

On Developing and Implementing an Effective Approach to Coastal Management in Nova Scotia

Introduction

The province of Nova Scotia has turned its attention to the development and implementation of a coastal management strategy, as indicated in the recent Speech from the Throne, the Provincial Budget Speech in April 2008 and the 2008/09 Nova Scotia Government Business Plan. This is important as a coastal management strategy, with attendant policies and actions, can provide greater certainty for economic growth while protecting important environmental and social qualities associated with the coast. The previous effort, summarized in the 1994 *Coastal 2000* report, laid out a plausible approach for the government to address the array of coastal issues confronting Nova Scotia, however this effort was not implemented. The purpose of this edition of the *Marine Affairs Policy Forum*, is to highlight some of the substantive and procedural factors that could significantly affect the success of the current effort. These factors and their consequences need to be considered by key stakeholders who affect, or are affected by, decisions regarding coastal area uses and allocation. How well these components are understood and acted upon will influence the province's success, both in meeting its 2010 target date for development of the strategy, and more importantly, its subsequent implementation.

Nova Scotia's Current Coastal Planning Effort

The 2008/09 Government Business Plan lays out its approach towards coastal management over the next two years. Firstly, it confirms that a Coastal Management Framework has been adopted to guide coastal planning decisions. Secondly, it specifies the vision, goals, objectives and strategic activities that the Government of Nova Scotia will undertake to better manage Nova Scotia's coasts. These objectives are focused on six priority coastal issues: sea-level rise and storm events; working waterfronts; coastal water quality; coastal ecosystem habitat function and services; coastal access; and coastal development. Thirdly, it identifies the Provincial Oceans Network (PON), an interdepartmental committee consisting of 12 departments and agencies that have a mandate or interest in coastal management. The PON is the author of the Coastal Management Framework. Fourthly, it specifies the three-person Coastal Secretariat, housed within the Department of Fisheries and Aquaculture to lead the implementation of the Framework. Finally, it specifies the deliverables for 2010 as:

- completing a report on the state of Nova Scotia's coast;
- developing a Sustainable Coastal Development Strategy;
- establishing a coastal research network;
- mapping important coastal areas;
- building a coastal web portal;

- developing public awareness and education; and
- establishing formal partnerships with the federal government.

Clearly the provincial government recognizes that to complete these deliverables requires both coordinating its own departments and agencies, and obtaining cooperation from other levels of government, First Nations and key stakeholders with an interest in coastal resources. However, obtaining such coordination and cooperation can be improved by sharing a common awareness of substantive and process-related matters which have been shown to influence success in other jurisdictions. This paper is intended to contribute to this increased awareness by presenting a brief overview of current integrated coastal management (ICM) thinking. It then uses a critical path analytical framework to flag some key questions that will need to be answered to the satisfaction of most, if not all, coastal stakeholders in Nova Scotia.

Overview of a Systems Approach to Coastal Area Management

The need for coastal management or to be more specific, integrated coastal management (ICM), arises from the fact that societal demands for outputs from the coastal area often exceed the capacity of the area to meet them all. Since all outputs cannot be expressed in monetary terms, some process other than the markets must decide what mix of outputs is to be produced. Increasingly over the past three decades, ICM has been offered up in legally-binding and 'soft law' policy instruments as a means of facilitating such a process.

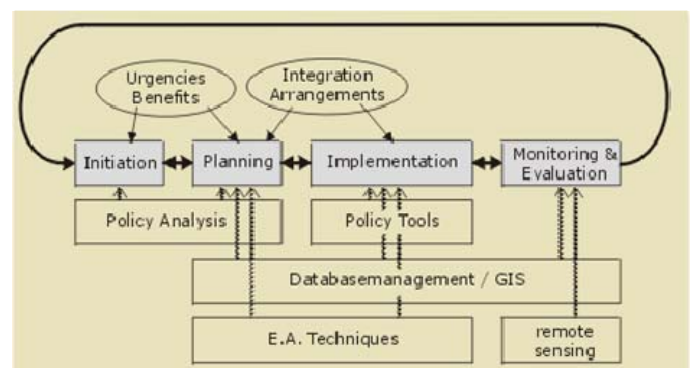


Figure 1. The System's Approach to ICM

Figure 1 illustrates ICM as a continuous and dynamic process to make rational decisions for the sustainable use, development, and protection of coastal areas and resources. It shows the sequential steps and the tools, including environmental assessment (E.A.) techniques, which are available to support decision making at different stages in the process. The process formally begins with the initiation stage, generally in response to crises or opportunities arising in the coastal zone. It continues through planning and implementation, followed by monitoring

and evaluation of progress towards its' stated objectives. A feedback loop informs and modifies the next cycle to address new urgencies and benefits and/or unresolved problems. While the long-term benefits from ICM are substantial, the transaction costs are high and the wait for returns on investment generally exceeds the typical political cycle. This has reduced the uptake of ICM by some governments despite grass roots support. Even when governmental support for development of ICM is evident, efforts have often been under-resourced. Nonetheless, ICM continues to be widely accepted as the approach that can most effectively maximize the benefits provided by the coastal zone while minimizing the conflicts and harmful effects of multiple activities upon each other, on resources and on the environment. Key features of ICM, drawn from a review of global best practice include:

- Decision-making is guided by a set of a principles, based on the special characteristics of the coasts;
- Essential for both top-down and bottom-up commitment and “buy-in”;
- Essential to have a coordinating mechanism that brings together sectors, different levels of government, users and the public;
- Absolute requirement for good and relevant natural and social science, traditional knowledge and information on social norms on a timely basis to inform decision-making.

The ICM Critical Path Analytical Framework

The ICM critical path analytical framework (Figure 2) addresses the need to integrate information from all relevant sectors and disciplines to resolve coastal issues. The framework requires the setting of Terms of Reference (TOR) followed by four sequential stages. It forces consideration of substantive and process-related matters essential for the success of any ICM initiative. Its purpose here is to provoke discussion around topics that might lead to an improvement in the debate surrounding the current effort in Nova Scotia, including the content of the strategy, the level of institutional success to be expected in its implementation, and the level of success arising from such implementation.

Terms of Reference for a Nova Scotia ICM Strategy

The goals, objectives and targets that an ICM strategy is to accomplish can range from the generic to the specific. The specificity of the TOR depends on the current issues in the coastal area to be managed and the time frame set for the strategy. To answer this in Nova Scotia, priorities need to be agreed upon, the coastal management area needs to be defined, and the principles guiding coastal planning decision-making determined. Using sea level rise and storm events as an example, the three Maritime provinces in general, and parts of Nova Scotia in particular, have been assessed as being highly sensitive to climate change (Figure 3). Accepting this, a case can be made for the TOR to specifically include a target aimed at mitigating and/or adapting to predicted climate change impacts.

In some jurisdictions, there is a strong correlation between the issues identified and the spatial extent of the coastal area being managed. However, other definitions use policy or administrative criteria in setting the boundaries of the coastal zone. Whatever option is chosen to spatially define the coastal zone, this needs to be done at the outset as it determines the area of resource use and potential conflict among stakeholders, as

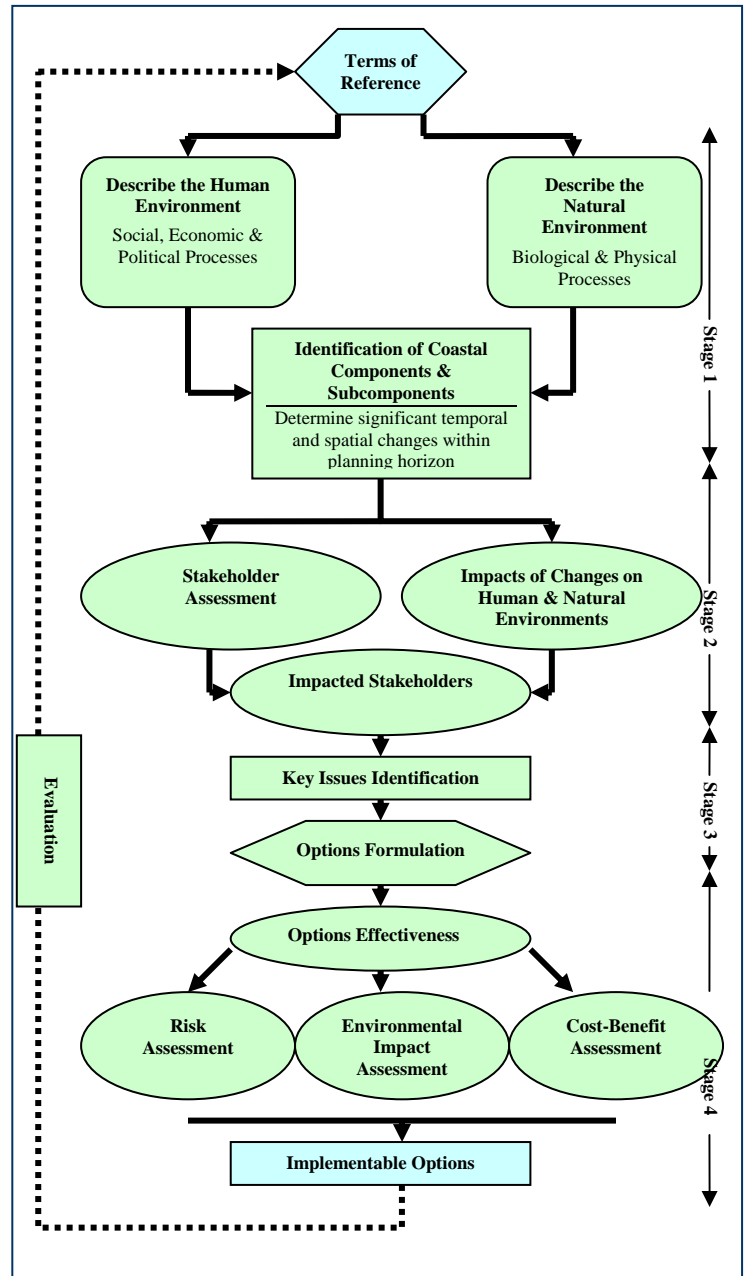


Figure 2. ICM Critical Path Analytical Framework

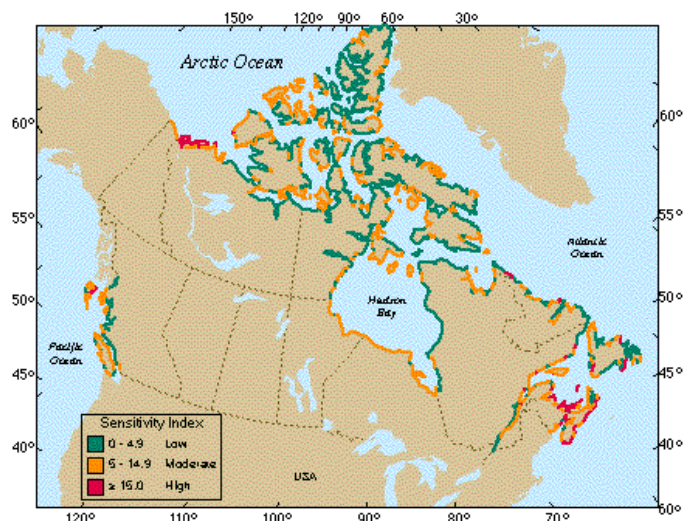


Figure 3. Areas in Canada Sensitive to Global Climate Change Impacts (Source: Shaw et al. 1998)

well as other stakeholders who may potentially be affected by activities and management decisions. Defining the spatial extent of the coastal management strategy helps constrain the range of actions needed to resolve or mitigate resource or space use issues, enhancing the potential to implement effective interventions.

Reconciling and prioritizing the multitude of sectoral and issue-based strategies and objectives that affect the ICM effort (e.g. forestry strategy, coastal tourism strategy, no net habitat loss and other environmental goals, aquaculture development, tidal energy, onshore/nearshore oil and gas development, coastal mining, residential development, industrial development, fishing activities, water resources strategy, agricultural policy objectives, etc.) can be challenging in the absence of agreed upon principles to underpin the current coastal planning efforts. Nova Scotians have not been shy in declaring the values they hold and which support their vision for coastal development. This was evidenced at the recent Whites Point Quarry public review process and has been demonstrated in a multitude of less formal processes and events around the province (e.g. recent community meeting of the St. Margaret's Bay Stewardship Association). The increasing "bottom-up" approach being used to instigate actions on the part of government, or in some cases, even bypassing government, speaks to a degree of disconnect between the values held and their reflection in public policies. Establishing and acting upon the principles that will guide ICM in Nova Scotia contributes to a transparent process for decision making that allows a level of certainty valued by all stakeholders. Principles are essential for ICM because once accepted they are universal in their reach and are subscribed to by all stakeholders, unlike policies which are clearly embedded in their specific context. The suite of principles commonly espoused in ICM approaches includes sustainable development, inclusivity, fairness, transparency, precautionary approach, and ecosystem-based management.

Stage 1 - Acquisition and Collation of Information

This stage focuses on collecting scientific and other knowledge-based information relevant to the objectives of the TOR. Within that context, it requires an understanding of the functioning of the ecosystems and the social and economic knowledge necessary to understand patterns of human behaviour. Only by taking into account the interactions and interdependencies among natural resources and different socio-economic activities, can meaningful management options to address changes occurring in the coastal area be found. The purpose of this stage is to eschew a description of everything that is known and instead, develop and demonstrate an understanding of how the system is working in time and space. For Nova Scotia, Stage 1 activities suggested in the business plan include the completing of a state of the coast report, mapping important coastal areas and establishing mechanisms such as a coastal research network. Guidance on understanding just what should be reported on and mapped comes from having clearly defined objectives in the TOR, agreement on the definition of the coastal area to be managed and the timeframe for assessing the current and predicted changes in the area to be managed.

Stage 2 – Determining the Impacts of Change

This stage focuses on understanding the major socio-economic drivers operating within the management area and the influence and power of stakeholder groups relative to the intended outcomes identified in the TOR. It also requires a clear recognition of the impacts of the changes on the different

human and environmental components in the management area and finally, which of the stakeholders are more likely to be affected by these changes. This stage cautions a thorough understanding of who would most likely be affected, positive and negative, and their influence over the intended outcomes in the TOR. By focusing on interactions between the human and environment components and their expected changes, this stage guides discussions away from a sectoral focus to ones that are non-sectorally entrenched. This is of considerable value to the Nova Scotian effort as it has the potential to reduce conflict between sectors and among members of the same sector.

Stage 3 – Key Issues and Options Identification

This stage focuses on understanding the magnitude of the impacts arising from predicted changes on different stakeholders and allows for a discussion on potential options to address these. For Nova Scotia, the impacts of sea level rise and storm events will likely affect a wide range of stakeholders. While this is expected to be negative and as such in need of amelioration, a discussion on maintaining or enhancing any positive impacts arising from predicted changes should also be undertaken. Similarly, in some situations, the predicted change may not be tractable and as such, management efforts should be recognized as limited.

The identification of potential options is best done through negotiation and consensus to ensure support among the majority of stakeholders. For example, an option to minimize the hazards associated with rising sea level through establishing a set-back policy needs to recognize its effectiveness will be limited by the existing location of coastal development infrastructure. Similarly, the low percentage of public ownership of coastal lands in Nova Scotia (Figure 4) will constrain unilaterally-derived policy options by the government and will require the cooperation of the private land owners.

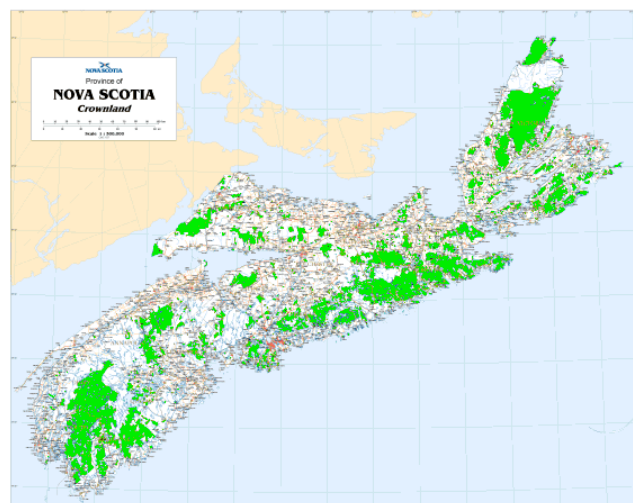


Figure 4. Crownland coverage in Nova Scotia (Source: Government of Nova Scotia)

Stage 4 – Evaluation of Management Options

This stage focuses on assessing how well each of the potential options, if implemented, will effectively and efficiently contribute to the objectives specified in the TOR. Using a number of tools such as risk assessment, environmental impact assessment and cost-benefit assessment, each of the options can be evaluated against the TOR to determine its success in achieving the specified objectives. They can also be evaluated for reducing the risk to people and the environment from predicted changes and for maximizing the benefits gained to coastal stakeholders. This stage in the framework provides the

justification for why specific policy options should be implemented. For Nova Scotia, it is likely that some of the policy options will specify a legislative or regulatory response (e.g. developing province-wide restrictions for specific activities) while others will include “softer” policy responses.

Policy Implications

Unlike sectoral or thematic management efforts, the ICM approach takes into account the distinctive character of coastal areas, is multi-purpose oriented, analyzes the implications of development, conflicting use and interrelationships among physical processes and human activities, and provides linkages and harmonization between sectoral coastal and ocean activities. There are many policy-oriented lessons from other jurisdictions but ultimately, the procedural and substantive components of ICM development in Nova Scotia will be determined by its specific context.

Focusing on the implications associated with the coastal area definition, this initial decision determines the boundary limits for actions falling under the auspices of those charged with achieving the objectives of the strategy. Furthermore, it identifies actions and stakeholders outside of the boundary area that impact (positively or negatively) on the success of the strategy. This can highlight to government and other decision makers the level of coordination, cooperative effort and partnership needed to ensure complementary and consistent sectoral policies are set. These should be mutually reinforcing, or at least neutral, to the objectives of the ICM strategy.

In Nova Scotia, the authors of the earlier *Coastal 2000* policy document agreed that an appropriate definition for Nova Scotia’s coast zone must be practical, functional, responsive to all issues, and above all, flexible. The authors recognized that to address certain issues, the coastal zone may require a definition that encompasses the entire province while for others, a narrow coastal area may be more appropriate. While responsive to the issues in need of integrated management, this level of flexibility introduces an amount of administrative complexity that could prove untenable. On the other hand, a strict administrative boundary based on jurisdictional authority or a fixed landward and seaward linear distance from shore could present constraints that result in an ineffective solution to the problems at hand. There is a misconception among some, both inside and outside of government, that for ICM planning to succeed, the geographic extent covered by the plan must be all encompassing. This would clearly be impractical for most coastal states, given that administrative, political and sectoral divisions exist. The purpose for defining the spatial extent for coastal management is not to assimilate these structures but rather to highlight when policies and actions need to be coordinated and/or integrated. Achieving such coordination will require departments and agencies to reorient their approach to sectoral decision-making and to consider the impacts of their decisions on other sectors present in the management area. The willingness of multiple agencies and departments to cooperate will depend on the acceptance and support of the overall benefits, as perceived by their constituencies and powerful stakeholders. Obtaining universal acceptance of principles such as fairness, respect for community values and the right to develop in a sustainable manner will play an important role in achieving this. Nonetheless, it must be recognized that the greater the extent of the defined boundary, the greater the

coordination challenge will be. With this in mind and given that not all areas of Nova Scotia’s coast require the same degree of attention for each of the issues identified, pursuing ICM as a multi-phased exercise may be advisable. For example, focusing initially on an important, yet widely distributed but tractable problem may allow for initial successes and thus build support among key coastal users. Such an approach would require a focused TOR with achievable targets and a coastal definition that is constrained by the needs of the problem to be addressed. For example, the problem associated with managing the effects of sea level rise and severe storm events might set an effective defined area for management based on the reach of impacts from a 1:1000 year storm plus an elevation buffer of some determined height. Furthermore by focussing attention on vulnerable areas, the effectiveness of the interventions is made apparent. Explicit objectives to be achieved over a given time frame can then be set and the necessary policy instruments and resulting actions developed and implemented. Similarly, a focused effort on public access or coastal development could define a boundary area based on linear distance from the mean high water mark that ensures valued ecosystem components are captured within the boundary limits. Collapsing these issue-specific boundaries into a coastal zone definition that is effective yet feasible clearly needs an informed discussion on how boundaries are to be determined. Setting policies aimed at clarifying how specific objectives will be met based on agreed upon values, can allow for a clear signal to be sent to all stakeholders as to what is and is not allowed, where and why.

Yet another topic with significant policy implications is the determination of where the resources will be obtained for development of the ICM strategy and its implementation. The lessons from other jurisdictions have highlighted the important role of financial sustainability in achieving ongoing ICM success. They also point to a need to ensure obvious policy gaps are plugged, such as a lack of appropriate legislation and/or economic incentives/disincentives. For Nova Scotia, ideas for ongoing financial support for ICM can be developed that are tied to economic rents collected from using or having access to coastal resources. For example, the State of Louisiana uses a percentage of its oil and gas revenues to fund the activities in its coastal protection strategy while a percentage of coastal tourism-related receipts are used in other jurisdictions to fund coastal management efforts. No doubt the possibilities and policy implications of such potential funding mechanisms will require considerable review and justification.

Conclusions

Numerous arguments have been put forward by those in the public, private, non-governmental and academic community on the benefits of implementing a coastal policy for Nova Scotia. The recent announcement by the provincial government offers the opportunity to start focusing on achieving some of these. By identifying the six priority coastal issues, the PON Committee has set the stage for focusing on the content and process of the strategy. The immediate task ahead before getting too far into the process is to refine the TOR by explicitly defining the coastal area to be managed, the time frame to achieve results and the principles, values and criteria that would underpin the strategy and as such, justify why these objectives and targets are being selected for attention.

This document draws on a paper being developed for publication by Lucia Fanning and co-authors. To enhance readability, references used to prepare the document are not included but are available upon request. Marine.affairs@dal.ca.