p. 637). As such, a central question of international cooperation is how “governments can convince potential partners that they will honour their commitments” (Parks & Roberts, 2008, p. 637). Several different definitions of ‘trust’ exist. For example, Hardin (2002) defines trust as the belief that the interests of both parties in a cooperative agreement – the one who trusts and the one who is trusted – are

“encapsulated” (p. 31). Others focus on the reciprocal nature of trust; Kydd (2000) defines trust as the belief that one’s potential partners in a cooperative agreement prefer cooperation to exploitation (which leads to the reasonable expectation that any cooperative efforts will be reciprocated), while Axelrod (1984) states that trust is what happens when one party cooperates with another, and then continues to do so if that cooperation is reciprocated. Social trust can therefore be defined as the belief that the ‘encapsulation’ or alignment of parties’ interests within a given international agreement or institution make reciprocated cooperation more likely than exploitation.

However, social trust must not only be vested in potential partners, but also in the “abstract capacities” of a given agreement or mechanism to solve the problem that it was initially designed to solve (Tennberg, 2007, p. 322; Levi, 1998). Thus, it is also important that participants in the CDM believe that the mechanism is structured in such a way that it will be conducive to the reciprocation of cooperation and unlikely to lead to, or allow for, exploitation.

Much like procedural equity, the existence of social trust is arguably more relevant when the agreement or institution at issue is one which is intended to coordinate cooperation between partners which perceive themselves to be unequal. As Nelson and de Jong (2003) argue, when power relations between stakeholders are unequal, it is often the resource-strong stakeholders who define the terms of trade and relations. As a result, Southern nations are thought to be particularly “reluctant to embark on a deal” if they feel the real motives are “strikingly different” from the stated ones or if they feel that they might be “betrayed in the future” (Sari & Mayers, 1999, p. 8).

Recognition of these structural inequalities has therefore led Southern nations to have

a general distrust of any idea conceived of or supported by the North (Haque, 1999; Parks & Roberts, 2006). Thus, there seems to be a critical need for the CDM to effectively facilitate social trust if it is to make any progress towards encouraging meaningful and productive North-South cooperation.

Perceptions of structural inequalities in international negotiations also indicate a need to consider the impact of past cooperative efforts and agreements on social trust. It has been argued that the experiences of past attempts at international cooperation will impact the way parties approach and interpret current or future efforts; positive experiences will induce participation, while negative experiences are likely to deter it (Keohane, 1984, quoted in Neumeyer, 2001, p. 132). It is therefore important to consider the broader context out of which the CDM arose, including the impacts that structural issues of the past will have on Southern nations' interpretations of the CDM, as well as the impact that the outcomes of the CDM may have on the willingness of Southern nations to participate in future cooperative mechanisms.

### **Overview of Research**

As the purpose of this research is to analyze holistically the CDM in the broader context out of which it arose, it is first necessary to examine the scientific, economic and political bases for the North-South divide over international cooperation in climate change mitigation. I therefore begin Chapter 2 by delineating the scientific need for Southern nation participation in climate change mitigation. I then examine the economic, political and ethical issues affecting North-South cooperation by examining both the history of international environmental agreements as well as a

number of current primary documents reflecting the negotiation stances of various nations on matters of climate change cooperation. Having delineated a number of fundamental conflicts and tensions inhibiting North-South participation in climate change mitigation, I then, in Chapter 3, describe how the CDM emerged as a ‘compromise’ to the North-South divide. Here I argue that, despite the rhetoric about ‘compromise’ and ‘mutual gain’ surrounding the CDM, the fundamental issues of the North-South divide nevertheless inform the expectations each side has of the mechanism, creating significant tensions between North and South *within* the confines of the CDM. Having determined what these tensions are, I then, in Chapter 4, seek to evaluate empirically a series of distributional and procedural issues surrounding the CDM by drawing upon analyses and case-studies in the literature on the CDM as well as a number of statistics derived from official sources. Applying the three evaluative criteria laid out above, I suggest here that the market mechanism of the CDM does not mitigate, and may even exacerbate, these North-South tensions. On this basis, I use the final chapter of this work to discuss the implications of the CDM’s shortcomings for the future of North-South cooperation in climate change, concluding that there is a pressing need for increased attention to, and accommodation of, the interests of Southern nations in the CDM specifically, and global climate change efforts more broadly if their continued, meaningful participation is to be assured.

## **Limitations and Rationale**

### *Limitations of Research*

While I endeavoured to examine a broad range of nations' positions on climate change issues, it was often necessary to refer to 'Southern nations' or 'Northern nations' in general terms. The shortcomings of such generalizations are mitigated to a certain extent by the fact that international climate change negotiations are typically characterized by two fairly unified negotiation blocs split roughly along North-South lines. However, for the sake of accuracy, I note throughout this work any significant diversions from these generalized North-South positions. Nevertheless, because the nature of this work is such that generalizations are necessary, the conclusions contained herein should be viewed as prescriptive, in that they point to the need to acknowledge the broader intentions and implications of the CDM rather than predictive, i.e. drawing firm conclusions about what the impact of the CDM on continued Southern participation in climate change mitigation efforts is likely to be.

### *Rationale for Research*

The literature on the CDM seems to express a general consensus that the CDM, or similar market-based mechanism, will form the core of any future cooperative agreement on climate change mitigation (Cosbey et al., 2005; Wara, 2006) and that increased involvement of Southern nations will be the major goal of future negotiations (Drozdiak & Pianin, 2001). For example, in an analysis of 13 proposed alternatives to the Kyoto Protocol, Barrett and Stavins (2003) note that "nearly all of the proposals would allow, encourage, or require implementation through market-

based instruments” (p. 356). At a time when the international community is increasingly resorting to the use of market mechanisms to solve global environmental problems while simultaneously acknowledging the importance of securing Southern participation in these efforts, it is essential to critically examine the performance of tools, such as the CDM, which purport to reconcile these issues.

The CDM has been posited not only as evidence that environmental sustainability and economic growth can co-exist, but also, and perhaps more importantly, that the interests of the North and South are not inherently conflictual and can be provided for under the auspices of one cooperative, market-based mechanism. Therefore, examining the CDM’s ability to live up to its promise of providing sustainable development benefits while still ensuring cost-effectiveness and environmental validity is critical to understanding how the CDM is likely to impact Southern nations’ willingness to trust in and support such ‘win-win’ cooperative efforts in the future.

## CHAPTER TWO: CLIMATE CHANGE, DEVELOPMENT AND THE NORTH-SOUTH DIVIDE

The debate over international cooperation in climate change mitigation is one which spans a number of disciplines and encompasses a wide range of perspectives. The purpose of this chapter is to give a brief overview of the key scientific, economic, political and ethical arguments informing the North-South divide over climate change cooperation out of which the CDM arose, and which it is intended to mitigate.

### **The Reality of Climate Change**

#### *The Science of Climate Change*

A scientific consensus has emerged in recent years concerning the anthropogenic contributions to climate change and the need for significant GHG reductions emissions. The IPCC reported in 2007 that over the last century concentrations of carbon dioxide (CO<sub>2</sub>) have increased from 278 to 379 parts per million and the average global temperature has risen to 74 ° Celsius, marking the “largest and fastest warming trend...in the history of the Earth” (IPCC, 2007, p. 30). While a small minority of scholars challenge the notion that anthropogenic emissions are influencing the Earth’s temperature,<sup>2</sup> the IPCC nevertheless concludes with “*very high confidence* that the global average net effect of human activities since 1750 has been one of warming” (Ibid, p. 15) and that “anthropogenic warming over the last three decades has *likely* had a discernable influence at the global scale on observed

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<sup>2</sup> Demeritt (2001) offers an interesting discussion of the influence of political and corporate considerations on challenges to the science of climate change.

changes in many physical and biological systems” (Ibid, p. 41).<sup>3</sup> A number of impacts of this global warming have already been observed, including widespread melting of snow and ice, rising global average sea level and changing frequency and/or intensity of some extreme weather events (heat waves, heavy precipitation events, intense tropical cyclone activity) (Ibid, pp. 30-33). While there is still some uncertainty about the precise implications of climate change over the longer-term, it is expected that there will be reduced yields from rain-fed agriculture; coastal erosion; significant loss of species biodiversity; increased water stress and shortages; widespread population displacement; endemic morbidity and mortality due to diarrhoeal disease and increased malnutrition; and increased deaths, diseases and injury due to extreme weather events (Ibid). In order to stabilize the global temperature to levels sufficient to mitigate these impacts, the IPCC has estimated that the emissions of industrialized nations will need to be reduced to 25 to 40% below 1990 levels by 2020 and 80 to 95% by 2050 (Ibid). Even if Northern nations were to meet these ambitious targets, Southern nations would still need to achieve a “substantial deviation from baseline emissions” in order to stabilize the climate (den Elzen & Höhne, 2009). Therefore, from a scientific perspective, it is clear that the meaningful and sustained participation of *all* nations in mitigating GHG emissions is required to avoid potentially catastrophic affects of global warming. However, outside the scientific realm this assertion is slightly more problematic.

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<sup>3</sup> The IPCC uses the following terms to reflect the assessed probability of occurrence for various climate change induced events and impacts: virtually certain >99%; extremely likely >95%; very likely >90%; likely >66%; more likely than not > 50%; about as likely as not 33% to 66%; unlikely <33%; very unlikely <10%; extremely unlikely <5%; exceptionally unlikely <1% (IPCC, 2007).

### *Differentiated Responsibility and Vulnerability Between Nations*

While climate change is a global phenomena which will affect all nations, there is a marked difference between the responsibility for, and vulnerability to, climate change between Northern and Southern nations. Figure 1 shows that the majority of anthropogenic contributions to global warming have come from the wealthiest and most developed regions of the world; specifically, the richest 20% of the world is responsible for over 60% of current GHG emissions (80% if past contributions are taken into consideration) (Parks & Roberts, 2006, p. 341). Further, one should note that the United States and the European Union (EU) combined have alone been responsible for nearly 50% of historical emissions, despite possessing only 10% of the world's population (Bachram, 2004, p. 1), thus reiterating the existence of gross inequalities in national usage of the Earth's atmospheric resource indicated in Figure 1.

While Northern nations have historically been the main contributors to atmospheric GHG levels, the emissions from key Southern nations, due to their rapid industrialization and population growth, are approaching (and in some cases have even surpassed) those of Northern nations. For example, a recent reported concluded that, as of 2009, China became the number one source of GHG emissions annually, followed by the usurped United States, Canada, and then India (Maplecroft, 2009). While there have therefore been substantial increases in the national emission levels of Southern nations such as China and India in recent years, they still represent only fragment of cumulative global emissions. Moreover, on a per capita basis, these nations still lag far behind their Northern counterparts. To demonstrate: as of 2009,

the per capita emission levels of Australia averaged 20.6 tonnes of CO<sub>2</sub> per capita annually, closely followed by the United States (19.8 tonnes of CO<sub>2</sub>) and Canada (18.8 tonnes of CO<sub>2</sub>) (Shahan, 2009). Conversely, China and India produce a mere 4.5 tonnes of CO<sub>2</sub> and 1.16 tonnes of CO<sub>2</sub> per capita annually, respectively, placing them far down the global ranking in this respect. While there are significant variations in per capita emission levels within the broader categories of Annex I (Northern) and non-Annex I (Southern), as Figure 1 shows, Northern nations, on average, have significantly higher per capita emission levels than their Southern nation counterparts.

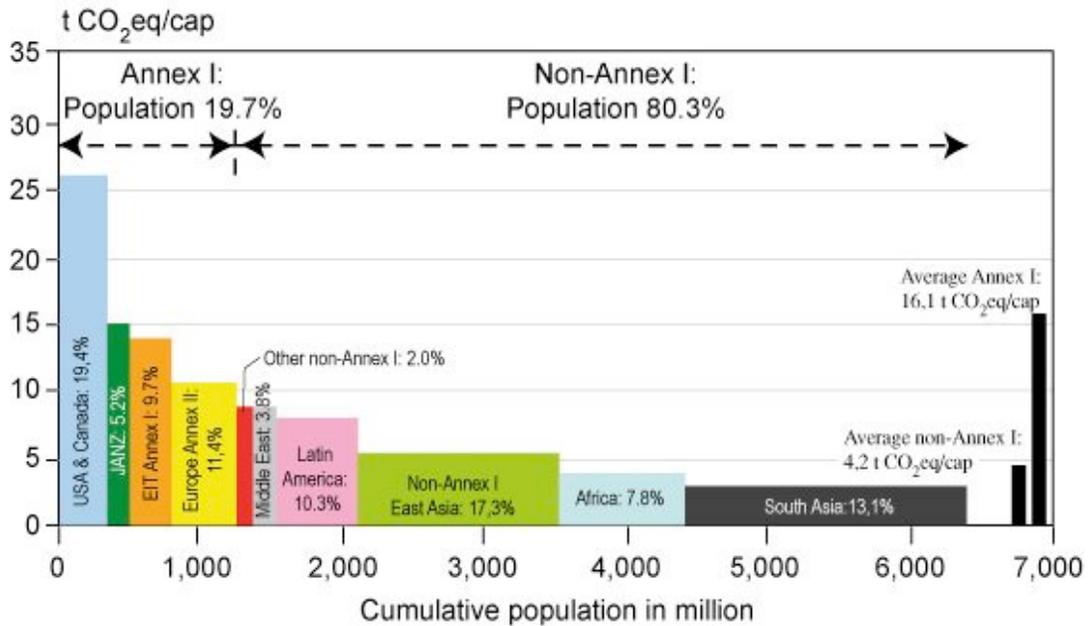
Despite their relatively low historical contributions to GHG levels and their low per-capita emission rates today, Southern nations are likely to be the most affected by the adverse effects of climate change as they possess fewer of the social, technological, and financial resources required to adapt.<sup>4</sup> As the IPCC explains, “The capacity to adapt [to climate change impacts] is dynamic and is influenced by a society’s productive base, including natural and man-made capital assets, social networks and entitlements, human capital and institutions, governance, national income, health and technology. ... as well as development policy” (IPCC, 2007, p. 56). A vicious cycle therefore exists in which the ‘underdevelopment’ of many Southern nations – represented by their economic vulnerability, material poverty and limited infrastructural capacity – makes them less able to respond to the adverse effects of

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<sup>4</sup> North America, Europe, and Australia/New Zealand are not without their vulnerabilities. In North America, for example, warming in Western mountain ranges is projected to increase winter flooding and reduce summer flows ‘exacerbating competition for over-allocated water resources’, while cities that experience heat-waves are likely to experience increased number, intensity and duration of such incidents (with potential for adverse health impacts) (IPCC, 2007, pp. 50-52). However, due to their relatively developed infrastructure and extant levels of wealth, their ability to adapt to these adverse effects is significantly higher than their developing nation counterparts.

climate change which, in turn, further impedes their ability to reach their developmental goals.

*Figure 1: Distribution of regional per capita GHG emissions over the population of different country groupings*



*Note: The percentages in the bars indicate a regions share in global GHG emissions. The terms 'Annex I' and 'non-Annex I' are UNFCCC categorizations which refer roughly to developed and developing nations, respectively (see n. 16 on p. 39 for further explanation). All figures are from 2004.*

*(Source: IPCC, 2007, Working Group III, SPM, Figure 3a/b)*

### *Linking Climate Change and Development*

While economic growth and development are leading causes of climate change due to their association with fossil-fuel use and anthropogenic GHG emissions, they are also the means by which nations may become less susceptible to the adverse impacts of global warming. From the standpoint of Southern nations then, climate change acts as both a motivation to pursue development, as well as a deterrent. However, it is important to realize that these two concerns are not equal, as many Southern nations

have much more pressing concerns to address than the relatively far-off impacts of climate change, such as widespread poverty, disease, malnourishment and various forms of resource scarcity (Klein, Schipper & Dessai, 2003).<sup>5</sup> Thus, while Southern nations' particular vulnerability to the impacts of climate change and their increasingly substantial GHG contributions point to the need for their meaningful inclusion in emission reduction efforts, their lack of historical responsibility for GHG emissions and their relative paucity of per capita emission levels and global wealth offer a compelling argument for them to abstain. These considerations combined form the basis for the so-called North-South divide.

### **The North-South Divide**

The North-South divide is a vast and expansive topic which has been addressed extensively in the literature on climate change cooperation (see Jamieson, 1992; Grubb, 1995; Shue, 1999; Gardiner, 2004a, 2004b; Prum, 2007; JoAnne, 2008). For the purposes of this research, references to the 'North-South divide' will refer to the main factors inhibiting meaningful cooperation between North and South in climate change mitigation. The following sections outline the key arguments of this North-South divide.

#### *On the Participation of Southern Nations*

It is important to recognize that overtures made by Northern nations concerning the need for Southern participation in climate change mitigation are not confined to the concerns about the environmental efficacy of global mitigation efforts addressed

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<sup>5</sup> This is addressed in more depth in subsequent sections on the 'fundamental right to development.'

above. While Northern nations' rhetoric during international environmental negotiations tends to emphasize morally defensible concerns about environmental sustainability, that these claims are made amidst lacking progress by Northern nations towards their current Kyoto targets and opposition towards more stringent commitments in the future suggests the existence of a priority above that of the environment. Northern nations have repeatedly made the ambitiousness of their targets contingent on the extent to which Southern nations are made to participate in emissions reductions. Most recently, Australia announced that it would "unconditionally" reduce emissions to 5% below year 2000 levels, but increasing this to 15% below 2000 levels would only occur "if there is global agreement...under which major developing countries commit to substantially restrain emissions" (FCCC/AWGLCA/2009/MISC.4(I), p. 24). The United States similarly notes that it is "committed to reaching a strong international agreement" based on "the premise that the agreement will reflect the important national actions of all countries with significant emissions profiles to contain their respective emissions," specifically "developing country Parties whose national circumstances reflect greater responsibility or capability" (FCCC/AWGLCA/2009/MISC.4(II), p. 106-108). Finally, the EU has announced that it will unilaterally reduce emissions of the EU-27<sup>6</sup> to 20% below 1990 levels by 2020 and 30% provided that "economically more advanced developing countries contribute adequately according to their responsibilities and respective capabilities" (FCCC/AWGLCA/2009/MISC.4(I), p. 25). While some may interpret such statements as intended to motivate Southern

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<sup>6</sup> The EU -27 refers to the 27 nations who are Party to the European Union.

nations' meaningful engagement in emission reductions, such a view ignores the distinct prioritization of economic concerns which has dominated Northern nations' approaches to climate change mitigation since negotiations on the topic began. As Wara and Victor (2008) argue, the involvement of Southern nations in emission reductions efforts is essential to ensure that "all countries impose some level of required effort on their economy," which is of particular importance to nations such as the United States as "some of the largest [Southern] emitters are major economic competitors of U.S. firms" (p.18). Vezirgiannidou (2008) also suggests that the United States' main reason for refusing to participate in past climate change efforts was because it did not want to "cede competitive advantages to its trade competitors, of which China is the most significant" (p. 51).<sup>7</sup> Therefore, while there is no doubt a desire amongst Northern nations to mitigate emissions for environmental purposes, their approaches to actual cooperation on this matter are first and foremost informed by domestic economic considerations.

#### *On the Fundamental Right to Development*

As suggested above, Southern nations' priorities in the realm of climate change cooperation tend to focus on short-term developmental needs. Thus, as long as there have been discussions of international environmental cooperation, the 'right to development' has been a clarion call for Southern nations. For example, Malaysia states that any global efforts to mitigate climate change must not "infringe on the inalienable right of developing countries to continue on their development path"

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<sup>7</sup> Vezirgiannidou (2008) bases his claims on an analysis of statements made during United States' House and Senate debates concerning whether or not the Kyoto Protocol would be ratified by the United States.

(FCCC/AWGLCA/2009/MISC.1, p. 57) while China emphasizes that “the right to development is a basic human right that is undeprivable” and that “economic and social development and poverty eradication are the first and overriding priorities of the developing countries” (FCCC/AWGLCA/2009/MISC.4(I), p. 63). At its very core, the justification for adherence to this ‘fundamental right to development’ in the context of global climate change is that Northern nations exploited global resources to achieve their current levels of wealth, meaning that Southern nations also have a fundamental right to do so. This position was expressed quite bluntly by a Jamaican official who, upon receiving criticism for his nation’s environmental policies from an American scholar, stated that, “You Americans raped your environment in order to develop your country and raise your standard of living. Now we Jamaicans reserve the right to do the same” (quoted in Handelman, 2005, p. 242). This does not mean, however, that Southern nations intend to pursue unmitigated development with little concern for the environmental impacts of doing so. On the contrary, many Southern nations have been quite active in taking steps to reduce their GHG emissions.<sup>8</sup>

However, acknowledging the limited financial, technological and political capacity of Southern nations substantially to reduce their emissions, there is a need to broaden these efforts in ways which, because of the economic sacrifices they would require, Southern nations are likely unwilling to accept. Therefore, according to this facet of the North-South divide, any emission reductions required of Southern nations above

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<sup>8</sup> As Repetto (2001) noted to be the case following the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, “developing countries refused at Rio to do anything then they went home and did things anyways; developed countries pledged till they were blue in the face and then went home and did nothing” (p. 322). More recently, many nations have recently developed plans to undertake emissions reduction in the form of Nationally Appropriate Mitigation Actions (NAMAs) (see von der Goltz, 2009).

and beyond those currently being undertaken domestically must be entirely financed, or otherwise supported, by Northern nations.

The North-South divide runs deeper than this, however. China states that the “right to development of developing countries should be adequately and effectively *respected and ensured* [italics added] in the process of global common efforts in fighting against climate change” (FCCC/AWGLCA/2009/MISC.1, p. 19). India too notes that “action on Climate Change *must enhance* [italics added], not diminish the prospects for development Government of India, 2009, p. 11). Statements such as these suggest that, if the participation of Southern nations is desired or required by the international community, then the way in which they are to participate must not simply ‘respect’ Southern nations’ right to development, but must actively promote it. Such demands are rooted, in part, in the notion of ‘historical debt.’

#### *On Compensation for Historical Debt*

The root justification for Southern nations’ demands for ‘compensation’ for Northern nations’ historical debt can be found in Principle 2 of the Rio Declaration on Environmental and Development, which states that while all nations have the “sovereign right to exploit their own resources pursuant to their own environmental and developmental policies” they also have the “responsibility to ensure that activities within their jurisdiction do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction” (UNEP, 1992). While the adverse impacts of most forms of environmental degradation are primarily confined to those who caused them, the emitting of GHGs into the atmosphere constitutes a unique

problem in that the source of the degradation is local, but the impact is global. Because the ‘degradation’ of the global atmospheric resource in the past by Northern nations has and will continue to adversely and disproportionately affect Southern nations, the aforementioned Principle of ‘do no harm’ has effectively been ignored in the case of climate change. As such, Southern nations’ demand ‘compensation’ for the damage caused by Northern nations’ high historical contributions to global warming (their ‘historical debt’) in the form of technological and financial mitigation and adaptation assistance, as well as other development benefits. African nations, many of whom are amongst the most vulnerable to climate change, have been particularly fervent on this point, arguing that they should be “equitably compensated for environmental resources, economic and social losses” related to climate change (UNEP, 2009, p. 1) and that any “global carbon trading mechanisms...[designed to address] climate change should give Africa an opportunity to demand and get compensation for the damage to its economy caused by global warming” (African Union, 2009, p. 3). These sentiments are not restricted to the African continent, however. Bolivia also asserts that Northern nations have run up an “emissions debt” which must be “repaid to developing countries,” and that Southern nations are “not seeking economic handouts to solve a problem we did not cause” but rather are calling for “full payment of the debt owed to us by developed countries” (FCCC/AWGLCA/2009/MISC.4(I), p. 47). Lesotho, on behalf of the Least Developed Countries (LDCs), similarly insists that funding for climate change mitigation and adaptation is “not a donation to developing countries” but rather it is “payment for damage” (FCCC/AWGLCA/2009/MISC.4(II), p. 10). Thus, while

many aid regimes and mechanisms of ‘mutual gain’ have sought to transfer funds and technology to developing nations, the “ethical obligation on developed countries to provide funds is particularly compelling in the context of climate change, since the ability to assist meets responsibility for damage inflicted” (von der Goltz, 2009, p. 18). As such, Southern nations have repeatedly emphasized the need for adaptation and mitigation assistance to be ‘predictable’ (FCCC/AWGLCA/2009/MISC.4(II), p. 110) leading to expectations of ‘assessed contributions’ of the gross domestic product (GDP) of Northern nations as opposed to reliance on ‘win-win’ market mechanisms or voluntary measures which are, by nature, unpredictable.

*On the Global Allocation of Emissions and Wealth*

While many Northern nations view proposals for per capita emissions convergence as “politically explosive and economically inefficient” (Roberts & Parks, 2007, p. 202) or political ‘non-starters’ (Grubb, Vrolijk, & Brack, 1999) due to their potential costs, Southern nations nevertheless assert the importance of per capita convergence as a requirement for their participation in global climate change efforts. For example, the Indian government maintains that a future climate change agreement must recognize that “every citizen of the globe has an equal entitlement to the planetary atmospheric resource” and that “any global Climate Change regime which results in merely freezing of the huge divergence in per capita emissions, will not be acceptable on grounds of equity” (Government of India, 2009, pp. 4-6). This opposition to global per capita emission inequalities is not based on abstract egalitarian principles, but rather it is a practical call for more equitable distribution of a common resource which is seen as linked to global wealth. Thus, while debate over climate change mitigation

often focuses on issues of ‘de-coupling’ emissions from economic growth and the importance of pursuing of less carbon-intensive development paths, behind all the rhetoric exists an undeniable correlation between per capita emissions levels and wealth and prosperity. This is shown, not only in the refusal of Northern nations to accept ambitious emission reduction targets out of concern for what the implications of doing so would be for their domestic patterns of production and consumption and international economic competitiveness, but also in the simple fact that, for the most part, those nations with the highest global per capita emissions also rank amongst the highest in levels of global wealth and standards of living.<sup>9</sup> As China’s lead negotiator during the Kyoto negotiations said, “In the developed world only two people ride in a car, and yet you want use to give up riding on a bus” (quoted in Parks & Roberts, 2006, p. 339). Thus, to the extent that GHG emissions are associated with wealth and prosperity, calls for emission reductions in the global South will continue to be seen as “shrill” and “surreal” (IISD, 2006, p. 17) as they are tantamount to asking Southern nations to make developmental and economic sacrifices which wealthier Northern nations seem unwilling to make.

Southern nations also rely on calls for per capita emissions convergence as a means to instill into the Northern conscience a recognition that, due to a variety of environmental constraints of which global warming is only one, the domestic production and consumption levels of Northern nations are not achievable for the

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<sup>9</sup> There are some notable exceptions to this trend. For example, several OPEC nations have per capita emission levels which greatly surpass even those of Australia, despite their being ‘developing’ nations. Argentina, Malaysia, Singapore, and Mongolia similarly have relatively high per capita emissions, demonstrating that emission consumption levels do not always correspond with ‘developed/developing’ categorizations. (For a full ranking of nations by per capita GHG emissions, see World Resources Institute, n.d.).

majority of the world. Therefore, in order for Southern nations to have 'environmental space' into which to grow, Northern nations must substantially reduce their emissions. This has repeatedly been demanded by Southern nations in climate change negotiations. For example, India points to the importance of "an equitable allocation of the global atmospheric resource" in enabling Southern nations to pursue their 'right to development' by "rectifying unsustainable life-styles in all countries" (FCCC/AWGLCA/2009/MISC.4(II), p. 107). Cuba reaffirms this position, stating that "to reach long term climate goals, luxury and waste associated with the production and consumption patterns of developed countries must be substantially modified" (FCCC/AWGLCA/2009/MISC.1, p. 26). Bolivia also calls for Northern nations to compensate Southern nations by making up for "lost environmental space, stabilizing global temperature and by freeing up space for the growth required by developing countries in the future" (FCCC/AWGLCA/2009/MISC.4(I), p. 44). Therefore, a global climate change mechanism intent on facilitating the participation of Southern nations must not only actively contribute to their developmental goals, but must also ensure that Northern nations take on significant domestic reductions so that the pursuit of these goals are not overly-impeded by environmental constraints.

#### *Summary of Issues Characterizing the North-South Divide*

The North-South divide is therefore marked by significant tensions between the primarily economic concerns of Northern nations (which lead them to demand meaningful Southern participation) and the developmental needs of Southern nations (which force them to insist upon substantial contributions to their developmental endeavours as well as rectification of global inequalities in per capita emissions and

wealth). There are, however, two other issues which inhibit meaningful cooperation in climate change mitigation. These are addressed below.

### **Issues of Procedural Equity and Social Trust**

#### *On the Importance of Procedural Equity*

It has been argued that the history of climate change negotiations and agreement has been “unkind” to Southern nations largely because Southern nations lack the power and resources required to “distort free bargaining” that Northern nations possess (Shukla, 2005, p. 128). Thus, as Porter and Brown (1991) argue:

The developing states’ perceptions of the global economic structure as inequitable has long been a factor in their policy responses to global environmental issues. Those perceptions are based on the reality of the industrialized countries’ dominance of world trade and financial systems and the continued evolution of those systems to the disadvantage of [the] developing countries. (quoted in Najam, 1994, p. 445)

Both the terminology and arguments made by Southern nations in the documents examined for this research reveal concerns about structurally vulnerability in international negotiations and relations. In the first instance, the influence of perceived structural inequalities on Southern nations’ approaches to climate change negotiations are evidenced by the repeated calls for more equitable representation of their interests within climate change negotiations and agreements. For example, Malaysia states that a ‘shared vision’ for future climate change cooperation must be “formulated in the spirit of consensus decision-making” and therefore cannot be “imposed on any developing country Party” (FCCC/AWGLCA/2009/MISC.1, p. 56) while India asserts the need for a “multilateral governance structure that is sufficiently responsive to the perspectives of the developing country Parties” (Ibid, p.

41). There have also been repeated calls by the Group of 77 (G-77) and China for equitably governed fund-based structures (as opposed to market mechanisms) as well as improved ‘accountability,’ ‘fairness,’ and ‘transparency,’ in the context of global climate change cooperation (FCCC/AWGLCA/2009/MISC.4(II), p. 110; von der Goltz, 2009). While it may be “tempting to dismiss the South’s persistent distrust of the North as the paranoia of historical baggage” it is important to recognize that these concerns about inequitable procedural processes emerge “not from what transpired in the past, but [from perceptions of] the South’s inability to influence what might happen in the future” (Najam, 1994, n. 79). As such, procedural equity in any cooperative agreement or mechanism is critical to securing the participation of Southern nations perceiving themselves as being at a structural disadvantage when it comes to negotiating for and securing their own benefits.

#### *On the Facilitation of Social Trust*

Social trust, or a lack thereof, has also played a significant role in inhibiting North-South cooperation in climate change mitigation. As early as 1972, at the United Nations Conference on Environment and Development in Stockholm, Southern nations expressed distrust of agreements aimed at North-South environmental ‘cooperation,’ believing them to be attempts to “ratify and even enhance existing unequal economic relations and technical dependence” thus “mirroring [Southern nations] in poverty forever” (Najam, 1994, p. 437). Such concerns were only reinforced at the 1992 Rio Earth Summit, wherein Northern nations agreed to a financial package of 100 billion US dollars (USD) a year in new and additional concessionary funds for ‘sustainable development’ and 15 billion USD a year for

‘global environmental issues’ and then failed to honour their commitments<sup>10</sup> (Najam, 2002, quoted in Parks & Roberts, 2008). As Esteva and Prakesh (1996) explain, many from the global South flew to Rio only to see their “valuable initiatives transmogrified” into nothing more than a “footnote to the global agreements conceived and now being implemented by the big and the powerful” (p. 282). Thus, the history of environment cooperation has given Southern nations ample reason to question trustworthiness of so-called ‘win-win’ cooperative international environmental agreements. It seems then that the principle fear of Southern nations is that the North is “using environmental issues as an excuse to pull up the development ladder behind it” (Najam, 1994, p. 249), leading to significant suspicion that “the economic rise of the South is not acceptable to the North because that will end their global dominance” and that climate change discussions are simply another “instrument for slowing down the rise of the South” (Agarwala, 2008, p. 3). While the existence of this pervasive social distrust amongst Southern nations does not preclude cooperation, it does mean that Southern nations are likely to have heightened cognizance of, and sensitivity to, any form of cooperation which could be perceived as preserving the status quo of underdevelopment of the South and overconsumption by the North. Thus, as the Indian Government recently asserted, efforts to mitigate climate change “must not sharpen the differences between the affluent North and an impoverished South, and justify this with a green label” (Government of India, 2009, pp. 11-12). Because these failed reassurance strategies of the past and subsequent

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<sup>10</sup> By the end of the 1990s, approximately 3 billion USD was being allocated for global environmental issues (20% of the Rio promise) and only seven billion USD was being given for local environmental, or ‘sustainable development’, projects (7% of the Rio promise) (Hicks, Parks, Roberts & Tierney, 2008).

mistrust of Northern motives can act as impediments to Southern nation participation in global climate change efforts, any mechanism intent on facilitating Southern participation must first assuage Southern nations' fears that their developmental endeavours would be jeopardized through their involvement.

### **Summary of Main Issues Affecting North-South Cooperation**

There are two major conclusions to be drawn from the above sections. First, that the North-South divide is characterized by a number of pervasive tensions rooted in the fundamental prioritization of economic concerns by the North and developmental needs by the South and, second, that the perceptions of a given mechanism's procedural equity and its ability to facilitate social trust are important factors affecting Southern nations' decisions to participate. Having established these general factors affecting North-South cooperation in climate change mitigation, it is now possible to examine the CDM's role as the 'grand compromise' of the North-South divide and to evaluate its efficacy in this regard.

### CHAPTER THREE: THE GRAND COMPROMISE OF THE CDM

In the preceding chapter I outlined the major impediments to cooperation in climate change, which together comprise the North-South divide, as being related to a number of issues of equity, compensation, structural vulnerabilities and social distrust.

Having done so, it is now possible to place the CDM in to the context of this divide. I first re-visit the Kyoto negotiations (where, arguably, the North-South divide culminated for the first time) and suggest that the negotiations were essentially stymied over the issue of lacking Southern participation. I then describe, in detail, how the CDM emerged as the compromise to the North-South divide over Southern participation in climate change mitigation, looking specifically at how the market mechanism was posited as a means to reconcile the aforementioned tensions between Northern nations' economic concerns and Southern nations' developmental ones. Finally, I suggest that, despite the acceptance of the CDM during Kyoto and the existence of North-South cooperation in the CDM today, the North-South divide nevertheless permeates the mechanism, resulting in divergent demands and expectations based on different priorities and perceptions of what the CDM should offer. Acknowledging that the 'compromise' of the CDM does not mean that all parties' interests are subsumed by the mechanism's neatly packaged 'official' objectives, I again draw upon the three evaluative criteria laid out in Chapter 1 to analyze the CDM's progress in mitigating the various issues of the North-South divide, providing for procedural equity and facilitating social trust.

## The Kyoto Protocol and the Predecessors to the CDM

### *The Kyoto Protocol Impasse*

The Kyoto Protocol was premised on a commitment to reduce emissions to, “safe and appropriate levels” by requiring that Northern nations reduce their emissions to an average of 5% below their 1990 levels by the end of the first commitment period in 2012 (UNFCCC, 1998). The targets assigned to specific nations varied from required reductions of 8% below 1990 levels for the EU<sup>11</sup> to an allowance of a 10% increase over 1990 levels for Iceland. Despite providing specific emission targets for 38 nations, the Kyoto Protocol still only accounted for approximately 19% of global carbon emissions (Barrett & Stavins, 2003, p. 352) due to its exemption of Southern nations from emission reduction targets. The Kyoto Protocol was therefore resisted by key Northern nations; as the United States argued at the time, the Protocol was flawed in that it “exempt[ed] 80% of the world [...] and would cause serious harm to the U.S. economy” (quoted in Jotzo, 2005, p. 82). Australia similarly stated that “Kyoto will deliver at best 1% of abatement, fails to cover 75% of greenhouse gas emissions and does not involve developing countries,” also indicating a refusal to sacrifice Australian jobs and investment for, “the sake of looking green rather than delivering real results” (Ibid). Viewing emissions caps as impediments to the economic growth and development believed necessary to remove themselves from poverty, Southern nations refused even to consider emission reduction commitments, stating that for reasons of historical responsibility and current ability-to-pay, any and all mitigation

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<sup>11</sup> The European Union has taken on an emission target as a whole, with individual responsibilities to be divided up between the members of the European Union.

efforts should be either undertaken or funded by the global North. Thus, the North-South divide addressed at length above culminated during the Kyoto Protocol, making it clear that if any global agreement were to be reached, it would have to entail an institutional compromise capable of effectively bridging the divide between Northern and Southern interests.

### *The 'Brazilian Proposal' and Joint Implementation*

Before the delegates at the Kyoto Protocol negotiations settled on the CDM, there were two other attempts made to bridge the North-South divide. The first such proposal was that of a Joint Implementation (JI) mechanism. The original flexibility mechanism meant to lower the compliance costs for Northern nations under Kyoto, JI was based on the concept that the transfer of clean technology to other nations to reduce GHG could be counted towards the obligations of the nation supplying the technology. While this would allow Northern nations to take advantage of cost-effective options in other nations, Southern nations were strongly opposed to the JI, believing it to be 'neocolonial' in that it let Northern nations 'off the hook' by allowing them to buy their way into compliance or by giving them means through which to force weaker nations to meet their obligations for them (Silayan, 2005; Sari & Meyers, 1999; Lecocq & Ambrosi, 2007). As the Brazilian government argued at the time, flexibility mechanisms such as JI represented an attempt by Northern nations to establish a "regime of credits" through which they would "compensate, by financing projects in other countries, the non-fulfillment of the targets freely assumed by them and which should be accomplished in their own territories with regard to the reduction of greenhouse gas emissions" (quoted in Gupta, 1998, p. 184). JI was

therefore seen as a “political dead-end” amongst Southern nations<sup>12</sup> (Sari & Meyers, 1999, p. 11) and, in the end, was incorporated into the Kyoto Protocol only as a mechanism for use amongst Northern nations.

A second option for involving Southern nations in emissions abatement was the Clean Development Fund (CDF), dubbed the ‘Brazilian Proposal’ after the Brazilian delegation that proposed it. This fund was designed to provide for the financing of emission mitigation projects in Southern nations through the allocation of punitive funds, calibrated at approximately \$10/tonne CO<sub>2</sub>, collected from Northern nations failing to meet their Kyoto requirements (FCCC/AGBM/1997/MISC.1/Add.3). Because the CDF was designed to contribute to emissions reductions in Southern nations while simultaneously pressuring Northern nations to meet their obligations it was supported by the G-77 and China as “consistent with their overall negotiating stance” (Repetto, 2001, p. 306). However, Northern nations vehemently opposed this punitive governance structure,<sup>13</sup> believing it to be “politically toxic” (Wara & Victor, 2008, p. 18) due to its potential costs. Northern nations therefore sought to create a more ‘positive’ cooperative mechanism which still allowed Northern nations to compensate for their exceeded Kyoto Protocol commitments by implementing projects elsewhere, but, unlike the JI, with an emphasis on promoting sustainable development in the global South (Lecocq & Ambrosi, 2007). Thus, the CDM

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<sup>12</sup> One should note that not all developing nations opposed JI; Costa Rica, along with several other Latin American nations, endorsed it (Sari & Meyers, 1999, p. 6).

<sup>13</sup> The United States agreed that there should be binding consequences for non-compliance, but that these should come in the form of “additional obligations in subsequent commitment periods (as opposed to financial penalties) (Fletcher, 2005, p. 8).

emerged as a “politically acceptable” compromise between Northern and Southern interests (Olsen & Painuly, 2002, p. 238).

### **The Grand Compromise of the CDM**

Codified in Article 12 of the Kyoto Protocol, the CDM is one of the three<sup>14</sup> ‘flexibility mechanisms’ designed to assist Northern nations in meeting their emission reduction commitments. While the two other flexibility mechanisms – the aforementioned JI and Emissions Trading (ET) – both allow for geographic flexibility with respect to where emission reductions took place, only the CDM connects the massive GHG emissions of Southern nations with global efforts to fight climate change in a cost-effective manner.<sup>15</sup> The dual purpose of the CDM is defined as follows:

- to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and
- to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3 (UNFCCC, 1997)

The CDM achieves these goals through the use of a market mechanism which allows

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<sup>14</sup> While an overwhelming majority of the literature refers to the Kyoto Protocol as having *three* flexibility mechanisms, one should note that by some accounts a fourth mechanism exists – the so-called “Bubble Mechanism” (Article 4) which allows groups of nations forming a ‘bubble’ to redistribute emissions targets amongst themselves while keeping the total required reductions to remain the same (for a description of this mechanism, see Michaelowa, 2003).

<sup>15</sup> JI allow nations with binding commitments under the Kyoto Protocol to “transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases in any sector of the economy...to achieve cost-efficiency” (UNFCCC, 1992a, Article 6). ET allows nations within binding commitments to “participate in emissions trading for the purpose of meeting their commitments” under the Kyoto Protocol (Ibid, Article 17). Therefore, while both allow for geographic flexibility and subsequent cost-efficiency, neither involves Southern nations in mitigation efforts.

Annex I<sup>16</sup> (Northern/investor) nations to implement emission reduction projects in non-Annex I (Southern/host) nations where outdated technology, less-embedded infrastructure and production of certain industrial gases banned in developed nations present opportunities to achieve emission reductions at a fraction of the cost of undertaking domestic reductions. These reductions are quantified in the form of Certified Emissions Reduction credits (CERs) (with one CER being equal to one tonne of carbon dioxide equivalent (CO<sub>2</sub>-e) gases<sup>17</sup>) which can then be used either by investor nations as credit toward their Kyoto commitments, or by private entities/corporations for monetary gain.<sup>18</sup> The logic behind this mechanism is that while the cost of reducing emissions varies from place to place, the positive effect on the atmosphere is the same regardless of where the reductions occur. Thus, the assumptions of the CDM are the same as those for international trade more generally, being that trade allows for specialization, giving some nations a comparative advantage in the production and sale of some commodities (Liverman & Boyd, 2008,

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<sup>16</sup> The Annex I Parties to the UNFCCC are Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Czech Republic, Denmark, Estonia, European Community, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, and the United States of America (UNFCCC, 1992a). All other nations that are signatories to the UNFCCC but not included in Annex I, are referred to as 'non-Annex I.'

<sup>17</sup> CO<sub>2</sub>-e is defined by the IPCC as "the amount of CO<sub>2</sub> emission that would cause the same time-integrated radiative forcing, over a given time horizon, as an emitted amount of a long-lived GHG or a mixture of GHGs" (IPCC, 2007, p. 14). The CO<sub>2</sub>-e is obtained by multiplying the emission of a GHG by its Global Warming Potential (GWP) for the given time horizon.

<sup>18</sup> It is important to note that there are many different actors involved in the implementation of CDM projects besides national governments (including private entities, corporations and developing nation parties acting unilaterally) as well as many different manners in which investors can become involved with the CDM (including financing all or part of the project activity; financially contributing towards the incremental cost of the project beyond the baseline technology; providing a loan or lease financing at concessional prices; or, by agreeing to buy CER's as they are produced) (Sirohi, 2007). In fact, a large percentage of CDM investment has been based on private party transactions (see Chapter Four). However, as it would be inappropriate and cumbersome to attempt to reflect the complexity of relationships that exist under the CDM for the purposes at hand, I will refer generically to all forms of and sources of CDM investment (unless the topic requires further specification).

p. 50); in this case, Southern nations have a ‘comparative advantage’ in the production (or provision) of cost-effective emissions abatement options. The effect of transferable emissions trading on the cost-effectiveness of abatement has been well-documented.<sup>19</sup>

However, what sets the CDM apart from other forms of emission or offset trading is that, under the CDM, host (Southern) nations are to benefit from various project-related ‘sustainable development benefits,’ in exchange for their participation. While the CDM is therefore a very similar in concept to JI,<sup>20</sup> the very name ‘Clean Development Mechanism’ makes the concept “more palatable to skeptics because of the emphasis on sustainable development in its implementation” (Silayan, 2005, p. 9), suggesting that the CDM was only accepted by Southern nations because of its purported ability to contribute to the sustainable development of host nations. Thus, due to its alleged ability to reconcile Northern nations’ emphasis on cost-minimization and Southern participation with the development needs of the South, the CDM was praised as the “key that unlocks the barrier” to global cooperation in emissions abatement under the Kyoto Protocol (Repetto, 2001, p. 303).

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<sup>19</sup> Parson and Fisher-Vanden (1999) for example, estimate that the use of flexibility mechanisms can save 20 to 50 percent of global abatement cost, relative to simple equal-abatement formulas (p. 207, quoted in Rowlands, 2001, p. 803). The European Union (EU) has estimated that their Emissions Trading System, which involves JI and CDM use, and provides for linkages with emissions trading schemes in developing nations, will allow the EU to meet its Kyoto target at a cost of between €2.9 and €3.7 billion a year (less than 0.1% of the EU’s GDP). Without the use of emissions trading, compliance costs might be as high as €6.8 billion a year (European Commission, 2005, p. 6). As a result of the CDM’s unique ability to tap into the vast supplies of cost-efficient emissions reduction options in developing nations, it has experienced significant growth since its inception and has played a large role in facilitating these low-cost reductions (see also Rowland, 2001; Zhang, 2001).

<sup>20</sup> The primary difference between JI and the CDM is where the project is based. With JI, projects are implemented by Annex I (Northern) nations in other Annex I nations and produce ‘Emission Reduction Units’ while the CDM entails projects implemented by Annex I nations in non-Annex I nations which generate CERs. A final difference is that CDM project activities are meant to explicitly contribute to sustainable development in host nations; there is no such requirement for JI.

## **Defining ‘Efficiency’ in the Context of the CDM**

Since its inception, the CDM has grown impressively; in 2007 the CDM market was valued at approximately 18 billion USD, more than triple the previous year’s figure (Wara & Victor, 2008, p. 9). Further, the approximately 3000 CDM projects either registered or in the process of registration as of October 2009 are expected to deliver approximately 2.8 billion tonnes CO<sub>2</sub>-e reductions (UNEP-Risø Centre, 2009). While concerns have been expressed about both the quality and quantity of the CERs produced by the CDM,<sup>21</sup> the mechanism is nevertheless expected to generate ten times more volume (in offsets produced and financial value) than JI during the first Kyoto compliance period<sup>22</sup>, making it officially the ‘world’s largest offset market’ (Wara & Victor, 2008). As I suggested in Chapter 1, most scholars have taken these successes as an indication that the CDM is effectively bridging the North-South divide, meaning that only the isolated environmental and economic facets of the mechanism remain to be analyzed. However, it is important to recall here that a cooperative mechanism must be analyzed not simply against its ability to facilitate participation or to achieve its explicit objectives, but against a wider range of qualitative factors including the extent to which it has mitigated underlying problems it was designed to address, and whether or not it is perceived as being procedurally equitable and facilitative of social trust.

The preceding sections have demonstrated how the CDM was intended to be the grand compromise between the varying interests of the North-South divide which was

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<sup>21</sup> See discussion in Chapter 1.

<sup>22</sup> The first Kyoto compliance period runs from 2008 to 2012.

impeding cooperation on global climate change. However, compromise does not entail commonality. In seeking to understand the contribution of the CDM towards mitigating the North-South divide and facilitating future cooperation in climate change mitigation, it is important to recognize that the 'divide' did not cease to exist with the conclusion of the CDM. As Axelrod and Keohane (1985) point out, cooperation does not entail harmony as "harmony requires complete identity of interests" whereas cooperation takes place in "situations that contain a mixture of conflicting and complementary interests" (p. 226). Thus, the agreement on and participation in the CDM by Northern and Southern nations alike does not mean that their interests are aligned. On the contrary, the fundamental priorities of the North and South with respect to the climate change mitigation permeate the CDM, informing the differing interpretations and expectations which each side has of the mechanism. Thus, as Prum (2007) explains, despite the valiant efforts towards North-South cooperation under Kyoto demonstrated by the creation of the CDM, the traditional North-South divide has nevertheless "presented itself as an inseparable shadow of the past" (p. 241). Therefore, understanding the ways in which this is so is critical to understanding the CDM's efficacy in bridging the North-South divide and its impact on the likelihood of continued Southern participation in climate change mitigation efforts.

### **The Perpetuation of the North-South Divide Under the CDM**

At this juncture it is helpful to recall the main priorities and demands characterizing each side of the North-South divide. The North, simply put, is concerned first and foremost with low-cost emission reductions and the maintenance of their global

economic competitiveness through the meaningful inclusion of Southern nations in international emissions abatement efforts. The South, on the other hand, calls for their fundamental right to development to be respected and enhanced in the process of climate change mitigation efforts. This requires not only significant transfers of mitigation, adaptation and developmental assistance on a compensatory and predictable basis, but also increased Northern leadership in emissions reductions to rectify extant inequalities in per capita emissions to make room for Southern nations' growth and development. Further, in light of historical reasons for distrust and perceived structural vulnerabilities, Southern nations have demonstrated a sensitivity to issues of procedural inequity which may prevent their needs from being determined or subsumed by those of the North. These priorities and their manifestations in the CDM will each be addressed in turn.

### *The Fundamental Right to Development*

Southern nations' first requirement of any cooperative climate change mechanism is that it not only acknowledges, but substantively contributes to, their national growth and development goals. Recall here the above suggestion that the CDM was only accepted by Southern nations on the assumption that they would benefit from the transfer of various project-related sustainable development benefits. However, what constitutes a 'benefit' to 'sustainable development' under the CDM was left undefined,<sup>23</sup> thus creating a definitional vagueness in which conflicts of interest were

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<sup>23</sup> By 'undefined,' I mean that there is no official definition or requirements to which CDM projects must adhere. However, there is a requirement that the 'sustainable development' benefits of a CDM project must be in accordance with the priorities of the host nation. I discuss the reasons for this in more depth in subsequent sections.

bound to arise. The expectation of Southern nations that a cooperative climate change mechanism should actively contribute, on a compensatory basis, to their national development has led Southern nations to place much more emphasis on the developmental aspects of ‘sustainable development’ than their Northern counterparts, who tend to focus more on narrow GHG-related definitions of (environmental) sustainability when assessing CDM project benefits.

An examination of the guidelines for the implementation of CDM projects applied by various Southern nations’ Designated National Authorities (DNAs) – the bodies responsible for project approval in host nations – demonstrates this point. For example, the DNAs of nations as diverse as Malaysia, Ghana and Bangladesh all state that projects must bring direct and indirect sustainable development benefits – including social, economic and environmental to the host nation (Ministry of Natural Resources and Environment, 2009; Environmental Protection Agency, 2009; Ministry of Environment and Forests, 2009; CDM Bangladesh, 2009). South Africa’s DNA explains that South African CDM projects are judged against economic, social and environmental ‘considerations,’ although only this latter category is very well defined in this case (Department of Minerals and Energy, 2009). India’s DNA goes on at some length about the expected or desired ‘sustainable development benefits of the CDM, including the promotion of social well-being (including alleviation of poverty, removal of social disparities, provision of basic amenities), economic well-being (conceived of as ‘additional investment consistent with the needs of the people); environmental well-being (resource sustainability as well as positive impacts on human health and reduction of non-GHG pollution levels) and technological well-

being (with an emphasis on upgrading India's 'technological base') (Ministry of Environment and Forests, 2009). Therefore, the 'sustainable development benefits' expected by Southern nations could be referred to broadly, by what Cosbey, Murphy and Drexhage (2007) refer to as the "development dividend" defined as, "benefits to developing countries beyond those strictly related to climate change, in the area of economic growth through investment; technological evolution; poverty alleviation; environmental and health improvements" (p. 30). This means that, to Southern nations, 'sustainable development' does not simply entail the direct mitigation of GHGs or the transfer of technology capable of continuously reducing GHGs, but rather it encompasses a whole range economic, social, technological, and environmental benefits. Northern nations, on the contrary, tend to emphasize the 'sustainable' aspect of 'sustainable development,' thus leading them to conceive of the intended benefits of the CDM is a much different light.

Several analyses have confirmed the existence of these differing expectations of the CDM. For example, Kim's (2003) study concludes that investor nations view the sustainable development aspects of the CDM to be primarily related to the environment and sustainability, whereas local stakeholders emphasized more short-term concerns of poverty and income-generation.<sup>24</sup> There are also many indications in the literature on the CDM which suggest that the perspective of Northern parties to the CDM is that the benefits host nations are to derive from participation in the mechanism are primarily related to environmental sustainability. For example, Pearson (2007) describes the sustainable development goal of the CDM as

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<sup>24</sup> See also, Brown & Corbera (2003); Cosbey et al. (2005).

“promoting renewables in developing countries and thus assisting in the transition way from fossil fuels” (p. 247), while Doelle (2007) refers to the CDM’s provision of “much-needed development assistance in the form of technology transfer and economic activity that can help to place ...[Southern nations] on a low-emissions development path” (p. 182). While the provision of ancillary benefits above and beyond the reduction of GHG emissions are therefore not within the official mandate of the CDM and, in most cases, not assumed to be necessary by Northern parties, the Southern nations’ DNA guidelines examined above suggest that such benefits are nevertheless expected by Southern nations. This suggests that the different priorities of the North and South (the latter being concerned with environmental sustainability and the latter with development) inform their perceptions of what, specifically, the ‘compromise’ of the CDM should provide.

#### *Compensation for Historical Debt*

The transfer of benefits – be they financial or otherwise – to Southern nations as part of a global climate agreement is not, however, to be done on an ad-hoc, voluntary, or contingent basis. The North-South divide examined in Chapter 2 suggested a vehement assertion by Southern nations that North has a moral obligation to compensate, in a predictable and sufficient manner, Southern nations for their historical overuse of the planet’s atmospheric resources. These compensatory demands manifest themselves in the CDM in two distinct ways. First, this compensatory demand has led Southern nations to assert that any funding or benefits of a cooperative climate change agreement should be distributed based on the needs of the South, not the interests of the North. As India has argued; “the provision of

financial resources to developing countries, as envisaged under the UNFCCC, should follow the priorities of recipient countries and not those of the source countries” (Government of India, 2009, p. 9). Such sentiments might easily be interpreted as support for the notion that those nations most in need of financing and other development contributions should receive equal, if not more, access to CDM benefits. It is important to recall here that the CDF proposed by Brazil was conceptualized as a fund that would be open to all nations; therefore, when the “subtle shift” from CDF to the market-based CDM occurred, many developing nations understood this to mean that such a mechanism would also be beneficial, not to a few but to all developing nations (Silayan, 2005, p. 10). These concerns for an equitable distribution of project benefits as rightful compensation for those nations most affected by climate change were expressed most notably at the 12<sup>th</sup> Conference of the Parties to the UNFCCC in Nairobi in 2006, wherein Southern nations called for language to be inserted into the UNFCCC treaty to encourage “Annex I countries to engage in further initiatives, including financial support, for CDM projects in Least Developed Countries (LDCs), Africa and Small Island Developing States (SIDS), with a view to improving regional distribution” (IISD, 2006, p. 12). More recently, some Southern nations, including Argentina (FCCC/KP/CMP/2008/MISC.3), South Africa (Ibid), Sri Lanka (FCCC/SBI/2008/MISC.2/Add.1) and Saudi Arabia (FCCC/KP/AWG/2009/MISC.9), have championed the use of ‘geographical quotas’<sup>25</sup> which, as Rowlands (2001) notes, “have the potential to do more for poverty alleviation than any other proposal associated with the CDM” due to their ability to channel CDM benefits to those

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<sup>25</sup> Geographical quotas refers, generally, to restrictions being put on the number of CDM projects which a certain region or nation can host, in order to encourage investment in less-popular areas.

nations with the most need of said benefits (p. 806). Moreover, Haites and Yamin (2000) argue that without such quotas the CDM might become so “unattractive” that some nations will lose interest in establishing it, or may even become “hostile” to its establishment (p. 33).<sup>26</sup>

While Northern opposition to geographical quotas has not been entirely unanimous,<sup>27</sup> most Northern nations have been united in asserting that distributional issues, while important, should not impede the market mechanism’s ability to provide low-cost reduction options. For example, Australia also opposes the notion of mandating where project activities should occur, as doing so would “impede the efficiency of the market and raise the cost of abatement to the global economy” (FCCC/KP/AWG/2008/MISC.7/Add.1, p. 7). New Zealand also notes that there should be “no measures to explicitly direct in which countries or regional CDM projects take place, nor steps that would interfere in the efficient functioning of the carbon market” (FCCC/KP/AWG/2008/MISC.7, p. 17), as doing so would be ‘at

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<sup>26</sup> While it may seem counter-intuitive that nations such as India and China, which are the main beneficiaries of CDM project investment as a result of such market biases, would lend their support towards proposals for more equitable distribution of project benefits, I suggest two reasons why this nevertheless seems to be the case. First, it has been shown that, despite internal divisions amongst the G-77 and China, they tend to benefit from forming a united negotiating bloc in the context of climate change discussion and are likely to continue to do so in the future (see Kasa, Gullberg, & Heggelund, 2008; Gupta, 1999). As such, lead Southern nations such as India and China may be supporting more equitable distribution of project benefits to avoid isolating their smaller counterparts, thereby minimizing internal incoherence which might affect their negotiating strength. A second option, which is not incompatible with the first, is that these nations acknowledge that they possess a near-monopoly in the provision of high-yielding industrial gas-type projects, meaning that they are fairly certain to continue to attract large amounts of CDM investment in the future. This means that they do not view demands for increases in project activities in marginalized nations as a zero-sum game, as any increases in project activities in marginalized African or LDC nations are unlikely to be in sectors requiring high levels of industrialization, meaning that increases in project activities in these smaller nations will not come at the cost of decreases of activities in larger nations, in most cases.

<sup>27</sup> The EU, for example, has on several separate occasions indicated support for giving preferential access to smaller and lesser developed countries, albeit without explicitly mentioning quotas (FCCC/KP/AWG/2008/MISC.7, p. 3).

odds' with Article 3.3 of the UNFCCC which states that "policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost" (Ibid). Instead, Northern nations suggest that efforts to enhance equitable regional distribution of CDM projects should be focused on facilitating the uptake of projects in host countries through "practical improvements," such as capacity building (Ibid, p. 20). Therefore, there are continued tensions between Southern emphasis on compensation for historical debt and equitable distribution of CDM project activities and Northern priorities of cost-efficiency and unfettered markets, even with the CDM in place.

The second way in which compensatory demands manifest themselves in the CDM is in the expectation by Southern nations that their participation in the CDM as project hosts will be rewarded with predictable and sufficient ancillary development benefits. This may seem a mute point, as all CDM project activity is, in theory, required to contribute towards the 'sustainable development' of the host nation. However, the aforementioned vagueness surrounding the notion of sustainable development, when combined with a number of other procedural issues and market biases issues discussed below, precludes the desired predictability and sufficiency in many cases. As such, Southern nations have supported the introduction of explicit 'co-benefit' criteria (to ensure benefits above and beyond the reduction of GHGs) as a requirement for CDM project approval as well as project-type quotas to increase investment in those project-types offering the most sustainable development benefits. Argentina has quite notably supported such quotas on the basis that they will help to establish "common ground in the consideration of sustainable development criteria"

as well as “avoid market biases” towards any one project type or benefit (FCCC/KP/AWG/2009/MISC.8, p. 4). Costa Rica also notes the need to mitigate ‘market biases’ that may affect the predictable transfer of sustainable development benefits (FCCC/KP/CMP/2008/MISC.2, p. 5) while South Africa supports giving “higher priority to small scale poverty reduction mitigation programmes or projects,” or any project type which have “high local sustainable development benefits” (Ibid, p. 21).

Predictably, Northern nations oppose such measures. For example, New Zealand “recognizes the importance of co-benefits” but has “reservations” about including co-benefits as criteria for the registration of projects or proposals to “favour certain project activity types or technologies over others” as such actions would “add to the administrative complexity of the CDM and significantly detract from its cost effectiveness” (FCCC/KP/AWG/2008/MISC.7, p. 17-18). The so-called ‘Umbrella Group,’ consisting of a group of non-EU developed nations,<sup>28</sup> has similarly argued that no particular kind of project activity should be ‘privileged’ so as to increase the chances of its uptake (Rowlands, 2001, p. 804). Thus, it is “preferable,” as Australia explains, to “allow the market to determine what types of project activity to pursue” as this is the manner in which the least-cost abatement can be assured (FCCC/KP/AWG/2008/MISC.7/Add.1, p. 7). This reinforces the notion that, to many Northern nations, the transfer of sustainable development benefits under the CDM is considered nice, but not necessary, while Southern nations, expecting compensation

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<sup>28</sup> The Umbrella Group is described by the UNFCCC as “a loose coalition of non-EU developed countries which formed following the adoption of the Kyoto Protocol” Although there is no formal list, the Group is usually made up of Australia, Canada, Iceland, Japan, New Zealand, Norway, the Russian Federation, Ukraine and the US (UNFCCC, 1992b, p. 29).

for their participation in climate change mitigation, put great emphasis on the mechanism's ability to provide for their developmental needs.

### *Global Allocation of Emissions and Wealth*

The fundamental opposition of Southern nations to the vast inequalities in per capita emissions and global wealth is represented in the CDM by the priority that Southern nations put on the issue of 'supplementarity.' Supplementarity refers to the notion that the use of offset mechanisms, including the CDM, should supplement, not replace, domestic mitigation action, meaning that domestic action should "constitute a significant element of the effort made by each Party included in Annex I to meet its quantified emission limitation and reduction commitments" under the Kyoto Protocol (FCCC/CP/2001/13/Add.2, p. 3). While Northern nations have pushed for the unrestricted use of market offset mechanisms in order to minimize compliance costs,<sup>29</sup> Southern nations have suggested limiting the share of a Northern nation's obligations that can be accomplished through the use of offsets, despite the purported potential for Southern nations to gain from sustainable development benefits under the CDM. Even nations such as Indonesia which see an expanded role for the use of offset markets in the future maintain that Northern nations' emissions abatement "should be undertaken mostly by domestic actions" (FCCC/AWGLCA/2009/MISC.4(I), p. 119). In light of the association of emissions with economic development and the call for Northern nations to acknowledge the 'luxury and waste' associated with their production and consumption patterns, to

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<sup>29</sup> The EU is a notable exception to this generalization, as they have demonstrated much more support in the past for restrictions on use of flexibility mechanisms (Kolshus et al., 2001, p. 2).

rectify their unsustainable lifestyles and to reduce their emissions to make 'environmental space' for the South to grow into, the roots of the Southern position on supplementarity are clear.

However, meeting Southern demands for convergence on these issues of global inequality requires more than Northern reductions. It also requires the transfer of sustainable development benefits to Southern nations to increase their levels of wealth and development to ensure that Northern nations do not simply use CDM to avoid having to change domestic patterns of unmitigated production and consumption without contributing substantively to the development of host nations. Unless significant development benefits above and beyond those related to the mitigation of GHGs are transferred to Southern hosts, the CDM may be seen as effectively deepening the gap in relative global wealth and emission levels, in contravention of the aforementioned demands and expectations of Southern nations.

### **Issues of Procedural Equity and Social Trust in the CDM**

#### *Procedural Equity*

In Chapter 2, I suggested that Southern nations perceive themselves to be structurally vulnerable in the context of international environmental relations and, as such, put significant emphasis on issues of procedural equity and forms of governance that are able to recognize and represent the specific needs of Southern nations. In the context of the CDM, there are two specific 'procedures' which are meant to accomplish this. The first of these relates to the definition of 'sustainable development,' which I previously mentioned was intentionally left undefined under the CDM. This was done

because Southern nations viewed an international definition of sustainable development as an infringement upon their sovereignty and were therefore extremely careful to “safeguard their sovereign right to define what constitutes sustainable development in the national context” (Cosbey et al., 2007, p. 2). Even in the context of support for the introduction of ‘co-benefit’ criteria into the CDM project approval process (addressed in the previous section), Southern nations maintain that these criteria would still need to be defined by the host nations themselves (FCCC/KP/AWG/2009/MISC.8, p. 3). Therefore, out of respect for this Southern demand, as well as for reasons of administrative practicality, it was decided that it would be “the host Party’s prerogative to confirm whether a clean development mechanism project activity assists it in achieving sustainable development” (FCCC/CP/2001/13/Add.2). This is done as part of the regular CDM project approval process, wherein both the investor and host parties must get approval letters from their DNAs stating that the project does, in fact, contribute to the sustainable development of the host (Lecocq & Ambrosi, 2007, p.137). This procedure, in theory, allows host nations to define, negotiate for, and ensure that they benefit developmentally through their participation in the CDM; as such, it could be interpreted as a significant step towards mitigating some of the structural concerns which characterized past efforts at international environmental cooperation.

Procedural equity, transparency and public participation are also important at the local level to ‘link local issues to global’ and to ensure that domestic populations support their nation’s participation in an international cooperative mechanism. The second procedural issue of relevance in the CDM is therefore that of ‘stakeholder

consultations.’ Before a CDM project activity can be approved, it must first be confirmed that comments by local stakeholders, officially defined as “the public, including individuals, groups or communities affected, or likely to be affected, by the proposed clean development mechanism project activity,” have been solicited and that a summary of the comments received and how due account was given to them has been received by the host nation (FCCC/KP/CMP/2005/8/Add.1). Because incorporating local benefits into CDM projects is often problematic as the projects are developed by foreign consultants who lack understanding of local issues (Cosbey et al., 2005), local stakeholder consultations are an important tool to allow project developers to anticipate any possible complications (be they environmental, economic or social) with a project and to ensure that any benefits provided are appropriate ones which are valued and accepted by the local populations. Therefore, at both the international and local level, procedural equity in the CDM would entail Southern nations being able to negotiate for and to secure their desired benefits.

### *Social Trust*

The final issue affecting Southern participation in a climate change regime is that of social trust. In the context of the CDM, ‘social trust’ entails two things; first, that Southern nations trust that Northern nations prefer cooperation and mutual gain to exploitation and unilateral gain, which would require that they make good on their commitments to respect, and actively contribute towards, the development of the South in exchange for their participation in emissions abatement efforts. Second, Southern nations must trust that the CDM, in its market mechanism form, is able to facilitate the meeting of these commitments. It is also important to realize in the

context of social trust that the CDM will be evaluated by Southern nations in the context of past cooperative efforts between North and South which, as I previously suggested, have done little to assuage the South's historical distrust of the North's intentions and reliability on issues of international environmental cooperation. The influence of past experiences on perceptions of current efforts at cooperation suggests that Southern nations are apt to scrutinize the market mechanism basis of the CDM even more carefully and to be even more sensitive to any inequalities it may result in light of the fact that it was primarily Northern nations who insisted upon its creation. It is therefore of the utmost importance that the CDM, which has been posited as evidence that Southern nations can benefit from participation in emission reduction through the use of win-win market mechanisms, makes a good showing, lest the experience of the CDM deter Southern nations from participation in any such arrangements in the future.

### **Conclusions**

The above sections have laid out, in some detail, the ways in which the North-South divide has permeated the CDM, leading to some markedly different interpretations and expectations of the regime between Northern and Southern nations. It is now possible to examine the empirical evidence surrounding the CDM insofar as it affects the fulfillment of these various expectations.

## CHAPTER 4: EXAMINING THE CDM

The preceding sections have demonstrated both what the North-South divide on climate change mitigation is and how it has impacted the perceptions and expectations of Northern and Southern nations with respect to the CDM. The purpose of this section will be to evaluate the CDM's progress thus far in meeting these varied expectations. In the following sections, I demonstrate how the market mechanism of the CDM channels investment towards high-yield, industrial project types which offer extremely inexpensive CERs but little ancillary benefits. I also show how the market demonstrates significant bias towards those host nations which are already relatively industrialized and able to attract a predominant amount of foreign direct investment (FDI). Further, I explore how the market mechanism creates trade-offs between Southern nations' need to attract CDM investment and their ability to enforce sustainable development requirements and to ensure quality stakeholder consultations. Finally, I make suggestions concerning the CDM's effectiveness in demonstrating that the divergent interests of the North and South can be reconciled under the auspices of a single 'win-win' market-based mechanism.

### **Project Type Distribution Patterns**

#### *Project Type Biases*

While a broad range of project-types are eligible for inclusion in the CDM, including projects involving biomass energy, hydro, solar, wind, tidal, agricultural, fuel switching, geothermal, and afforestation/reforestation, to date there has been a distinct concentration of CDM investment in low-cost, high-yield, projects involving

the capture or destruction of various industrial gases. The most notorious of such projects involve the capture of Hydrofluorocarbon-23 (HFC-23), a byproduct of the refrigerant HFC-22 which is banned in developed nations under the Montreal Protocol but still commonly used in developing nations like China, India, South Korea, Mexico and Brazil (Cosbey et al., 2005, p. 14).<sup>30</sup> HFC-23 projects generate CERs by treating HFC-23 waste with a thermal oxidization process, which captures fluorine gases (the ‘F’ in HFC) as salts to be stored in hazardous waste landfills instead of being vented into the atmosphere (Ibid). These HFC-23 destruction projects constituted 36% of CDM volumes transacted in 2004 and 58% of volumes transacted in 2005 (Capoor & Ambrosi, 2006, p. 31). The continuing prominence of these projects is shown in Figure 2 which demonstrates that, as of September 2009, the ‘energy industries’ category – which encompasses all industrial gas capture projects, including HFC-23 – constitutes 60% of all CDM project activity. Conversely, there are few solar energy or residential energy efficiency projects (which fall under the category of ‘energy demand’ in Figure 2). I discuss the causes for and implications of these biases below.

### *Explaining the Biases*

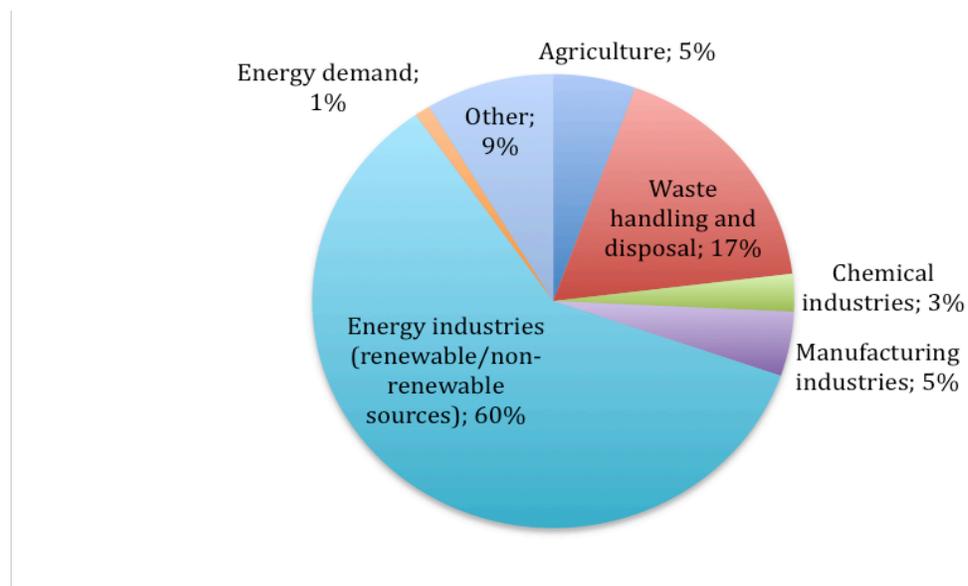
There are a number of factors that make large-scale HFC-23-type projects so attractive to investors. First, it is important to realize that not all gases eligible for CDM project activities have the same ‘global warming potential’ (GWP), which is

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<sup>30</sup> The Montreal Protocol on Substances that Deplete the Ozone Layer (a protocol to the Vienna Convention for the Protection of the Ozone Layer) is an international treaty signed in 1987 which provides for the phasing-out of Ozone-depleting substances, including HFCs. Under the Protocol, developing nations do not have to phase out HFC use until 2030 (see Rowlands, 1993, for a history and summary of the Protocol).

the global warming effect of a GHG over a time horizon of 100 years in mass relation to carbon dioxide (Nussbaumer, 2008). For example, CO<sub>2</sub> has a GWP of 1, while HFC-23 has a GWP of approximately 11,700, while methane has a GWP of 21 (see Table 1). Under the CDM, CERs are generated on a CO<sub>2</sub>-e basis, meaning that, quite simply, for every tonne of HFC-23 reduced, 11,700 CERs are generated (compared to one CER being generated for each tonne CO<sub>2</sub>).

*Figure 2: Distribution of registered CDM project activities by scope*



*(Data source: UNFCCC, 2009)*

*Table 1: Global Warming Potential (GWP) of various GHGs*

Gas Name	Global Warming Potential (GWP)
Carbon Dioxide (CO <sub>2</sub> )	1
Nitrous Oxide (N <sub>2</sub> O)	310
Methane (CH <sub>4</sub> )	21
Perfluorocarbon (PFC)	6,770
Hydroflourocarbon-23 (HFC-23)	11,700
Sulfur hexafluoride (SF <sub>6</sub> )	23, 900

*(Data Source: Wara, 2006; Cosbey et al., 2007)*

The net financial gain of a CDM project is derived from the difference between the project's CER value and the transaction costs associated with its implementation (Pacudan, 2005, p. 35). Therefore those projects requiring the least input (capital) for the most output (CERs) will be relatively more attractive to investors under the market mechanism. The massive GWP of the aforementioned industrial gases has a substantial impact on the costs of reductions for various project types, as shown in Table 2. When one considers the vast difference in costs associated with projects involving the capture, storage, or destruction of industrial gases versus hydro, solar, and geothermal technologies, the reasons for the preponderance of projects in the 'energy industries' category is clear.

*Table 2: Average CER price by project type*

<b>Project Type</b>	<b>Median Price Paid (USD*)</b>
Hydrofluorocarbons	0.74
Nitrous oxide	0.97
Fugitive emissions	0.97
Landfill power	2.10
Coal bed methane	2.67
Biogas power	2.76
Landfill gas flaring	3.59
Energy efficiency	3.70
Landfill gas composting	5.19
Agricultural biogas flaring	5.94
Biomass energy	8.46
Fossil fuel switch	12.76
Hydro (existing dam)	14.44
Hydro (run-off river)	15.88
Hydro (new dam)	18.98
Geothermal	27.86

*\* I have converted all figures from Euros (€) to United States Dollars (USD) for the sake of consistency using currency exchange rates accurate as of 29 October 2009 (1€ = 1.48 USD)*

*(Data source: Green, 2008)*

However, CDM project distribution is not just affected by transaction costs; as with any other form of investment, risk is a factor. Risk in the CDM market is particularly relevant as CERs are an intangible commodity, generated over many years, which creates significant investment uncertainty as the value of CERs will be dependent upon the commitments reached for a post-Kyoto regime (Boyd et al., 2007). Due to the uncertainty surrounding the future of the carbon market, investors will seek CDM projects which generate a large amount of CERs in a relatively short time so as to minimize their risks. The revenues from HFC-type projects are so substantial that they can pay off the initial investment within a year (Pearson, 2007); as such, they are particularly attractive to investors. Projects involving renewables, on the other hand, have high up-front costs and only reduce CO<sub>2</sub>, which has a global warming potential of one, and therefore are much higher-risk than larger HFC-type projects and much less likely to attract investment. Thus, the bias in CDM investment towards high-volume industrial gas destruction or capture projects which can pay back the initial investment quite quickly over longer-term projects such as renewable energy generation and energy efficiency projects makes good economic sense.

#### *Implications of Project Type Distribution Patterns*

While undoubtedly profitable for investors able to reap immense emission reduction credits with very little capital investment, the overwhelming focus on such projects leaves much to be desired for host nations seeking sustainable development benefits. For example, in their analysis of 744 CDM Project Design Documents (PDDs), Olsen and Fenhann (2008) concluded that the sustainable development benefits associated with HFC-23 reduction projects were the lowest of all project types. This is primarily

because, much like N<sub>2</sub>O and other industrial gas capture projects, HFC-23 projects involve an end-of-pipe technological fix with no apparent side benefits in terms of local quality of life, air quality, employment, or energy supply regime transformation (Cosbey et al., 2005, p. 26). Analyzing the first 16 registered CDM projects, Sutter and Parreño (2007) also found that the employment generation – one of the most commonly cited ‘sustainable development benefits’ of CDM projects – associated HFC-23 decomposition projects is negligible, while small-scale projects in biomass power generation show very high employment generation levels (p. 81). Similarly, in terms of improvement of local air quality, projects accounting for 96% of CERs (mostly HFC-23 or Methane elimination projects) were found to have ‘no considerable effect’ on major local air pollutants, while projects with a “considerable decrease in odor and/or moderate decrease in respiratory disease pollutants or carcinogens” (usually those involving fuel switches and energy efficiency) accounted for 3% of CERs. Only the remaining 1%, replacing electricity generated from diesel generators, were found to have ‘significant positive impacts’ on local air quality.

On the other end of the spectrum, projects involving solar or residential energy efficiency (falling under ‘energy demand’ in Figure 2) have been found to have the potential for large development benefits such as providing more distributed power to poor and rural populations, generating employment, and reducing non-GHG related environmental degradation (Cosbey et al., 2005). However, due to their relatively high costs, they have very little representation in the CDM project pipeline.

Therefore, there is a clear trade-off between the provision of sustainable development

benefits for Southern hosts and the achievement of low-cost emission reductions as a result of the CDM's market mechanism.<sup>31</sup>

## **Project Location Distribution Patterns**

### *Project Location Biases*

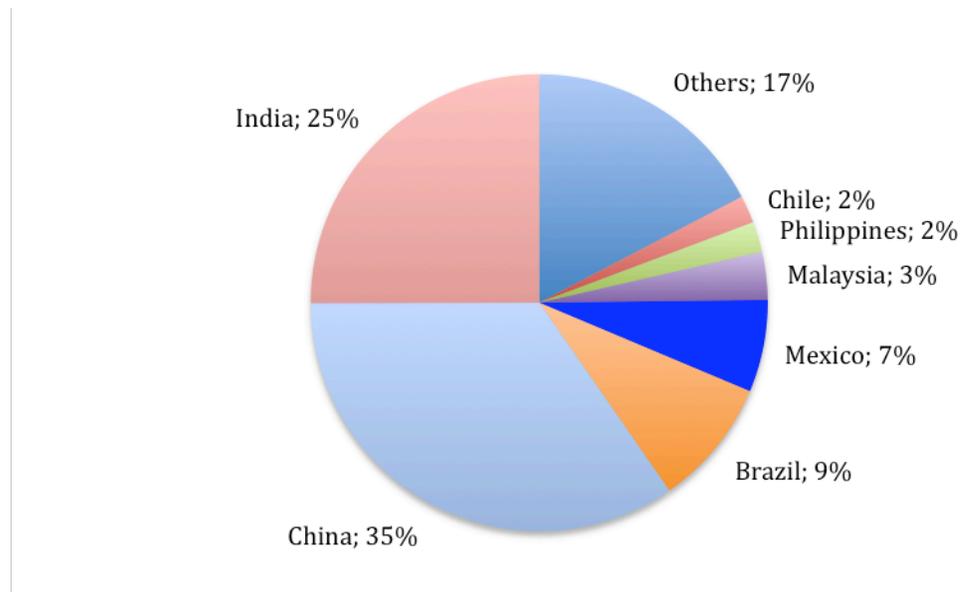
While the CDM is mandated to “promote equitable geographic distribution of clean development mechanism project activities at regional and subregional levels” (FCCC/CP/2001/13/Add.2, p. 3), an overwhelming majority of CDM investment has nevertheless gone to a select few host nations. In Figure 3, which shows the geographic distribution of registered CDM projects by the number of projects hosted (as of October 2009), it is evident that a predominant amount of CDM investment is accruing to China, India, Brazil and Mexico. These inequities are even more pronounced when one examines, not the number of projects hosted, but the amount of CERs the projects of each host party are expected to generate (Figure 4), as China alone commands a full 59% of all project activity which, when combined with the CERs expected by India and Brazil, accounts for nearly 80% of all CDM activity to date. On the opposite end of the spectrum, of the 49 nations LDCs, only seven host

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<sup>31</sup> While the defense can be made that the proliferation of these energy industry projects does not *adversely* affect host nation development (instead having a neutral direct impact on Southern hosts), high-yielding projects can subtract from the potential benefits of other projects as the supply of CERs changes the nature of the market, driving down prices and making other (more costly) investments such as those involving more sustainable development benefits unviable (Schwank, 2004; Cosbey et al., 2005; Sterk & Wittneben, 2006). The bias of CDM investment towards large-scale industrial projects is therefore of great concern to Southern nations because the high profitability of such endeavors threatens to deter investment in smaller ventures with more potential for local benefits.

CDM projects and only one of these nations hosts more than two projects.<sup>32</sup> In total, registered CDM projects hosted by LDCs represents only 0.7% of the total projects registered as of 2009 (UNFCCC, 2009, my own calculations). Finally, despite valiant efforts to build the capacity of African nations to host CDM projects,<sup>33</sup> as of 2009 there were only 34 CDM projects registered on the continent (representing less than 2% of total CDM activity) – 16 of which are in South Africa (a middle income nation) (Ibid).

*Figure 3: Registered CDM project activities by host party*

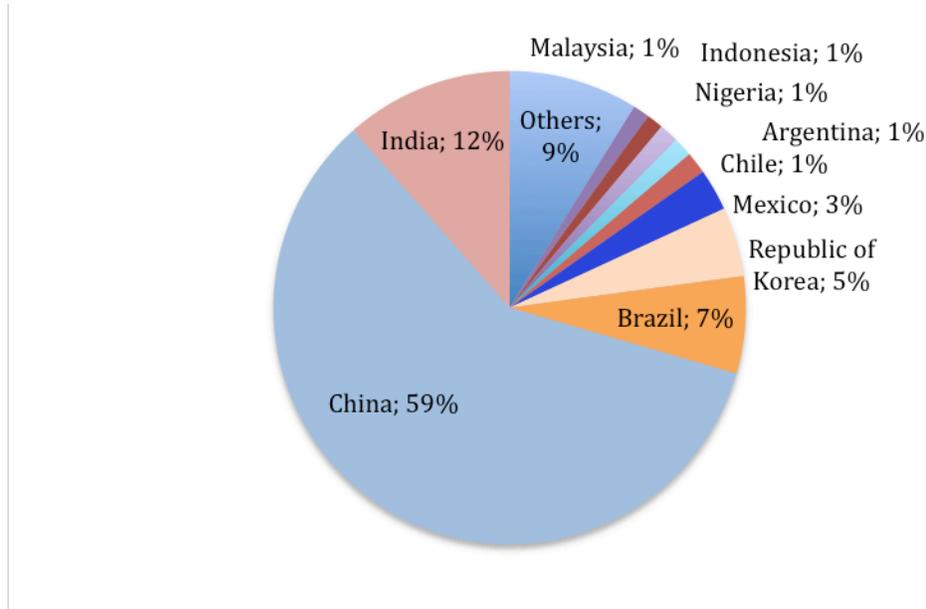


*(Data source: UNFCCC, 2009)*

<sup>32</sup> Bangladesh hosts 2 projects, Bhutan hosts 1 project, Cambodia hosts 4 projects, Lao People’s Democratic Republic hosts 1 project, Nepal hosts 2 projects, Tanzania hosts 1 project, and Uganda hosts 2 projects.

<sup>33</sup> As of October 2009, there were 42 DNAs established in Africa, more than the regional grouping of Asia and Pacific (38 DNAs), Latin American and the Caribbean (28 DNAs) and ‘Other’ (9 DNAs) (UNFCCC, 2009).

Figure 4: Expected annual CERs from registered projects by host party



(Data source: UNFCCC, 2009)

### *Explaining the Biases*

While a number of complex issues are involved in determining the flow of CDM investment besides capacity, at the most basic level CDM investment goes towards nations which, due to their relatively advanced levels of industrialization, can offer the large and inexpensive CDM projects most attractive to investors. Several studies have shown that the transaction costs (measured in cost per ton of CO<sub>2</sub>-e) associated with large CDM projects are ‘very small or even negligible’ while those for small-scale projects are ‘quite significant’ (Pacudan, 2005, p. 34). As such, it is thought that only CDM projects expected to produce over 50,000 tonnes CO<sub>2</sub>-e generate a sizable enough profit margin to be economically attractive to investors (Silayan, 2005).

Assuming, as Silayan (2005) does, that only 10% of a nation's emissions can be optimally used for CDM projects (p. 24), a nation's ability to provide projects of this scale is therefore directly related to their overall emission levels. According to the World Bank, as of 2005 China's national annual emissions were the second highest in the world (next to the United States), with India following close behind in fourth. The Republic of Korea is in ninth, Mexico is 12<sup>th</sup>, Indonesia 13<sup>th</sup>, South Africa 14<sup>th</sup>, and Brazil is in 20<sup>th</sup> (World Bank Data & Statistics Website, accessed 20 September 2009). More recent statistics show that, as of 2009, China has surpassed the United States in annual GHG emissions (Maplecroft, 2009). The market mechanism naturally leads investors towards those developing nations which, due to the combination of staggering population increases, fast-paced industrial-driven economic growth and substandard equipment, provide ample opportunity for large-scale and cost-effective emissions reductions through the transfer of clean-technologies already operational in the developed world (Ellis et al., 2007, p. 1). Southern nations who cannot provide projects of this particular type and magnitude are largely excluded from participation.

There are also broader 'enabling conditions' which must exist within a nation in order for it to attract CDM investment. These include a strong legal environment, macro-economic stability, sufficient institutional capacities, technological capabilities and a labour force which would be able to function effectively in pertinent sectors (Ibid).

As Baumert, Kete and Figueres (2000) argue, any "expectations of an 'equitable' CDM...should be tempered by other major factors that influence patterns of foreign direct investment," including size of the overall economy and population, income levels and disparities between rich and poor, openness to FDI and trade, exchange

rate policy, quality of institutions, government role in the economic, perceived stability of financial institutions, quality of infrastructure, and labour costs (including basic education and skills) (p. 13).<sup>34</sup> As a result, the distributional patterns exhibited by the CDM are consistent with the flows of FDI and reflective of well-known differences in investment climate (Lecocq & Ambrosi, 2007). To demonstrate: the three nations ranked at the top of the 2007 FDI Confidence Index (China, India and Brazil, respectively) also held the top three spots for relative share of CDM project investment based on expected average annual CERs from registered projects (Global Business Policy Council, 2007; UNFCCC, 2009).<sup>35</sup> This indicates the extent to which CDM project activities tends to flow to those nations already apt at attracting international investment and financing.

These trends are also influenced by the fact that the existence of political instability and corruption in many regions acts to deter investors from investing in potentially profitable CDM projects. For example, despite adequate infrastructure and cost-effective abatement opportunities in nations such as Saudi Arabia, Iran, Iraq, and parts of northern Africa, political instability and diplomatic constraints have prevented all but two Moroccan projects from being implemented under the CDM (Silayan, 2005, p. 37). Project implementation is similarly impeded in many nations in Africa and parts of Asia due to the prevalence of military and ex-military factions

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<sup>34</sup> For a discussion of additional factors affecting distribution of CDM projects, including geographical factors of latitude and natural resource endowments, see Huang & Barker, 2009.

<sup>35</sup> For the purposes of comparison, I have removed Northern (Annex I) nations from the FDI rankings. When Northern nations are included in the ranking Brazil's ranking is 6<sup>th</sup> overall, while China and India remain ranked first and second respectively in either case. Full global FDI confidence rankings are available at [www.atkearney.com](http://www.atkearney.com).

which not only control resources but are also thought to have corruptive influence over the local governments (Repetto, 2001, p. 309). The existence of political instability, which undoubtedly flows over into nations' civil, economic and judicial spheres, therefore increases investor risk to prohibitive levels and impedes the proliferation of CDM projects in many regions.<sup>36</sup>

### *Implications of Project Location Distribution Patterns*

From an economic standpoint, the geographic biases indicated above are indicative of a proper functioning market which channels investment towards the most cost-efficient opportunities. However, because CDM investment is biased towards those nations which already have relatively high levels of industrialization (and therefore high levels of emissions) and demonstrated ability to attract FDI and other forms of finance and investment, the mechanism is effectively benefiting those nations which are already relatively wealthy while marginalizing those which, arguably, are in the most need of increased levels of investment, technology, and other development benefits. Table 3 shows the general correlation between sustainable development benefits and project-type and project-location patterns.

It is interesting to note that the types and locations of projects with the highest propensity for sustainable development are small scale projects involving more than

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<sup>36</sup> One should note that there are other issues affecting the geographic spread of CDM projects and investment, which, while they are beyond the scope of this research, are nevertheless worth mentioning. For example, the fact that LULUCF credits are *de facto* barred from European Union Emissions Trading System (meaning that European firms and non-European buyers are deterred by concern for the low re-sale value of these credits on the market ) has been thought to affect investment in smaller developing nations which would otherwise be able to host these projects (see Lecocq & Ambrosi, 2007).

an end-of-pipe technological solution located in LDCs. The evidence examined above, however, points to an overwhelming majority of CDM investment going towards just the opposite, suggesting that the market mechanism of the CDM creates significant trade-offs between sustainable development benefits, equitable geographic distribution, and investor profit in the form of low-cost CERs.

*Table 3: Project distribution according to relative sustainable development potential*

<b>Relative sustainable development potential</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
<b>Geographical distribution</b>	LDCs	Medium sized countries	Larger developing countries
<b>Project size</b>	Small	Medium	Large
<b>Project technologies</b>	Community forestry Solar home systems	Plantation forestry Landfill	Energy sector

*(Adapted from Silayan, 2005, p. 44)*

### **Procedural Issues**

As I previously noted, procedural equity in the context of the CDM comes both at the international level, where Southern hosts must negotiate with Northern investors to ensure that CDM project activities complement or contribute to their national sustainable development objectives, and at the local project level where stakeholder consultations are meant to ensure the appropriateness of all project activities. I now address each of these issues in turn.

### *The Project Approval Process*

Cosbey et al. (2005) state that analyses of the CDM need not ask whether or not CDM projects are yielding sustainable development benefits as host governments would not have approved the projects if the case was otherwise (p. 3). Granted, CDM projects are required to correspond with the sustainable development goals of the host nation, and therefore, in theory, hosts have the power to negotiate projects which best serve their own interests. However, because of the cost-minimizing nature of the market mechanism and the highly competitive supply side of the CDM market, host nations are often forced to 'attract' CDM project investment by setting very low sustainable development standards, as requiring ancillary sustainable development benefits often increases project costs and deters investment (Sutter & Parreño, 2005). The mobility of capital under the CDM's market mechanism means that investors can easily invest their money elsewhere if requirements in a given nation are too stringent. As such, aspiring host nations have very little bargaining leverage with which to secure CDM benefits, essentially creating a 'race to the bottom' for CDM project standards (Brown et al., 2004; Humphrey, 2004; Bozmoski et al., 2008). Thus, while many nations have established ambitious criteria for sustainable development, Schneider (2007) notes;

It can not be observed that host countries prioritize projects with high sustainable development impacts by rejecting projects which have little or no sustainable development impact. In most countries, projects do not need to comply with all of the majority of the criteria for sustainable development, but rather only with one of them (e.g. creating some employment). (p. 10)

A recent study by Cole (2006) also concluded that those nations with virtually no mandatory sustainable development requirements for CDM project approval were the nations who attract the most CDM investment. The notion that the sustainable development benefits of CDM projects are to be subordinated to the efficacy of the market is common amongst those parties for whom cost-effectiveness is a priority. As one CDM investor noted in an study on CDM stakeholder interests;

Host countries that are ready for the CDM will not apply complicated or strict sustainable development criteria. To do so would mean that the host country does not understand what the CDM is, and is not ready for it. When host countries realise that they are competing with one another for CDM investment, they might mediate the complexity of sustainable development criteria. (quoted in Kim, 2003, p. 9)

Southern nations acknowledge their relative powerlessness in this regard as well. As an official with Indian Union Ministry of the Environment admitted, “We are keeping very flexible guidelines for CDM as complex rules would serve no purpose and scare away investors” (“Hot Pursuit, Cold Comfort,” 2002). Thus, while Southern nations are eager, as I suggested in Chapter 3, to support the inclusion of mandatory sustainable development criteria for CDM project approval, there is currently no nation involved in the CDM that requires that the sustainable development benefits of CDM projects to be explicitly monitored on a regular basis to ensure that they are ‘real’ and ‘verifiable’ (Olsen & Fenhann, 2008, p. 2820) as doing so would increase costs and deter investment. This suggests that Southern nations feel themselves at a structural disadvantage within the procedural processes of the CDM, making them unable or unwilling to take steps to ensure or maximize their benefits from the mechanism.

### *Implications of Project Approval Process Trends*

It seems logical to conclude that the existence of trade-offs between a host's ability to enforce sustainable development criteria and their ability to attract CDM investment under the market mechanism has significantly contributed to the lacking transfer of sustainable development benefits which I described in previous sections. However, the existence of the procedural inequity that results when host nations are unable to negotiate for their interests has a deeper relevance for Southern acceptance of the CDM. Recall here my suggestion in Chapter 1 that even if a particular decision does not serve the immediate interests of nation, the existence of procedural equity might nevertheless assure that nation that its interests have at least been formally recognized, thereby increasing the likelihood that those interests will be worked into future decisions. Thus, while it is one thing for Southern nations to accept the current lack of sustainable development benefits under the CDM as something which quite possibly could be ameliorated in the future, it is another thing altogether for them to accept lacking benefits in a cooperative mechanism which they do not feel they have any power to improve. Thus, the CDM's shortcomings in this realm of procedural equity may have graver consequences for Southern nations' willingness to participate than those which are initially evident.

### *Stakeholder Consultations*

As previously mentioned, stakeholder consultations are an important both as a means of ensuring the appropriateness of CDM project benefits and for securing domestic support for the CDM regime. While CDM projects developers are required to solicit

stakeholder comments in an “open and transparent manner” which “facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted” (FCCC/CP/ 2001/13/Add.2) it has been suggested that there are “inconsistencies” between the consultation with local people that the CDM ensures in theory and the actual practices in delivery (Liverman & Boyd, 2008, p. 53). While the quality of stakeholder consultations undoubtedly varies between projects, there nevertheless seems to be a general trend towards minimizing the depth and scope of the process. There are several ways in which this is thought to occur. In some instances adequate stakeholder consultations were undertaken, but the negative comments received regarding the proposed project were either ignored and not mentioned in the PDD comment summary (Schneider, 2007) or the consultations were done so late in the planning process that they were unable to have any real influence over decisions (Lövbrand, Nordqvist, & Rindeljäll, 2007). In other cases, project developers have been found to indicate to the local validating body who the relevant local stakeholders are and how to contact them (Bozmoski et al., 2008), thereby negating the very notion of an open and inclusive participatory process. One study on the stakeholder consultations of 93 randomly chosen CDM projects revealed that a full 25% of projects only consulted with “selected stakeholders” (Schneider, 2007, pp. 11-12).

Intentional exclusion by project developers is not, however, the only way in which local community input is marginalized. It is a requirement of the project approval process that the PDDs of all potential projects be made available for public scrutiny at various times in the project cycle, to allow for interested parties to review and submit

feedback (positive or negative) on the proposed project activity (FCCC/CP/2001/13/Add2). While beneficial to international environmental watchdogs and other organized groups seeking to monitor CDM activity, these PDDs are almost always made ‘publicly available’ over the internet, meaning that a vast majority of relevant local stakeholders are unable to participate in these consultation processes as they do not have access to the internet (Eddy, 2002; Boyd et al., 2007). Finally, as Liverman and Boyd (2008) report, in some instances CDM projects are implemented without obtaining local consent at all. In one particularly damning example, the ‘stakeholder comments’ from two separate CDM projects intended for two entirely different locations in India were found to be identical (grammatical mistakes included), indicating that at least one of the projects was submitted for approval with no genuine stakeholder consultation (Gupta, Kazi & Cheatle, 2005). It therefore seems that, in many cases, the stakeholder consultations provided for under the CDM mandate are implemented in such a way that the very essence and purpose of the participatory process is negated as the process is reduced to little more than a bureaucratic inconvenience to project developers and investors.

Despite the prevalence of the above critiques, there has not yet been a comprehensive or in-depth study to analyze the factors affecting the quality of stakeholder consultations under the CDM. While some of these exclusions and shortcomings may be explained by practical constraints (see Bozmoski et al., 2008), one might also be justified in assuming that the desire of project developers and investors to minimize administrative and transactions costs – to which comprehensive stakeholder consultations would surely add – plays a significant role in deterring due process of

stakeholder input. That many host nations are themselves often unwilling to impose any criteria to control the quality or quantity of stakeholder consultations (Cosbey et al., 2005) is yet another indication of how the CDM's market mechanism subordinates non-monetized or qualitative aspects of the mechanism to issues of cost-minimization.

### *Implications of Stakeholder Consultation Trends*

While the lack of procedural equity at the local stakeholder level is detrimental to Southern support for the CDM in and of itself, the purpose of stakeholder consultations is not merely to assuage hosts' fears of structural vulnerabilities but to ensure that foreign project designers and investors understood local conditions adequately enough to allow them to avoid adverse project impacts and to ensure appropriate project benefits. In this regard, the CDM also does not fare well for, in many cases, insufficient stakeholder analyses resulted in inappropriate project benefits which marginalized those segments of the population most in need of any social, environmental or economic gain to be had. In analyzing the on-ground impacts of CDM projects in India, Sirohi (2007) found that the production of 'non-farm employment' (an oft-cited 'sustainable development benefit' of CDM projects) tended to benefit only the relatively wealthy members of local communities whose social status and education allowed them to become involved in such employment opportunities. In a similar case study of CDM project in India, Gundimeda (2004) concluded not only that it was primarily the relatively wealthy segments of local communities which benefited from project gains, but also that the more impoverished members of populations tended to suffer from loss of various means of subsistence as

a result of CDM project activity. These individual case-studies are not isolated incidents, but rather are indicative of broader trends; for example, in a recent study of the first 16 CDM projects registered, Sutter and Parreño (2007) found that only 0.3% of the projects were expected to have revenue flows to the poorest 50% of local host populations (p. 84), indicating a rather endemic exclusion of the poor from the benefits of CDM projects.

To understand how inadequate knowledge of local contexts can lead to such exclusion, it is helpful to take a closer look at some of the case studies noted above. In Sirohi's (2007) study, she describes a CDM project in India which was designed to generate electricity for local households by supplying the community with the technology to convert cow dung into energy. However, because the technology required the input of substantial amounts of cow dung in order to generate electricity, only those families with four or more cows were able to benefit from this project, which was particularly exclusionary in a community where families averaged 1.3 bovines per household. In another example, a group of biomass gasifier power plants in India that were financed by CDM investment claimed to benefit the local population by providing them with low-cost energy. However, in actuality, this project excluded an estimated 95% of the targeted population from benefiting as they did not have an electricity connection and therefore could not take advantage of the increased energy supply (Ibid). While some scholars have argued that such inappropriate and inequitable project 'benefits' are the direct result of inadequate stakeholder consultations (i.e. Liverman & Boyd, 2008), it is important to recognize that even with an accurate understanding of contours of the local population, dealing

with the relatively wealthy and land-owning segments of society is often unavoidable.<sup>37</sup> Therefore, while it is perhaps inappropriate to attribute such results exclusively to flawed and exclusionary stakeholder consultation processes, one cannot discount the importance of nevertheless going through the process so that all opportunities for equity can be taken advantage of and, in those cases where equity is not possible, to ensure that excluded stakeholders are at least provided a forum in which to voice their complaints.

There is a second implication of flawed stakeholder consultations, however, which goes beyond the inequality or inappropriateness of project benefits. It is often an implicit assumption that what is good for climate change is good for sustainable development (Kolshus et al., 2001); however, this is not always the case as often projects implemented in the name of GHG reductions often adverse effects in other areas. Therefore, stakeholder consultations are also important in allowing project developers to anticipate and avoid any negative project impacts; be they environmental, economic, or social. Despite the requirement for both stakeholder consultations and environmental impact assessments as part of the project planning process under the CDM, many projects have nevertheless resulted in various harms to their host communities, indicating yet another flaw in a process designed to avoid such occurrences.

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<sup>37</sup> As Wasson (2000) notes to be the case with forestry projects in particular, investors from an Annex-I nation can only “strike a CDM project contract with the owner or concession holder of the land or forest sector to be reforested, afforested or protected” (p. 15), meaning that project benefits – in particular financial investment or revenue – are likely to accrue to these actors.

In some instances, these harms have been rather indirect. For example, the PDD of one project in South Africa that fitted a large brewery with natural gas and bio-gas compatible machinery to reduce its dependence on highly-polluting coal reported that “no significant negative environmental impact is expected from project activities” (UNFCCC, 2006, Section F.2). However, local activists and environmental groups have been very critical of the project, claiming that the brewery has failed to address a number of negative impacts that it has on the health of the local people and the local environment and that financing under the CDM is helping to postpone its shut-down (Lohmann, 2006, 287-292). Thus, while the project’s PDD is technically correct in stating that the project is not directly causing any environmental harms, the failure of the project to solicit and consider the comments of these local activist and environmentalist stakeholders nevertheless resulted in the project having indirect adverse effects on the local population.<sup>38</sup>

In other instances, more direct harms have been caused by the failure of project designers to properly evaluate and anticipate the impacts of a project on the local population. These direct harms are most often associated with forestry projects and carbon sinks<sup>39</sup> which, because they often involve the occupation and cultivation of large plots of land for plantations, have been connected with biodiversity loss, water

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<sup>38</sup> In reviewing the PDD for this project, I discovered that while project designers did solicit stakeholder comments (as is required of them) their questions were posed in a manner which necessitated a significant amount of extant knowledge concerning fuel-switching, the carbon market, as well as environmental implications of the project; as such, the stated occupations of the six stakeholders who participated were; Energy Advisor; Energy & Environmental Advisor; Sustainable Development Coordinator, Technical Support Group Manager, General Works Manager, and Project Officer – all from local corporations of government agencies. Thus, questions can be raised about the inclusiveness and appropriateness of such ‘consultations.’

<sup>39</sup> A ‘sink’ is defined by the UNFCCC as “any process, activity, or mechanism which removes a GHG, an aerosol or a precursor of a GHG from the atmosphere” (UNFCCC, 1992a, Article 1.8).

table disruption, pollution from herbicides and pesticides, and the impoverishment of local communities – in particular the poorest members – which depend on the land for subsistence (Bachram, 2004; Gundimeda, 2004). Further, concerns have been expressed about conflicts between the upholding of indigenous property rights and the use of land for large, monoculture sink plantations under the CDM (Lohmann, 2006). The issue of including forestry projects and carbon sinks in the CDM has therefore been very contentious, with environmental and human rights organizations both opposing such projects on the basis that they have the potential to be “environmentally and socially destructive” (Boyd et al., 2007, p. 24).

Hydro projects implemented under the CDM are also thought to be notoriously disruptive to local populations. For example, the Sondu Miriu Hydro Plant in Kenya is reported to have resulted in the diversion of water away from approximately 1500 households, in addition to causing eye and lung problems amongst the local population as a result of project construction dust (Haya, 2007; Bozmoski et al., 2008). Similarly, the Campos Novos Dam in Brazil displaced over 3000 people and resulted in significant loss of fish stocks and floodplain fertility in the area surrounding the project (Haya, 2007).<sup>40</sup> Again, while inadequate stakeholder consultations were not solely responsible for these harms, it is reasonable to assume that if proper stakeholder and environmental evaluations had been undertaken for these projects, the issues of human displacement and environmental degradation

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<sup>40</sup> Others have argued that, despite these concerns, there is little evidence that significant human rights abuses have been caused by CDM projects (Boyd et al., 2007). However, in the context of exclusionary, insufficient and often non-existent stakeholder consultations, lack of monitoring and follow-up concerning the on-ground aspects of CDM projects and relative dearth of case studies evaluating local project impacts, one can reasonably argue that the absence of evidence does not necessarily indicate the absence of abuse.

would have been revealed and project developers would have been forced to make amendments in order to ensure that the project proposal was not rejected by CDM governing authorities. As a result, many of these problems could have been avoided.

### *Conclusions on Procedural Equity and Implications for Social Trust*

The above sections have highlighted a number of concerns regarding issues of procedural equity under the CDM; first, that the market mechanism puts Southern nations at a disadvantage when negotiating project benefits or enforcing stakeholder consultations at the local level due to their need to attract investment. Second, as investors seem to have little incentive to conduct inclusive stakeholder consultations (as doing so may reduce their profit), local input is often excluded or ignored, simultaneously increasing the chances that a CDM project will have adverse effects on host localities and decreasing the likelihood that international participation in the CDM or future climate change efforts will be supported by domestic populations.<sup>41</sup>

There are, however, two other brief issues of procedural equity which must be noted.

First, host populations affected by CDM project activities have no complaint mechanisms through which to voice their concerns concerning any adverse or undesirable project impacts and therefore have no real control over project approval

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<sup>41</sup> A note should be made here on this latter point. While CDM projects are indeed implemented at the local level, they are first initiated at the international level and approved at the national level. As such, one might argue that isolated incidents of adverse local impacts may have little bearing on the willingness of the nation as a whole to participate in the CDM or future regimes. However, as Barrett (2003) argues, “states are not monoliths, and their negotiators do not represent a single interest group. But, somehow, the preferences of the citizenry must be consolidated into a unitary negotiating position” (p. 139). Thus, while the harms done to local, often poor citizens, do not directly affect partnerships under the CDM – particularly those between private entities – one should not discount the ability of public dismay over repeated such incidents to influence government policy.

(Haya, 2007). This simply adds insult to injury in many cases as local stakeholders find themselves powerless to seek rectification of, or compensation for, harms suffered under the auspices of the CDM. This had led many to argue for the need to introduce accountability mechanisms or appeals procedures to secure the rights of local stakeholders (Baumert & Petkova, 2000; Streck, 2007; Streck & Lin, 2008). While doing so might increase local acceptance of and support both for individual CDM projects and involvement in the cooperative mechanism as a whole, it would also undoubtedly increase projects costs and slow down the project approval process, suggesting once again that procedural equity under the CDM is conceived of as an impediment to the efficacy of the market mechanism, rather than a necessary facet of a cooperative agreement.

Second, it is critical to recognize that while the technical and environmental outputs of the CDM regime are closely monitored by international CDM authorities, the sustainable development benefits of CDM projects are only considered insofar as it is necessary for the initial project approval (Brown et al., 2004). This restricts official consideration of the impact of CDM projects to their *intended* project benefits and *anticipated* effects on local communities as represented in PDDs, as opposed to the actual on-ground outcomes which the above discussion has suggested are not always as intended. Recalling that no host nation currently involved in the CDM requires explicit monitoring of the sustainable development benefits of CDM projects, it is therefore not a requirement at the national or international level that the sustainable development benefits of CDM projects are actually realized. This suggests further procedural inequity under the CDM as the procedures in place to safe-guard and

ensure the environmental and economic interests of the North are not extended to the protection of the demands and expectations the South.

While the broader implications of social trust under the CDM will be addressed at length in a subsequent section, in the context of procedural equity it is important to realize that the CDM is already viewed as “risky business” by Southern nations due, in part, to the “imbalances in the power among the investor and host parties who will need to negotiate about important variables” at the project level (Parikh & Parikh, 2002, p. 22). The above discussion on the procedural inequities of the CDM reiterates the validity of this concern by indicating a both a lack of genuine concern amongst Northern investors about the appropriateness or benefits of CDM project activities as well as the absence of any consideration of, or protection for, non-monetized values or priorities such as procedural equity and sustainable development benefits under the market-based mechanism.

### **Analysis: Applying the Evaluative Criteria**

Having examined the trends and patterns characterizing the CDM, I now return to the three criteria outlined in Chapter 1 to evaluate the CDM. The first criteria I suggested seeks to examine whether or not the CDM has made progress in addressing the underlying problem which called for its initial creation. In the case of the CDM, the ‘underlying problem’ was not, as much of the literature on the CDM implies, the need to reconcile economic and environmental concerns (such is the purpose of other flexibility mechanisms); rather, the CDM was designed to demonstrate the reconcilability of North and South interests and, by doing so, to facilitate the

participation (current and future) of Southern nations in emission reduction efforts. Second, I suggested that perceptions of procedural equity within the CDM are important to securing support for participation in the mechanism, particularly amongst Southern nations which perceive themselves to be at a structural disadvantage to their potential partners. Finally, I noted that the CDM's ability to facilitate social trust, both of the potential partners involved in the CDM and of the structure of the mechanism itself, was an important factor in judging its efficacy. I will now address each evaluative criteria in turn, beginning with the CDM's effectiveness in mitigating the three major issues characterizing the North-South divide.

#### *The Fundamental Right to Development*

As I previously argued, the 'right to development' has been a clarion call for Southern nations in opposing binding emission reductions, as development and environmental sustainability have traditionally been seen as mutually exclusive. The CDM was purportedly able to reconcile these interests by providing Southern nations with sustainable development benefits in exchange for their low-cost emissions options. However, because of the cost-minimizing nature of the CDM, the majority of project investment was channeled towards those project types with little or no sustainable development benefits (above and beyond those associated with GHG reductions) for host nations, therefore suggesting a distinct tradeoff between cost-efficiency and sustainable development benefits for hosts. The argument can be made that even if sustainable development benefits do not directly result from such projects, the revenue from the CDM project could be reinvested towards such

purposes by the host government through taxation of certain (particularly profitable) project activities. For example, the Chinese government takes as a ‘designated share’ of all CER revenues, 2 % from afforestation and reforestation projects, 30% from N2O projects and 65% from HFC projects (Government of China, 2005, Article 24). This not only helps to encourage ‘priority’ project areas, but is also expected to generate over 2.25 billion USD by 2012 (Schneider, 2007) which can then be ‘reinvested’ back into sustainable development projects.<sup>42</sup> However, such taxation schemes are problematic in that they may deter investors from implementing projects in nations which apply taxes to high-profit projects as doing so would decreased their profit. Thus, there is still a trade-off, albeit a less direct one, between cost-efficiency and sustainable development benefits in this regard.

A second, similar proposal is that private investors can choose to re-direct a percentage of profits made from CDM investment towards various developmental benefits for host localities, unrelated to the project activities. In many large-scale CDM projects with little sustainable development benefits, project developers have already made such commitments (Capoor & Ambrosi, 2006; Ellis et al., 2007). This so-called ‘recycling of rents’ is virtually un-documented at this time, making this aspect of the CDM’s contribution to sustainable development very difficult to assess (Lecocq & Ambrosi, 2007). However, because a preponderance of CDM investment is channeled through the private sector which is, by definition, a series of profit-

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<sup>42</sup> Despite generating large amounts of funds, Wara (2006) argues that, as of 2006, none of these funds had been dispersed by the Chinese government for such purposes (p. 1787).

seeking entities, revenues from any project implementation are unlikely to be reinvested towards local benefits as doing so would reduce profit to the investor. It has been argued that only when a project is owned by a local private company or the host government will the largest fraction of CER revenue profits flow to the host nation's population (Sutter & Parreño, 2007); in Sutter and Parreño's (2007) study nearly a quarter of CDM projects analyzed were owned by 'transitional private companies' meaning that the largest percentage of revenues will flow to people outside the host nation (p. 84).<sup>43</sup> The assertion that the lack of direct sustainable development benefits to local populations may be compensated for by the voluntary re-routing of revenues for such purposes is therefore of little consolation to Southern nations seeking the transfer of sustainable development benefits. Finally, a number of projects were found to have adverse effects on the host localities, particularly relating to hydro dams and forestry projects. Thus, because it seems that Southern nations fail to substantively benefit developmentally from their participation in the CDM, and in many cases may in fact be harmed, one might reasonably conclude that the CDM has reiterated the incompatibility of Southern nations' developmental pursuits with their participation in global environmental agreements and efforts.

#### *Compensation for Historical Debt*

Southern nations were also found to demand compensation, both for their heightened vulnerability to the adverse effects of climate change (to which Northern nations have primarily contributed) as well as for the North's use of their cost-efficient emission

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<sup>43</sup> Pearson & Loong, 2003, put forth a similar argument.

abatement options under the CDM. This requires that any mechanism seeking involvement of Southern nations should facilitate the transfer of predictable, additional, and sufficient benefits above and beyond those associated with GHG reductions in accordance with the needs of the hosts, not the interests of the investors (meaning that nations with the most need should not be excluded from receiving benefits). However, the findings of this research revealed a distinct geographic bias characterizing the CDM, wherein those nations which are already relatively advanced attract a predominant amount of CDM project investment, compared to less developed nations who are, arguably, more in need of the increased financial flows and ancillary benefits. Further, CDM projects failed, for the most part, to transfer significant sustainable development benefits as compensation for the North's use of Southern nations' inexpensive abatement options due to the existence of distinct trade-offs between the provision of the economic 'benefits' for the North and the developmental benefits for the South. Here again the aforementioned option of 'rent-recycling' schemes is inadequate as a solution, as any benefits transferred under such a scheme would be entirely dependent upon the priorities, preferences, and even altruism of the investing actors which, for the most part, are profit-seeking entities. Therefore, reliance on such options to increase Southern benefits under the market mechanism is in conflict with Southern nations' demands that funding and benefits under a cooperative climate change agreement be compensatory and predictable, as opposed to voluntary and optional.

There are even broader implications of the notable concentration of CDM investment in the area of large-scale industrial emissions reductions and in certain geographic

regions. As a result of the profit maximization, the most cost-effective abatement options within developing nations are being quickly swept up by Northern nations looking to meet their Kyoto commitments at the lowest possible cost. While profitable for investors, this means that the average cost of abatement in Southern countries is constantly rising. This bias creates a problematic situation in which investors engage in ‘cherry picking’ (Olsen & Painuly, 2002, p. 239) or ‘cream skimming’ (Millock, 2002, p. 3), which can be defined as routine and systematic investment in the easiest and most lucrative abatement options within a specific nation. Therefore, a “profound skepticism” surrounding the CDM amongst many Southern nations, which is fuelled by concerns that Northern investors will use the CDM to exploit the easiest, least expensive options, leaving Southern nations with no choice but to “tackle the expensive options when it is their turn to take on commitments” (Kim, 2003, p. 5). As such, Southern nations have questioned whether or not, in the long run, they are better off to refuse CDM projects in order to save their low-cost abatement options for use in the future when they may have to accept binding emissions caps themselves (Prum, 2007; Sari & Meyers, 1999). As a result of the CDM’s role in facilitating ‘cherry-picking,’ it seems that, instead of Southern nations being substantially compensated for the historical debt owed to them by the over-consuming North through the transfer of developmental and financial benefits, the resources of Southern nations are once again being exploited (with potentially negative financial repercussions for the future), suggesting another reason why Southern nations may be deterred from continued participation in the CDM.

### *Global Distribution of Emissions and Wealth*

The CDM has also done little to address the global inequalities, in emissions and wealth, which Southern nations claim as justification for their opposition to (any form of sacrificial or binding) participation in emission reduction efforts. The lacking development benefits means that Southern nations are not gaining substantively from their participation in the CDM, as far as levels of wealth or development are concerned, while Northern nations are benefiting from the inexpensive abatement options which, in essence, allows them to maintain their high current levels of domestic production and consumption. Finally, it has been suggested that the CDM is expected to become the “largest source of GHG reductions produced by the Kyoto Protocol” (Wara & Victor, 2008, p. 9), suggesting that the notion of ‘supplementarity’ under the Kyoto Protocol is not being upheld as Northern nations seem unwilling to undertake anything but the least inconvenient and least expensive (typically foreign) emission reductions. This only reiterates the long-standing tensions between Northern nations’ concerns for cost-effectiveness and Southern nations demands that Northern nations amend their unsustainable production and consumption habits to make ‘environmental space’ into which Southern nations can grow.

### *Perceptions of Procedural Equity and Social Trust*

Procedurally, I suggested that the market-based structure of the CDM is such that Southern nations are either unable or unwilling to protect their developmental interests in the face of pressure from Northern investors to keep transaction costs low, suggesting that the ability of Southern nations to define and defend their interests

under the CDM is more rhetoric than reality. Further, that the very actions which could protect Southern interests under the CDM (including mandatory sustainable development benefits, closer monitoring of all project impacts, more inclusive stakeholder consultations, and mechanisms for complaint and appeals process for local populations) are seen as threats to the profits to be made by the North, suggests yet another trade off between the monetized priorities of the North and the non-monetized demands of the South under the CDM's market mechanism.

Procedural equity is not only important for the outcomes which it can secure, but also for making potential participants in a cooperative agreement or mechanism believe that their demands – even if not met in a particular instance – might at least be met in the future. The CDM is not designed to be a development intervention, *per se*, so it would be unrealistic to assume that every CDM project could offer significant sustainable development benefits. Acknowledging this, as Southern nations surely do, it is nevertheless critical that Southern nations believe the CDM to be designed in such a way that they are at least able to fairly and equitably negotiate for their maximum benefit, aside from the actual outcomes of these negotiations. That the CDM has clearly not provided this procedural equity suggests that it is unlikely to facilitate the South's trust – either of Northern intentions to reconcile North-South interests, or of the CDM's capacity to facilitate this reconciliation, even if all parties so desired. In light of historical Southern distrust of environmental cooperation and initial hesitancy about reliance on a market mechanism instead of a fund-based structure, the CDM may therefore be perceived as simply another regime designed by the North, for the North, thereby reinforcing the notion that the developmental needs

of the South and environmental sustainability and economic desires of the North are competing, if not mutually exclusive, interests.

## **Conclusions**

The above analysis suggests that the CDM has largely failed to meet the three criteria of effectiveness for a mechanism intent on facilitating the cooperation of Northern and Southern parties that I laid out in Chapter 1. The final chapter of this thesis will suggest the practical implications that these research findings might have for analyses of, and approaches to, Southern participation in cooperative climate change mitigation efforts.

## CHAPTER 5: CONCLUSION

The purpose of this research was to transcend isolated economic, environmental and developmental analyses of the CDM to evaluate the mechanism in the broader context of the North-South divide out of which it arose, and which it was implicitly designed to mitigate. I therefore evaluated the CDM against the following three criteria which I suggested were more accurate indicators of the mechanism's true success; the CDM's effectiveness in mitigating the North-South divide; the CDM's capacity to provide procedural equity; and, the CDM's ability to facilitate social trust. Using these evaluative criteria as a guide throughout, the findings of this research revealed that the market mechanism basis of the CDM led to a distinct set of distributive patterns and procedural trends which contradict the fundamental expectations that Southern nations have of a cooperative climate change mechanism seeking their involvement. On this basis, I asserted that, instead of narrowing the gap between Northern and Southern interests in climate change cooperation, the CDM may have actually widened the divide, suggesting that continued Southern cooperation is unlikely to be forthcoming.

There are limitations to the applicability of these research findings to the broader understanding of climate change cooperation, however. One such limitation is rooted in the fact that the conclusions of this research rely not only upon generalizations of the positions of a range of nations which are fundamentally unique, but also on simplifications of international cooperative processes which are undoubtedly complex. It has been suggested that any attempt to directly connect the impact of an international cooperative agreement or mechanism to changes in the behaviour of key

international actors risks creating spurious correlations (Young, 1999). This is because, in complex international systems, there are a number of driving forces at work, meaning that changes to any one of a number of variables may render conclusions about a particular agreement or mechanism's impact on future cooperation more, or less, relevant at any given time. For example, key decisions relating to issues such as climate change are most often made "in a distributed manner by a variety of governments, private and public sector managers, and citizens," based largely on local political context, local preferences and constraints, the set of options available and their local costs and benefits, and short-term economic needs (Kingdon, 1995; Morgan, Kandlikar, Risbey & Dowlatabadi, 1999). Therefore, the CDM is not likely to be the sole determinant of continued Southern participation in climate change mitigation, despite its prominence as the only mechanism of the current climate change regime aimed at reconciling North-South interests and institutionalizing North-South cooperation. Moreover, because the CDM will increasingly operate alongside other climate change initiatives of relevance to Southern nations, such as the Adaptation Fund and NAMAs, progress in these areas will undoubtedly affect Southern nations' perceptions of, and interests in, the CDM. However, in pointing to the existence of a broader range of factors affecting the acceptance of, or support for, an international cooperative climate mechanism, the conclusions of this research are nevertheless useful as they provide a fundamental starting-point from which more specific case studies concerning the impact of the CDM on Southern nations' approaches to participation in climate change negotiations and agreements can begin.

A second limitation of this research is that it does not consider the possibility that, despite the aforementioned faults of the CDM, Southern nations may continue to accept CDM projects regardless of their sustainable development benefits and regardless of the existence of procedural equity and social trust characterizing the mechanism. This is because, even in the absence of such things, Southern nations are not, for the most part,<sup>44</sup> being adversely affected by participating and will undoubtedly gain from the increased mitigation of climate change made possible through the use of their inexpensive emission reduction options. Granted, if one accepts that passive acceptance of CDM projects and similar forms of mitigation assistance by Southern nations is sufficient to effectively address the climate crisis at hand, then it is perhaps accurate to assume the South's continued (passive) cooperation. It would also be accurate to assume, if one accepts this premise, that the analytical approaches of past CDM scholars, whom I suggested were guilty of conflating environmental and economic successes with the overall desirability of the regime, are also justified.

However, this research demonstrates that the political, economic and environmental situation is increasingly such that a more meaningful, active and eventually binding form of Southern participation will be required to effectively address the global climate change crisis.<sup>45</sup> Thus, in seeking to evaluate the efficacy or impact of the

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<sup>44</sup> This research proposed two instances in which this generalization does not hold; in cases where CDM projects have adverse impacts on host localities and also, more generally, as the result of 'cherry picking' (See Chapter 4).

<sup>45</sup> Noting the need for more active – and potentially binding – participation of Southern nations in climate change mitigation, many scholars have interpreted the CDM as a 'transition tool' designed to help Southern nations make the shift from voluntary and domestically defined mitigation efforts to binding and internationally agreed-upon reduction targets (e.g. Zhang, 2001).

CDM, one must not focus on what is required to facilitate passive acceptance of CDM projects (which in most cases can be assumed), but on what is needed to secure increasingly active participation in current and future climate change agreements (which must be earned). This research sought to address this latter issue by pointing to a series of evaluative factors affecting Southern nations' participation in a cooperative climate change mechanism and, in doing so, revealed a fundamental limitation of market-based mechanisms that the current body of literature on the CDM has largely failed to acknowledge.

The above conclusions on the shortcomings of the CDM seem to indicate a fundamental contradiction between the reliance on cost-minimizing market mechanisms to facilitate climate change mitigation and the substantive involvement of Southern nations in global cooperative agreements. Many recommendations on how to reduce the trade-offs that exist between monetized Northern and non-monetized Southern interests under the CDM have been made, including the implementation of geographic/project type quotas and co-benefit criteria to increase Southern benefits under the market mechanism. However, that any meaningful application of such solutions would largely negate the CDM's cost-efficiency seems only to reinforce the irreconcilability of Northern and Southern interests under the auspices of a single market-based mechanism.

As I noted at the outset of this research, however, there seems to be a general consensus within the literature on the CDM specifically, and global climate change

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mitigation more broadly, that the extent of the climate crisis is such that a cost-minimizing market mechanism is likely to be a central feature of any future cooperative agreement. In light of the ever-increasing importance of Southern nations to the success of climate change mitigation efforts, it is essential for the benefits of market mechanisms' cost-efficiency to be weighed against the knowledge that Southern interests in, and demands of, climate change mitigation agreements are quite distinct from the traditional economic benefits which market-based mechanisms are designed to provide. Without substantive Southern nation involvement, even the most cost-effective global emission abatement mechanism or agreement will be gravely limited in both its scope and scale. Therefore, as the importance of Southern nation involvement in climate change mitigation increases then, so too will the need for a cooperative arrangement which, instead of passively accepting the inequalities and shortcomings inherent in market mechanisms, will seek to actively promote the interests of Southern nations. Thus, it is reasonable to conclude that an abandonment of market mechanisms may be necessary to facilitate the substantive participation of Southern nations in global emissions abatement efforts which is required by the severity of the climate crisis.

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