Calling for Integrated Management of Saint John Harbour

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Abstract

The Canadian port city of Saint John, New Brunswick, has many management challenges, including expanding petrochemical development, international shipping, tidal power, and tourism. The harbour area is also affected by 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. In the midst of this remains an important inshore fishery. Mitigating environmental impacts and juggling the multiple uses of the harbour requires effective integrated management institutions. Jurisdictional overlaps are part of the problem, with several federal, provincial and municipal agencies producing fragmentary management efforts. While the 1997 *Oceans Act* promised integrated management and a stronger role for stakeholders, many feel that over ten years have passed without any progress. This paper discusses the concerns of one such group, the Fundy North Fishermen's Association, which has been central to the formation of a number of *ad hoc* committees to address specific management harbour issues, including: dredging, post 9-11 wharf restrictions, liquid natural gas terminal development, and expanding harbour traffic. They have undertaken planning and research, participating in environmental impact assessments, developing monitoring protocols, and evaluating tugboat and shipping damage to fishing gear and subsequently to lobster stocks. In these activities, Fundy North has experienced frustrations created by the existing consultation process, in which there are unclear channels of responsibility and authority.

Preliminary analysis by the Coastal CURA team suggests that strong government leadership is needed to establish an integrated planning board that will facilitate harbour planning and operations. This paper argues that new policy initiatives can be guided both by the experiences in Saint John harbour and by best practices from elsewhere.

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Introduction: ICM and Seaport Management

International seaports present one of the most difficult challenges facing integrated coastal management (ICM) today. Significant environmental, social and political challenges are intrinsic to seaports, given their industrial nature, and situated as they are at the mouth of important watershed systems (Dawkins and Colebatch 2006). Exponential growth in seaport infrastructure and activities, taken together with coastal gentrification, has everywhere challenged the capacity of local managers to produce sustainable, green, participatory, and well-integrated management plans that can respond to global environmental challenges[3]. Recent anti-terrorism regulation has only added to the complexity of their task (Stasinopoulos 2003, Goulielmos and Anastasakos 2005). And yet, a survey of seaport governance literature demonstrates that management capacity has not kept pace with this unprecedented growth of management challenges (Brooks 2004, Sherman 2002, Thom and Harvey 2000, Van Gils and Klijn 2007, Wakeman and Themelis 2001). One interesting lacuna is the role that fisheries play in a number of important international harbours around the world; in the little literature that does exist on integrated management of international harbours, the integration of fisheries into management plans is noticeably absent. It would appear that in terms of seaport integrated management 'best practice', there is opportunity for global leadership for those who move to address international harbour management issues now.

Integrated Coastal Management and the Coastal CURA

Integrated coastal management (ICM)[4] has become the primary mechanism for addressing those critical environmental, economic and social challenges that face coastal communities and resource users (Cisin-Sain and Knecht 1998). Since the 1992 Rio Declaration flagged ICM as vital to sustainable development and to environmental protection[5], a great deal of research around the globe has demonstrated that wide public participation is the key to success (Tobey and Volk 2002:290). However, as Gibson

[3] See Thom and Harvey 2000 on the four triggers for 20th century reform of coastal management.
[4] Integrated management in the coastal zone is also referred to as Integrated coastal zone management (ICZM), Integrated coastal and oceans management (ICOM) or Integrated coastal management (ICM). While there are differences between them, in this paper, we have opted to standardize with ICM.
[5] See http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=78&ArticleID=1163

(2003) has pointed out, no EU nation states have yet enacted legislation to enforce integrated management, much less created institutional arrangements for wide public participation. In the Canadian context, ICM is mandated under the *Oceans Act* (Government of 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. Despite DFO leadership, ICM has been slow to develop in Canada (see Guenette and Alder, 2007; Kearney et al. 2007). There is a need then to develop capacity at all levels to be involved in integrated management institutions.

The Coastal CURA[6] is a five-year project to build the knowledge and capacity across the Maritimes, needed to support community initiatives and community involvement in ICM. The Coastal CURA supports the ecological, social and economic well-being of coastal communities, through cooperative research and capacity building on coastal and ocean management, and on community-oriented governance of coastal resources. The Coastal CURA involves eight partners – two universities (Saint Mary's University and the University of New Brunswick) and six community partners (the Fundy Fixed Gear Council, Acadia First Nation, Bear River First Nation, the Fundy North Fishermen's Association, the Bay of Fundy Marine Resource Centre and the Mi'kmaq Confederacy of PEI, which includes Lennox Island First Nation and Abegweit First Nation). The Coastal CURA is undertaking a number of research initiatives relating to local-level use and management of fisheries, coasts and oceans. These include both site-specific studies and broader policy-level research[7].

The Saint John Harbour Case Study

One of the Coastal CURA partners, Fundy North Fishermen's Association, has members that fish in Saint John Harbour, and the harbour has served as a case study into ongoing ICM efforts in the Canadian Maritimes. Saint John is one of the largest cities in the province of New Brunswick, with approximately 122,389 people residing in the Greater

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[7] For additional information see: www.coastalcura.ca.

Saint John area. While it is an industrial city, with interests in oil, forestry, shipbuilding, media and transportation, Saint John has suffered an economic downturn for several decades (especially with the collapse of the shipbuilding industry) leading to population declines. Recent economic growth, particularly in the petrochemical industry, has begun to reverse this trend. The Irving companies are major employers in the region with businesses including eastern North America's first deepwater oil terminal, a pulp mill, a newsprint mill and a tissue paper plant. Canaport LNG, a partnership between Irving and Repsol YFP, is constructing a state-of-the-art liquid natural gas receiving and regasification terminal in the city, the first in Canada, which will deliver gas to both Canadian and US markets.

The Port of Saint John is situated at the mouth of the St. John River on the north shore of the Bay of Fundy and is ice-free year-round. The port handles a wide range of traffic, including liquid bulk, dry bulk, forest and petrochemical products, containers, general cargo and cruise passengers. It handles an average of 27 million metric tonnes of cargo annually and is one of Canada's key ports. As an international seaport, it is an important part of the regional infrastructure, providing close to 3,000 direct and indirect jobs. It is essential to the province's petroleum, potash, forestry, tourism industries and to its import and export trade. It is also essential to the livelihoods of a number of fishermen who fish the waters inside the harbour. Fishing has historically been practiced alongside industrial activities in the harbour, but recent expansion of petrochemical and construction shipping has seriously challenged this coexistence.

International Regulation of Seaports

Since the mid-1950s, the regulation of international shipping has increasingly fallen under the control of international regulatory bodies. The International Maritime Organization (IMO) is the most important of these, and is a specialized agency of the United Nations, established under a Convention adopted in Geneva in 1948. The IMO's main task has been to develop and maintain a comprehensive regulatory framework for shipping and it addresses safety, environmental concerns, legal matters, technical co-operation, maritime security and the efficiency of shipping. Among other matters, signatory nations agree to maritime safety conventions for international ports. This has

brought international standards into harbour management, especially as relates to traffic lanes, and to the interaction of shipping and fishing vessels.

For example, Rule 10 of the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (hereafter COLREGs), notes that fishing vessels "shall not impede the passage of any vessel following a traffic lane" but are not banned from fishing. This is in line with Rule 9 which states that "a vessel engaged in fishing shall not impede the passage of any other vessel navigating within a narrow channel or fairway."[8] The IMO also regulates which vessels can utilize inshore waters and a complex system of shipping lanes and signaling systems in international seaports.

When the September 11th US terrorist attacks highlighted security issues, the US called on the IMO to institute global shipping security measures (Sokolsky 2005:36). In 2004, a diplomatic conference adopted a number of amendments to existing IMO regulations (1974 SOLAS), among them, requirements for the completion and approval of port facility security assessments and plans[9].

In the past, Canada made representation to the IMO that its system for updating or creating conventions moved too slowly for technological changes in the shipping industry; the IMO responded by instituting a 'tacit acceptance procedure' that can move amendments of a technical nature through more quickly. More recently, a coalition of government, fishing, oil and tourism industries, environmental groups and marine scientists applied to the IMO to modify the Bay of Fundy Traffic Separation Scheme (shipping lanes) to protect endangered right whales feeding in the Bay[10]. These changes were approved by the IMO and implemented by Transport Canada in 1983. While this regulatory change was effective, it was also time consuming and required the combined efforts of national and international agencies. As this article will demonstrate, the effort required may have set up a chill mechanism within Canadian bureaucracy.

Another level of bilateral regulation has been undertaken to promote North American security following the events of 9/11 (Sokolsky 2005). As Sokolsky notes, this has primarily taken the form of collaboration between Canada and the US on shipping and port security, and by the 2004 formation in Canada of the Marine Security Operation

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[8] See http://www.imo.org/ accessed February 2009

[9] For the full text of SOLAS see https://www.imo.org/, accessed February 2009.

[10] See http://www.rightwhale.ca/shippinglanes-routesnavigation_e.php, accessed February 2009.

Centers (MSOCs) to promote interagency cooperation. In part, these bilateral cooperative efforts are in support of the IMO's International Ship and Port Facility Security (ISPS) Code, which also took effect in 2004. As Stasinopoulos (2003) has argued, while 9/11 revealed the "soft underbelly of globalization", subsequent US moves to enhance homeland security often reflected "US 'hegemonic' ambitions and unilateralism in maritime trade". Given Canada's economic reliance on trade relations with the US, port security has been criticized as speedily undertaken without due public consultation in order to satisfy our dominant trading partner. IMO security regulations have been similarly criticized (Goulielmos and Anastasakos 2005, see also Cowen and Bunce 2006).

The Canadian Regulatory Scene

Under the Canada Marine Act (1998), Canada began a major reorganization of its port system (Sherman 2002). A total of 353 of 549 harbour and port facilities across Canada were transferred (to provinces, private enterprises or local interest groups), demolished, or decommissioned (ibid). Among the remaining ports, 18 independently-managed Canadian Port Authorities (CPAs) were established to operate particular ports on behalf of the Government of Canada[11]. CPAs are neither public nor fully private organizations (see Brooks 2004). They possess the power to engage in activities related to shipping, navigation and transportation of passengers and goods, may be given Crown land to operate and manage (but not to own), and may acquire and own land in their own name. However, Transport Canada (including Marine Security Regulatory Affairs) is responsible for ensuring that CPAs conduct their affairs in accordance with the provisions of the Canada Marine Act, the Port Authorities Management Regulations and the Port Authorities Operations Regulations, as well as the provisions set out in their Letters Patent. Letters Patent are issued by the federal government to grant port authorities the right to operate a particular port. In 1999, a Canada Port Authority was authorized for the port of Saint John. But national regulation of the Saint John harbour is also impacted by a number of other agencies, including Industry Canada, the Department of Fisheries and

[11] Together these accounted for over 60 percent of Canada's waterborne general cargo (Sherman 2002:6). Other ports have subsequently applied for CPA status.

Oceans, provincial departments of tourism, agriculture and aquaculture, fisheries, transport, industry and environment, as well as municipal authorities.

Issues and Problems – The Fundy North Fishermen's Association and Petrochemical Expansion

As with other international ports, Saint John harbour might be said to be over-administered and under-governed (see Dawkins and Colebatch 2006). The larger Saint John Harbour area has long been a catchment basin for the most heavily industrialized area in the province, affected by anthropogenic influences ranging from agricultural and forestry run-off, pulp and paper mills, textile plants, the oil refinery, a brewery, freighter and cruise ship terminals, harbour dredging and dredge dumping, as well as raw municipal sewage outflows (in excess of 6 million litres per day – see Vickers 2006). Natural science research has helped to understand these anthropogenic impacts (see Zitco 1997, Hargrave et. al. 1997), but mitigating them requires better understanding of and management tools for social and economic behaviour and decision-making (see Berkes et. al. 1998).

While some environmental challenges have been addressed to a limited extent through the existing environmental impact assessment (EIA) processes and through federal and provincial initiatives in integrated management, progress has been disappointing for many stakeholders. Integrated management promised a much stronger role for them in the planning process (Bastien-Daigle et al. 2008), but in fact, many stakeholders feel that their involvement is tokenism, and both sustainable development and the precautionary approach remain ideals rather than practical outcomes of the process (see Kearney et. al. 2007). In addition, public consultation has not always produced good local understanding of or local support for new initiatives, creating divisiveness rather than consensus (see CBC online news, 2007).

The capture fishery has played a significant role in the local economy since before European contact, and remains an important economic generator for most coastal communities. As a result, Fundy North Fishermen's Association is one stakeholder group that has been involved in public consultation for many of the new developments in the region. For example, as many of their members fish in the greater Saint John

Harbour, they are interveners in the environmental impact assessment for the Eider Rock Oil Refinery project, particularly with respect to the potential impact of the project on the inshore fishing industry and local ecology. They have worked for several years with the DFO and Environment Canada to assess the impact on migrating lobsters of harbour dredging and of the dredge dump site off Black Point. In 2008, work began to develop a management plan and monitoring protocol for the dumpsite in addition to the establishment of a formal committee to address the issue. In the Post-9/11 security environment, the Saint John Harbour Authority unilaterally denied fishermen access to the wharf facilities in the port city, and Fundy North has been working with harbour authorities to develop alternatives. As part of the HADD (Habitat Alteration, Disruption or Destruction) program as compensation for damage that occurred with the construction of the Canaport LNG terminal, they undertook a ghost trap survey to find and assess the lobster mortality rates in traps lost as a result of tugboat and shipping damage to fishing gear.

In all of these activities, the Fundy North membership has experienced first hand the frustrations created by the existing stakeholder consultation process. While a great deal of academic research is contributing knowledge vital to resolving marine and coastal environmental issues, often there is a disconnect between coastal and marine planning and the knowledge arena. Part of this disconnection problem lies in the workings of the planning institutions – into which stakeholders and the public are invited, but in which little attention has been paid to knowledge transfer. As a result, stakeholders often come to the table determined to protect their own economic interests, and with little knowledge or understanding of broader issues. A single holdout stakeholder can scuttle innovations and responsible management. This has proven disastrous to environmental stewardship and to good management.

In 2007, Fundy North supervised a Coastal CURA Masters student who developed a film to illustrate the planning problems in Saint John Harbour (Bood 2007). Industrial development in the harbour has created spatial conflicts, with increased tanker traffic and other activities, especially as a result of the expansion of the petrochemical industry. The larger Saint John Harbour itself is facing new and increasing planning pressures linked to global issues (see Vandermeulen 1996), including a growing tourist

presence that includes everything from cruise ships to pleasure craft, all occurring within a new restricted security environment (see Cowen and Bunce 2006).

In order to address expanding management problems, several *ad hoc* committees have been formed in the past few years, including: the Harbour Traffic Committee, the Dredge Dump Working Group, the Saint John Wharf Committee, and the Canaport LNG Community Liaison Committee (Fundy North Fishermen's Association serves on all of these). However, planning and management remains ineffectual with no overarching or coordinating authority, as committees have no real authority, there are often long periods between meetings when momentum is lost, and no government agencies have taken responsibility for carrying ideas into action. Transport Canada, for example, has argued that it would be difficult to improve marine traffic lanes to avoid fouling fishing gear, as the IMO presents a significant hurdle to adapting shipping lanes. There are currently no initiatives to improve spatial planning of the sort common in other international ports (see for example, van Gils and Klijn 2007) and despite marine spatial planning initiatives elsewhere (see Maes 2008). This is leading to significant environmental consequences – as was demonstrated this summer with the ghost trap survey undertaken as part of the Canaport HADD program.

In order to address these and other environmental challenges in southwest New Brunswick, we believe that evidence-based ocean and coastal policy must make better and more informed use of all available knowledge. And new thinking must be brought to bear on the institutions that will be required for effective integrated management. But to date, no regulator has agreed to take responsibility for resolving these problems.

Lessons Learned: ICM and the Harbour

Several recommendations have come from local users as to management solutions in Saint John Harbour. Fundy North Fishermen's Association has suggested one government agency must take the lead in establishing an integrated planning board that will facilitate harbour planning and operations. They themselves have taken the initiative to resolve issues on a case by case basis with ad hoc committees. However, the ICM literature also suggests that new management institutions and policy initiatives be guided

both by the local specificities in Saint John harbour and by best practices from elsewhere (Allan and Curtis 2005, Stojanovic et al. 2004). Stojanovic et al. (2004:290) in particular have suggested that nine factors contribute to successful ICM, including management that is: participatory, long-termist, focused, incremental, adaptive, comprehensive, precautionary, co-operative, and contingent. What this means in practice, however, is unclear.

A recent article on harbour management innovations in Sydney Harbour, Australia may provide some answers (Dawkins and Colebatch 2004). Institutions are said to rest on three mutually interactive supports: a shared framework of meaning, underlying values and an organizational focus. In terms of Sydney harbour, Dawkins and Colebatch demonstrate that agencies and stakeholders had diverse values, although shared values did exist. While different actors agreed on the need for joint action in the interests of the harbour, they operated under different meanings of this need, and some were more interested in cooperating than others (particularly officials as opposed to the users). What was needed in this case was government leadership in the constitution and maintenance of the network, followed by "managerial craftsmanship" to support framing, activation, mobilisation, and synthesizing of a harbour management approach.

The innovation of a harbour manager in Sydney created one policy entrepreneur who was dedicated to overcoming silo bureaucratic structures and lack of communication between agencies. But it must be added that this required the right conditions. In the case of Sydney's harbour master, no new levels of power or institutionalization were put in place. Indeed, Dawkins and Colebatch report that the harbour manager in Sydney saw no need for special powers, as he was afraid that these would have stepped on bureaucratic toes, saddled him with routine functions, encouraged agencies to limit interaction with him to the specified activities under his control, and kept the focus off the big picture. Instead, he focused on changing perceptions and relationships – in the Coastal CURA we have called this sort of initiative "co-learning". Over three years, his office used the small resources under their control to identify needs and opportunities, develop tools, strengthen partnerships, foster collaboration, develop new ways of working and provide models for innovation (others have called this approach "interactive governance" – Bavinck et al. 2005). In the Sydney Harbour case, this innovation was so successful, that

when the state government allowed the position to lapse after three years, the process of collective management that had developed was formally recognized, and core agencies collaborated together to keep these operations going. As Dawkins and Colebatch (2004) note, policy in this scenario is less and less a product of a central authority, and more and more made in a process involving a plurality of both public and private organizations, and an outcome of continuing interaction between different sorts of organizations.

Conclusions

Canada prides itself on developing a leadership position in marine and coastal planning (see Rickets and Harrison 2007), implementing large ocean management areas (LOMAS) and marine protected areas, and experimenting with the institutions that will be required for sustainable utilization of coastal and ocean resources (as with the Eastern Scotian Shelf Integrated Management Initiative or ESSIM, see Walmsley et. al. 2007). However, much remains to be done, as the situation in southwest New Brunswick attests. While a great deal of academic research is contributing knowledge vital to understanding marine and coastal environmental issues, often coastal and marine policy and the knowledge arena are disconnected. Part of this disconnection problem lies in the workings of the planning institutions – into which stakeholders and the public are invited, but in which little attention has been paid to knowledge transfer or to co-learning. It should be no surprise then that stakeholders often come to the planning table solely to protect their narrow economic interests, and with little knowledge or understanding of broader issues, including environmental issues. The existing committees in Saint John Harbour have helped break down these barriers to understanding, but as people who have the authority to make changes are not present at the meetings, politics rather than sound planning is determining coastal and ocean management. Perhaps information gets condensed as it is sent further up the chains of command so that mechanisms for knowledge sharing are not creating the right policy changes. Meanwhile, science is predicting the collapse of our shared marine ecosystem (Worm et al. 2006). Best practice from other settings, taken together with the advice from ICM literature can do much to address these problems, but only if a lead agency or actor is enabled to address the core problems of lack of coordination in innovative ways.

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