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#### Introduction

he Rio Declaration (1992, UN Conference on Environment and Development) flagged integrated management (IM) as vital to sustainable development, whether focused on coasts, oceans, watersheds, forests, or upland areas. However, the concept has evolved to encompass many more meanings. For example, it has been defined as a multi-disciplinary approach to reconcile sustainability of the biophysical environment with economic growth and prosperity (Olsen, 2003), and as a collaborative planning approach that addresses social, economic, institutional, environmental, and legal interests of multiple stakeholders and of the resources being managed (Christie et al., 2005). ComInternational guidelines for IM emphasize the principle of participatory governance, in addition to those of sustainable development and environmental protection (e.g., UNEP). Research around the globe has demonstrated that wide public participation is the key to success (Tobey and Volk, 2002: 290), but participatory governance remains one of the most neglected areas of IM (Kearney et al., 2007).

This paper, which focuses on ocean and coastal areas, explores the challenge of public participation by discussing the role of communities in IM. It draws on a decade of collaboration between academics and community partners to outline the community perspective on both the limiting factors and the opportunities, and a state-of-the-art survey of community involvement in IM, particularly in the Canadian Maritimes. The paper highlights the importance of linking communities and governments, and the need to overcome the growing disconnect between the two. It also illustrates the varied experiences of local coastal communities with IM through three concrete examples. These practical examples lead to two specific outputs: a set of fundamental IM values and attributes from a community perspective, and a four-step process for facilitating and enabling communityfocused IM. The conclusion summarizes key outcomes in terms of inclusivity and active involvement of communities.

## Integrated Management: A Coastal Community Perspective

ponents that require "integration" include political and legal jurisdictions, ecosystem parameters, conflicting uses, social, cultural, and economic needs, different knowledge systems, and controls on anthropogenic impacts.

#### The Challenge of Implementing Integrated Management

It is not surprising that governments, including those of Canada, have been slow to develop policy that fully reflects the aspirations of the Rio Declaration, particularly with regard to participatory governance. Several difficult hurdles must be overcome. First, single ecosystems usually fall under the jurisdiction of multiple authorities, and "the purposes for which authorities are statutorily permitted to act and their legal ability to cooperate with each other are sometimes restricted in ways that impede." Second, major equity issues

arise when the profits and benefits of largescale activities accrue to limited segments of society while costs are imposed on local communities and the environment. Third, there is no generally accepted framework for monitoring and evaluation; few IM initiatives identify results-based indicators. Fourth, IM initiatives are often large scale and focused on the space rather than the people (e.g., on large ocean management areas in the marine environment), which can disregard or be incompatible with the needs and aspirations of people living in those areas.

## **Box 1 Comparing Definitions of Integrated Management**

"a comprehensive way of planning and managing human activities so that they do not conflict with one another" and "so all factors are considered for the conservation and sustainable use of marine resources and shared use of ocean spaces..."

DFO, 2005: 11 and 19

"a continuous and dynamic process that unites government and the community, science and management, sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources"

GESAMP, 1996, in Bastien-Daigle et al., 2008: 97.

From the government perspective, IM has tended to be defined more nar-

rowly (as in the left hand side of Box 1), perhaps without highlighting the participatory collaboration and opportunities for colearning that we argue will be key to overcoming IM barriers (compare with the right hand side of Box 1).

These challenges are daunting. To build institutions that can accomplish multiple levels of integration in natural resource planning will require linking existing government agencies both vertically and horizontally. However, government linkages alone cannot accomplish effective IM. Keen

and Mahanty (2006) suggested that

IM must also involve open discussion of the values and objectives promoted in planning exercises for any given geographic area, as well as open sharing of relevant information, thereby providing the opportunity for wider knowledge and skill base sets to be used in decision making. We turn next to the pressing need to build these institutions in the Canadian coastal zone.

## **Integrated Management and Canadian Coasts**

Globally, coastal zones are under increasing pressure. A growing proportion of the world's human population lives on the coast, together with a majority share of human infrastructure and activity in industry, transportation and trade, energy processing, communications and services, and a disproportionate share of global consumption and waste production (Tobey and Volk, 2002: 287). But as coasts and oceans are also generators of vital ecological services, and home to much of the world's fish stocks, rapid coastal development

**Communities want** 

long-range planning for alleviation of poverty, priority for local needs, and recognition of their rights to access local resources. This implies close attention to "ecosystem/ foodweb" connections that exist between vital components of the ecosystem and community livelihoods.

<sup>1</sup> Gibson (2003: 128). For further references, see Kearney et al. (2007); Klinger (2004); Weiss Reid (2004); and Wiber and Kearney (2009).

## **Box 2 Multiple Levels of Integration in Coastal and Ocean IM**

- Inter-sectoral integration that brings together agencies and groups from different sectors, such as fisheries, tourism, oil and gas etc.
- Inter-governmental integration that brings together the several levels of government (national, provincial, and local).
- Spatial integration that connects the land (including watersheds and river basins) with the ocean.
- Science-management integration that includes both natural and social sciences (and we would add traditional ecological knowledge).
- International integration that links local, provincial, and national regulations with international conventions and emerging standards (Cicin-Sain and Knecht, 1998).

and climate change threaten environmental quality and human welfare. Development also squeezes out long-time users of coastal areas, which leads to competition and conflict. These concerns are common to much of the world, and Canada is no exception.

International conventions and declarations guide management of coasts. This includes the United Nations Convention on the Law of the Sea (1982), the Convention on Biological Diversity (1992), and the Rio Declaration (Cicin-Sain and Belfiore, 2005). These conventions have highlighted the various forms of integration indicated in Box 2.

Canada responded with guidelines for coastal and ocean IM under the *Oceans Act* (Canada, 1996, Chapter 31), which authorizes the Department of Fisheries and Oceans (DFO) to work

"in collaboration" with other persons and bodies, including local stakeholders. But, as Canada's Auditor General, the Senate Committee on Fisheries and Oceans, and various academic researchers have pointed out, this collaboration has not developed. Instead, IM approaches implemented without community support and buy-in have led to local opposition. This can be avoided, particularly through the adoption of a community-based perspective, as this paper illustrates.

# Community Perspectives on Integrated Management

For the past several years, a unique alliance of First Nations communities, fishermen's associations, universities, and coastal resource centres has examined processes of integrated management on the coast, and building

local capacity for engaging in these processes. This has been supported by the Coastal Community University Research Alliance (CURA) project, which studies and shares lessons learned across the three Maritime provinces (Coastal CURA). The authors gratefully acknowledge the support of the Social Sciences and Humanities Research Council of Canada.<sup>2</sup>

The diverse initiatives in which our community partners are involved include ecosystem-based management plans (Malpeque Bay, PEI), watershed remediation (Bear River, NS), shellfish habitat restoration and restocking (Annapolis Basin, NS), harbour management (Saint John Harbour, NB), groundfish management (Fundy Fixed Gear Council, NS), aquaculture site planning (Southwest New Brunswick), and larger area management plans (SWNB Marine Resources Planning Initiative). The Coastal CURA has examined these real-world community experiences with IM, of which three illustrative examples are described here - one each from Nova Scotia, New Brunswick, and Prince Edward Island. In each, a problem is described, along with the relevant regulatory powers, the local institutions, community actions, and resulting lessons. We discuss the challenges arising from interactions between community and government, and the grass-roots success stories that highlight the different ways communities work toward a common goal of achieving IM.

<sup>2</sup> Publications include Charles (2008); Kearney et al. (2007); Wiber and Bull (2009); Wiber and Kearney (1996); and Wiber et al. (2003, 2009).

## Harbour Management, Saint John Harbour and the Fundy North Fishermen's Association, New Brunswick

**Problem:** Environmental challenges for the international port of Saint John are numerous (agricultural and forestry run-off, pulp and paper mills, oil refineries, freighter and cruise ship terminals, harbour dredging and dredge dumping, and raw municipal sewage outflows). Rapidly expanding petrochemical developments and post 9/11 security measures also impact local users of the port, especially the inshore fishery.

**Regulatory Powers:** Numerous federal (DFO, Transport Canada, Environment Canada), regional (Saint John Port Authority), and provincial and municipal agencies have regulatory powers.

Local IM Institutions: Fundy North Fishermen's Association has prompted the formation of a number of ad hoc committees to address specific management harbour issues, including the impact of dredge dumping on migrating lobster, post 9/11 wharf restrictions, liquefied natural gas terminal development, and expanding harbour traffic causing gear loss. The committees include Dredging Dumping (led by Environment Canada), Saint John Wharfs (led by Small Craft Harbours/DFO), Liquefied Natural Gas Community Liaison (led by Canaport LNG), Harbour Traffic (led by Transport Canada/Port Authority).

Fundy North has been involved in planning and research, including environmental impact assessment, developing monitoring protocols, and evaluating tugboat and shipping damage to fishing gear and subsequently to lobster stocks. Overall, Fundy North found the existing consultation process frustrating, as there are no clear channels of responsibility and authority. Mitigating environmental impacts and juggling the multiple uses of the harbour requires more effective integrated management institutions.

**Community Actions:** A film was produced that captures community suggestions about how different stakeholders can work together in and around Saint John Harbour, including voluntary traffic separation schemes. The film has had wide distribution and media coverage, and has been a tool for dialogue.

**Lessons:** One government agency should take the lead in establishing an integrated planning board to facilitate harbour planning and operations. New management institutions and policy initiatives can be guided both by the local specificities in Saint John harbour and by best practices from elsewhere (see Wiber and Recchia, 2009).

## St. Mary's Bay, Nova Scotia: Shellfish Sanitation, the Annapolis Watershed Resource Committee and Beach Privatization

**Problem:** Land-based pollution and seasonal water quality problems led to toxins in shellfish and to the closure of productive beaches; habitat destruction and over-fishing have led to declining stocks.

**Regulatory Powers:** Environment Canada tests water quality and classifies shellfish growing areas; DFO controls harvesting, transportation, and cleaning of shellfish, and the opening and closing of shellfish growing areas. The Canadian Food Inspection Agency (CFIA) regulates handling, processing, marketing, and the import and export of shellfish, including depurated shellfish from closed beaches. The Canadian Shellfish Sanitation Program (CSSP) is jointly administered by Environment Canada,

DFO, and the CFIA. The provincial departments of Natural Resources, and of Fisheries and Aquaculture as well as municipal authorities also have regulatory powers.

Local IM Institution: The Annapolis Watershed Resource Committee (AWRC) was a multi-stakeholder management board facilitated by a local non-governmental organization, the Clean Annapolis River Project (CARP). Other members included the Bay of Fundy Marine Resource Centre (MRC), local clam harvester associations, Bear River First Nation, clam processors, and all levels of government. The AWRC collaborated with clam harvesters on habitat restoration and clam reseeding experiments and co-ordinated with municipal sewage and tidal

power authorities. However, the AWRC found that their efforts were challenged by beach privatization. Since 1997, one company has held an aquaculture lease for 1,682 ha of beach in St. Mary's Bay. So far, the company has only harvested wild stock and operates the only depuration plant for shellfish harvested from closed beaches in the area. As their primary source of clams is from closed beaches, the company has no incentive to improve beach habitat. Beach closures are also increasing. In 2008, most of the Annapolis Basin's beaches were closed to clamming because of changes to protocols surrounding wastewater treatment plant failure, further limiting local harvester access to clams.

Community Actions: Several initiatives have built local capacity, including a clam harvester project in 2005 that proved that reseeding clams was viable; some closed beaches were re-opened using collaborative information sources on water quality from CARP, Environment Canada, CFIA, DFO, and the clam harvesters; the AWRC was re-established; and the MRC played a role as facilitator.

Lessons: If public consultation processes established under provincial regulation had been followed in granting the aquaculture leases, this might have alleviated much of the local frustration and led to different outcomes. Local communities can and do develop effective and timely IM processes but require support from government to address the issues adequately.

#### Mi'kmaq Confederacy of PEI, Malpeque Bay Integrated Management Plan

**Problem:** Malpeque Bay has been crucial to food harvesting, transportation, and recreation for PEI First Nations for thousands of years. More recently, the increased and varied use of Malpeque Bay has resulted in conflicts between tourism operators, aquaculturists, fishers, and others who rely on the Bay for their livelihoods or for economic development. While the region's oyster fishery depends on Malpeque Bay for most of the production of spat (juvenile oysters), environmental problems are increasing. Calls for expanded aquaculture in the bay will impact First Nations food and ceremonial fishing rights, and may be untenable given environmental problems.

**Regulatory Powers:** the federal DFO, Environment Canada, and Transport Canada, Indian and Northern Affairs Canada, and the CFIA; provincial Department of Aquaculture, Fisheries and Rural Development, and Department of Environment.

**Local IM Institutions:** The MCPEI is a not-for-profit tribal council and provincial territorial organization (PTO) for Lennox Island and Abegweit First Nations. The MCPEI board of directors created the Integrated Resource Management Directorate (IRM), one task of which will be to direct progress on the development of an IM plan for

Malpeque Bay. This includes identifying resources and stakeholders in the Bay, and collecting resource use data in the surrounding area.

Community Actions: The MCPEI undertook a survey of the historical resource use of the Mi'kmaq of PEI, including interviews and mapping of traditional Mi'kmaq resource sites. This began the process of defining a common vision for the Bay, which includes all community members, both First Nations and other stakeholders. A film is being produced to capture this vision and bring it to a larger audience.

Lessons: Developing an integrated plan for Malpeque Bay has proven challenging, as each group (government, non-governmental organizations, communities, non-Native fishers, and tourists) has specific ideas of what constitutes proper and sustainable use of Malpeque Bay. Government departments use their mandates to compartmentalize management effectively. An integrated approach to coastal management requires a leadership partner to encourage participation by all stakeholders, and to engage in positive steps toward successful attainment of the goal of IM.

#### Analysis: Community Engagement in Integrated Management

The case studies described above reflect a range of experiences and of unique grass-roots perspectives of people who work to build community-centred IM institutions. We have documented a growing sense of urgency in communities, as declines in vital resource stocks and increasing environmental degradation affect livelihoods. Integrated management institutions and responses must develop more quickly and be built on a foundation of community support, if IM is to make a real difference to sustainability.

We see many instances of communities that recognize the value of IM processes and seek to initiate them. However, it is difficult for communities to take on such a leadership role, or for community-initiated processes to result in formal IM institutions. For example, in the case of the Saint John Harbour, fishers sought to have proper IM mechanisms put in place, but despite some progress on specific issues, through ad hoc committees, integrating this into a formal IM process has yet to occur. It needs to be recognized that good leadership, no matter where it comes from, is vital to a successful and sustained IM process, and that sometimes that leadership is to be found in local communities. Indeed, while institutional progress is often slow, there are local success stories. As noted in the case studies above, we have seen a diverse range of community-driven responses to local problems.

The experiences of our coastal community partners with IM demonstrate the linkages, or lack thereof, between efforts to address local problems by civil society, on the one hand, and policy development and implementation within governments, on the other. These experiences also highlight the need for better linkages between communities and governments with respect to the IM ingredients and processes that are valued, and the outcomes expected from IM (Wilson and Wiber, in press). This implies that if the potential of Canada's Oceans Act and similar legislation is to be realized, and implemented in a way that furthers the sustainable and equitable use of Canada's coastal and ocean resources, the disconnect between policy and public expectations must be addressed.

Our research on coastal experiences in the Maritimes has led us to a set of four major insights from a community perspective to rectify shortfalls in how IM is implemented.

#### A Focus on Community Participation as an Essential Element of IM

A participatory approach to IM clearly requires careful consideration of who should be involved, how they should be involved, and how to support involvement. It is desirable to begin with broad community participation. At the same time, governments need to recognize the difference between types of stakeholders; indeed, the term "stakeholder" is not well received from a community perspective. Planning must

begin with those most directly affected, so "community" and "First Nation" become the important participants for most planning purposes.

## **Incorporating Community** Values into IM

Communities want long-range planning for alleviation of poverty, priority for local needs, and recognition of their rights to access local resources. This implies close attention to "ecosystem/food-web" connections that exist between vital components of the ecosystem and community livelihoods. Further, within communities, the total life cycle should be considered in protecting livelihoods, so people old and young have options in terms of phasing in or out of the process.

## Providing the Legal Space and Local Necessities for Effective IM Institutions

As a fundamental prerequisite, legal space must be made for integrated management. Sometimes, this will require changing existing legislation; other times it will require enabling legislation. The IM planning institutions should accomplish the following:

- Create space for deliberative debate in planning, to help overcome community "push back" that arises when planning is imposed from above without considering local needs and values.
- Take a long-range perspective on inclusivity (e.g., the recognition and authorization of local and First Nation rights), and focus on creating

- a level playing field for participants so economic or political clout does not have a disproportionate voice.
- Aim for healthy linkages between community and ecosystems, and include a mechanism to have someone who speaks for the ecosystem; identify potential risks and risk elements, carrying capacity issues, and cumulative effects.
- Develop effective mechanisms for incorporating place-based knowledge into the planning process and for sharing information to facilitate "co-learning" (e.g., through public meta-databases and forms of university-community collaboration).

## Reflecting Multiple Scales in IM Governance

It is important to consider multiple spatial scales in IM. While there may be a tendency to take on large areas (such as large ocean management areas), these may seem too large and lacking in focus when viewed from a local scale. Focusing instead (or in addition) on specific localities and specific problems can improve the efficiency of IM initiatives. Examples include dealing with land-based pollution that affects streams and beaches in the Annapolis Basin, or better planning for Saint John harbour. The "scaling up" of smaller, more focused initiatives, and IM institutions, to the regional and national level should be encouraged, potentially through suitable councils or other deliberative bodies. The resulting crossscale linkages need to work effectively, since communities are keen to see the resolution of jurisdictional quagmires.

# **Community-Focused Ingredients for Effective IM**

Several key issues have emerged among the Coastal CURA partners as crucial to moving IM forward. First, it became obvious that reducing conflict and ensuring environmental sustainability could not come at the expense of local level benefits or the loss of social equity among users of public resources (Cicin-Sain and Knecht, 1998: 129). Second, community partners feel that to avoid inequitable outcomes, IM must be a collaborative process where actors negotiate public policies based on multiple criteria and participatory decision making for a given coastal or marine ecological area (Turner, 2000). Increasingly, the Coastal CURA team saw this process as involving the Canadian public in discussions of value systems and objectives that any planning exercises would then promote (Keen and Mahanty, 2006: 502).

## Community-Focused Values and Attributes of IM

The Coastal CURA sought to address key questions in relation to what is meant by IM: What does IM look like in practice? What are the desired outcomes? How do you measure IM progress? As one exercise, we focused on those elements that best describe key values that should drive IM as well as key process attributes. These elements are listed below, expressed in the powerful language of our community partners, who both articulated these attributes and grouped them under themes of values, governance, management decision making, and outcomes.

- Values: Intergenerational respect; building consensus; deeply informed by Indigenous perspective; placebased; community as advocates not clients; inclusive; respect for human rights; consideration for all stakeholders' values; food security.
- Governance: Reclaiming local authority; driven by community values; community-level dialogue; learning centred; co-operative; selfgovernance; deep democracy.
- Management Decision Making:
   Relying on open communication with users; co-ordination; conflict resolution; keeping in mind "who benefits"; adaptive; protects what is good; includes resistance and political work; works with alternatives.
- Outcomes: Healthy and safe ecosystems and communities/ people; less conflict; ecological sustainability; regional resilience and complexity/diversity; economies for the people; transformative change.

## **Community-Focused Vision** of IM

Given the above, the Coastal CURA developed a view of IM as a four-step process that allows for initiatives by both community and government.

1) Identify important values to be protected in the management process (e.g., local benefits, food security, regional economic and ecosystem health, consideration for all stakeholder's values).

- 2) Empower debate at the local level, through a deeply democratic process, and including the voices of all stakeholders (not just the powerful).
- 3) Generate decisions and plans that are mindful of disruptive or cumulative impacts, address conflict (rather than sweeping it under the rug), and rely on open communication.
- 4) Result in resilient, ecologically viable, sustainable human and ecological communities in a way that is transformative and supportive of healthy local communities (e.g., by improving well-being, ecosystem health, diversity, and resilience).

#### **Conclusions**

While the Canadian government has made global and national commitments to IM, implementation to date has not produced the desired results. The Coastal CURA team has identified several barriers or limiting factors to community participation in IM, as described in this paper (see also Kearney et al., 2007). Among the underlying issues is the fact that government and community seem to operate on different temporal scales (government IM is slow while community needs are immediate), often on different geographic scales (large, administrative space versus local place based), and with different purposes (co-ordinating intra/governmental processes and managing conflict versus addressing local ecological and social inequity and ensuring access to resources). Other challenges include lack of brokers between community-level and government-level processes; in other words, troubles in "scaling up" to government and "scaling down" to community. Finally, the concept of community itself is an issue. If community is seen (wrongly) as something outdated and inefficient, it can be an uneasy fit with modern planning initiatives.

Integrated management is inherently value driven. Since values are not universal, any values underlying IM should first be made explicit, then articulated and debated. This is the core argument of deliberative democracy. We need to build (or support) the institutional settings for IM where this deliberation and debate can happen. To ensure that communities are at the centre of this renewal and implementation of IM, we propose that IM initiatives recognize the ingredients we have outlined in this document, notably support for a community-focused vision together with community-focused values and indicators of success. Particularly important is adoption of the four-step IM process outlined above, which needs to incorporate the four key insights needed to support community involvement in integrated management:

- a focus on community participation as an essential element of IM;
- incorporating community values into IM;
- providing the legal space and local necessities for effective IM institutions; and
- reflecting multiple scales in IM governance.

These considerations all support the key message of this paper: a call to achieve the broad potential of the IM concept, particularly the potential for inclusivity and the active involvement of communities. It is clear from our research that feasible IM mechanisms can involve communities that have their own valid conceptions of IM and undertake successful IM-oriented projects at a local scale. The Coastal CURA, in continuing its work to support community involvement in IM, will be undertaking participatory research, capacity building and knowledge transfer, film-making, community participation techniques, community geographic information systems, comparative case studies, and the development of an appropriate set of indicators of success in IM. In the course of this work, we look forward to engaging, as individuals and as a team, with government departments and others, across agencies and communities, and across horizontal and vertical boundaries.

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