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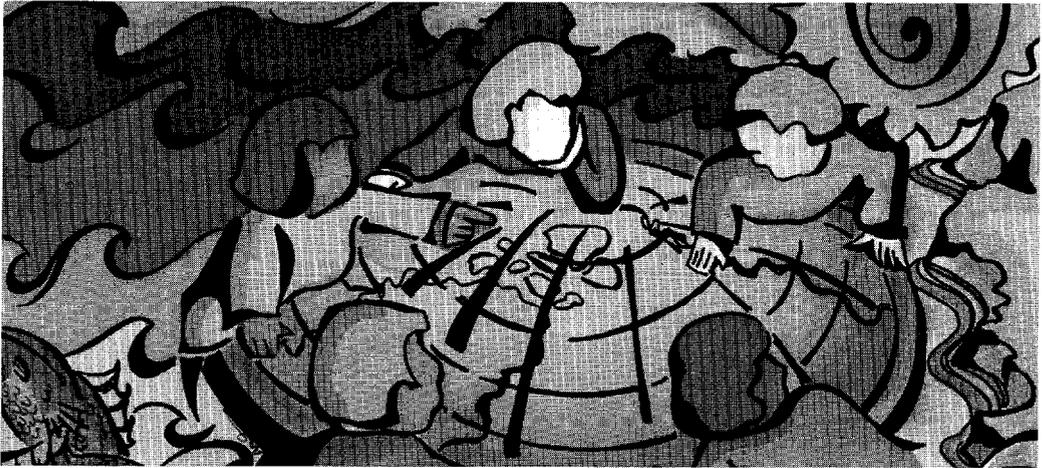


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sur l'environnement
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Sustainable Strategies for Oceans: A Co-Management Guide

By the National Round Table on the Environment and the Economy





Sustainable Strategies for Oceans: A Co-Management Guide

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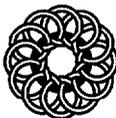


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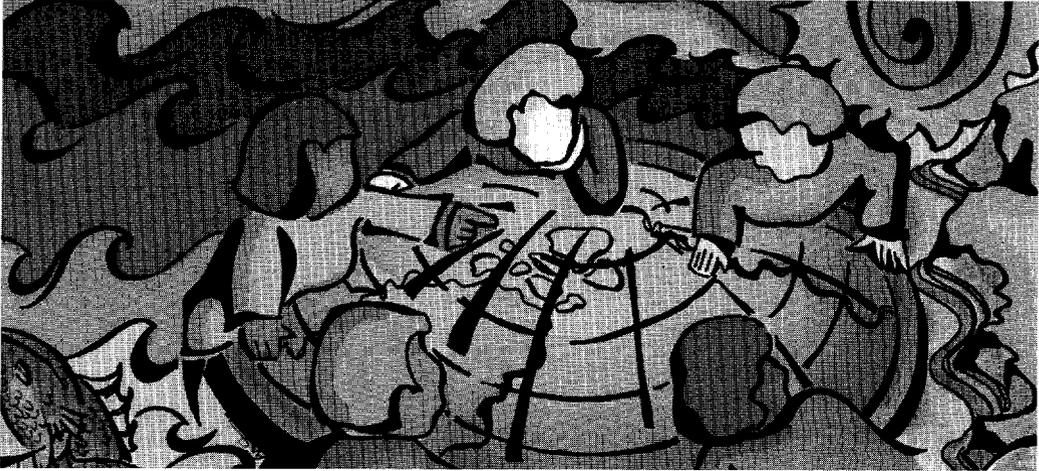
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The National Round Table on the Environment and the Economy is pleased to present this book as a further contribution to the greater understanding of the concept of sustainable development and its practical applications.



Table of Contents

A Message from the Chair	ix
Foreword	xi
Executive Summary	xiii
Chapter 1: Ocean Stewardship Is a Key Canadian Sustainability Issue	1
From Sea to Sea to Sea	1
The Work We Do, the Air We Breathe, the Water We drink.....	1
Our Source, Our Future.....	2
A Global Crisis, A Crisis at Home	2
The Need for Canada to Act	3
Chapter 2: The New Wave in Ocean Activity Management	5
The Oceans Agenda.....	5
Sustainability Concepts.....	7
Moving Toward Co-Management	10
Chapter 3: Defining Co-Management	12
What Is Co-Management?	12
The NRTEE’s Definition.....	14
The Legal Basis for Co-Management	14

What Are Co-Management's Potential Benefits?	19
Improving the Bay: A Hypothetical Case Study of Co-Management in Action.....	21
Conclusion.....	24
Chapter 4: The Road to Successful Co-Management Regimes	25
A Strong Supporting Institution	25
Effective Engagement of Stakeholders	27
Building Capacity.....	29
Conclusion.....	30
Chapter 5: Co-Management Issues to Be Resolved.....	31
Conclusions and Recommendations.....	36
Endnotes.....	38
Appendix I: Designing a Co-Management System	41
Guiding Principles for Evaluation: Is This Project Suitable for Co-Management?.....	41
Operating Procedures for Co-Management Processes	43
The Consensus-Building Tool.....	49
Endnotes	50
Appendix II: Co-Management Case Studies.....	51
Land Claims Agreements, Canada	52
Beaufort Sea Beluga Management Plan, Inuvik, Northwest Territories	53
Lofoten Islands Cod Fishery, Norway.....	54
Coastal Fisheries, Japan.....	55
Municipal Fisheries, Philippines	56
Bay of Fundy Herring Fishery, Canada.....	56
Management by Community Quotas, Sambro, Nova Scotia	58
Skeena Watershed Committee, British Columbia.....	59
Kuskokwim River Management Working Group, Alaska	60
Prince William Sound Aquaculture Corporation, Alaska	61
Chesapeake Bay Program, United States	62
St. Lawrence Vision 2000, Quebec	63

Great Barrier Reef Management Strategy, Australia	63
Pacific Fishery Management Council, United States	64
Stakeholders and Conservation in a West African Lagoon.....	65
The Fraser River Basin First Nations Memorandum of Understanding, Canada	67
Bras d'Or Watershed Stewardship Proposal, Cape Breton Island, Nova Scotia.....	68
Mafia Island Marine Park, Tanzania.....	68
The Gwaii Haanas Agreement, South Moresby, British Columbia.....	69
Cree Subsistence Fisheries, James Bay, Quebec.....	70
Community Management in the Maine Lobster Industry, United States	71
Appendix III: List of Participants	73
Appendix IV: List of Acronyms.....	80
Bibliography	82



A Message from the Chair

Crisis in both the east and west coast fisheries, contaminants in Arctic waters, the unusual extent and intensity of El Niño, and the unknown impact of climate change illustrate the urgent need to develop sustainable management strategies for our oceans. It is within this context that I am pleased to introduce *Sustainable Strategies for Oceans: A Co-Management Guide*.

This National Round Table on the Environment and the Economy (NRTEE) Task Force was established because of concern that existing systems of oceans management are not working. The implementation of sustainable development strategies for our oceans requires a fundamental change in the nature of the relationship between government and resource users. Co-management offers us the opportunity to move management closer to the people, and specifically to harness the talents and experience of stakeholders in the search for ocean management solutions.

This guide is based on the discussions and collective knowledge of round table participants. It also draws upon current Canadian and international research dealing with co-management theory and application. It is our hope that the discussion and conclusions presented here add value to ocean policy development and support the effective engagement of a broad range of stakeholders in the care of this precious resource.

Stuart L. Smith, M.D.
Chair, NRTEE



Foreword

In recognition of problems in the ocean environment and the ocean economy, and in support of government initiatives to address these problems, the NRTEE established a Task Force on the Ocean Environment and Resources. The Task Force determined that to reverse the trend toward unsustainability, new management arrangements are necessary. These new arrangements will work best if they actively engage the stakeholders and resource users who are most affected by unsustainable practices. The focus of the Task Force's work became the application of co-management to ocean management issues.

Sustainable Strategies for Oceans: A Co-Management Guide, the product of the Task Force's work, resulted from extensive consultation with stakeholders on this application of co-management to oceans management. True to the stakeholder process, this guide mirrors stakeholder discussions and places an emphasis where stakeholders focused their concerns — on fisheries, for example.

The discussions that formed the basis for the guide were held across Canada. To gener-

ate debate among as many stakeholder interests as possible, the Task Force convened round tables, participated in major gatherings of experts and co-managers, reviewed existing co-management knowledge and experience, and established an Internet dialogue group. Round tables were held in Rimouski, Quebec, at Coastal Zone Canada 96; in Steveston, British Columbia; in Montreal at the International Union of Conservation and Nature (IUCN) world conference, and in Ottawa in conjunction with Rio + 5 preparations. These round tables culminated with a national round table held in Ottawa. Members of the Task Force were keynote speakers and active participants at the Sustainable Fisheries Conference in Victoria, at the first meeting convened by land claims co-managers in Yellowknife in 1996, and at the September 1997 Summit of the Sea in St. John's, Newfoundland.

Sustainable Strategies for Oceans: A Co-Management Guide is geared to everyone interested in the economic and ecological future of our oceans. The guide introduces the

new wave in ocean activity management via a primer on national and international initiatives. It explains key concepts of sustainable development and their relationship to co-management. It examines the characteristics of successful co-management regimes and addresses unanswered questions related to the application of co-management. Case studies are provided as potentially helpful models for stakeholders when deciding which co-management arrangements might work for them. Finally, the guide provides a checklist to help stakeholders evaluate the co-management potential of a project, plus step-by-step operating procedures for a co-management system. It augments this practical advice with a summary of NRTEE consensus-building guidelines.

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Executive Summary

The world's oceans are suffering serious environmental stress, and this environmental stress has economic consequences. The upheaval caused by the collapse of the east coast ground fishery and ongoing turmoil in the management of west coast salmon are local examples of a phenomenon affecting fisheries all over the globe. The abnormal recurrence of El Niño in consecutive years, the detection of increasing levels and varieties of toxic contaminants in Arctic waters, uncontrolled ocean dumping, and dire predictions of an ocean level rise as a result of climate change have created public concern that the systems in place are inadequate either to protect ocean environments or to manage ocean activities sustainably. Taken together, these issues highlight the need for ocean policies that promote economic development and long-term environmental health at international, national, regional, and local levels.

Recognizing that ocean and coastal policies at every level are interconnected, the nations of the world have been active in international efforts to manage and coordinate

ocean activities. These international efforts have included, for example, the 1982 United Nations Convention on the Law of the Seas (UNCLOS), which entered into force in 1994, and the United Nations Fisheries Agreement (UNFA), adopted at the United Nations Conference on Straddling and Highly Migratory Stocks in 1995. At the same time, Canada has also made progress in efforts to implement national policies that manage ocean activities according to the principles of sustainable development. Canada's new oceans agenda, major components of which include the *Oceans Act*, proposes new fisheries laws and other legislation aimed at revising marine services and port management; it represents the most comprehensive shift of vision in ocean policy since the 200-nautical-mile fishing zone declaration in 1977.

The goals in ocean activity management have changed — oceans must be managed sustainably — and so must the mechanisms for achieving these goals. But new rules and regulations are not likely to achieve this on their own; indeed, the multijurisdictional nature of

emerging oceans issues is not, in many instances, well served by imposed regulations that do not blend ecological, economic, and social goals. Existing decision-making processes have also been criticized for lacking transparency, for working at cross-purposes with sustainability, and for being open to political influence at the expense of the long-term stability necessary to make business decisions. What is needed to reach sustainability is a fundamental shift in the relationship between government and resource users.

Co-management has the potential to deal with these two elements in oceans management: with the setting of authentic, sound sustainability goals, as well as the development of the means to achieve these goals. Co-management uses sustainable development, integrated management, and the precautionary approach to encourage more comprehensive ocean management by a broader base of stakeholders.

What is co-management? It is an arrangement whereby responsibility for resource management and ocean stewardship is shared between at least one government and those stakeholders who are applying an integrated approach to management, with the objective of maintaining the ecological integrity of the oceans. The balance among parties and the implementing structures can vary widely, and a co-management system may develop by degrees. But whereas all sorts of structures and degrees of responsibility-sharing are possible, the necessary co-management can also be defined very precisely through either legal agreements or administrative arrangements. By way of illustration, this guide includes case studies of existing co-management regimes in fisheries management, coastal zone management, marine protected areas, and watershed management.

Three legal issues will frame the structure of a co-management agreement. These include: the Constitution, delegation principles, and enforceability. Constitutional roles will inevitably dictate what can be negotiated and who must be at the table when establishing a co-management agreement. Delegation principles may create procedural requirements because, in some instances, authority to delegate must be expressly authorized in a statute. In addition, certain forms of delegation may not be available as options. Finally, questions may arise about the enforceability of some co-management agreements, due to principles of parliamentary sovereignty that preclude courts from enforcing contracts that try to bind successive governments. Especially when there is a mix of national and international considerations, enforceability will be an issue.

Co-management offers many potential benefits, among them the facilitation of a change in the roles and relationships of governments, the direct users of the ocean resource, and the broader public. Co-management may be able to avoid the fragmentation inherent in traditional regulatory management, where issues rather than ecosystems are addressed and management frameworks are separate from decision-making processes. Transparency and autonomy, as well as devolved decision-making, are much more likely to occur in a co-management arrangement. Because of its broader base of stakeholder participation, co-management creates more potential to tap local knowledge, to build upon the unique strengths of particular regions, and to respond appropriately to regional needs.

Despite these potential benefits, questions remain. How much will co-management cost? How long will co-management take, and

how will the interests of stakeholders be accommodated? Just how broadly can the stakeholder net be cast in formal agreements? Canadian co-management experience is limited. Because co-management has not been part of policy frameworks in Canada and therefore has not been evaluated using the usual policy analysis tools (cost-benefit analysis, etc.), more information is needed.

What we do know is that successful co-management regimes have several common characteristics: a strong supporting institution, effective engagement of stakeholders, and capacity-building mechanisms.

First, a competent and trusted supporting institution is necessary for long-term stewardship, for a co-management system will only be as good as the institution — the council, board or agency — charged with the implementation of the co-management program. That institution needs regulations to back it up and money from a variety of sources to operate. Second, for decisions to be sound and supported by the public, stakeholders must be identified and their economic, environmental and social values and aspirations taken into account. Much room for voluntary action is needed in a co-management arrangement, but

there must also be incentives if stakeholders are to participate. Broadly based stakeholder participation will be complemented and strengthened by effective public consultation. Finally, inasmuch as effective co-management requires that everyone get up to speed, co-management seeks to develop the capacity within people, communities, governments, and other organizations to recognize, document and resolve their own problems.

We also know that there are many practical steps that can be taken to support a co-management arrangement. Before co-management is implemented, its applicability to a particular issue or project must be evaluated against a number of criteria. Detailed operating procedures must be established. Guidance on these practical considerations is provided in this guide.

The NRTEE firmly believes that the time for oceans co-management is now. New co-management arrangements designed to help meet the oceans crisis and to implement our new oceans agenda will test the ability and will of all Canadians. Failure could mean a deepening of the global crisis at home. But success will undoubtedly result in a new wave of innovative, workable oceans management strategies.

The NRTEE Definition of Co-Management

For the purposes of this NRTEE guide, co-management is broadly defined as systems that enable a sharing of decision-making power, responsibility and risk between government and stakeholders, including but not limited to resource users, environmental interests, experts, and wealth generators.

Co-management, as it relates to oceans, is therefore an arrangement by which responsibility for resource management and ocean stewardship is shared between governments and stakeholders who are applying an integrated approach to management with the objective of maintaining the ecological integrity of the oceans. Co-management of oceans activities can include one or more of the following management rights and duties:¹

- policy making and evaluation — scoping problems, setting long-term objectives, research and education;
- ensuring the productive capacity of the resource — monitoring habitat, proven and viable enhancing or restoring of habitat, enhancing stocks;
- *regulating access to the ocean space and to ocean resources* — membership or exclusion, membership transfer, harvest allocation;
- regulating resource harvest — stock assessment, harvest planning, harvest monitoring;
- coordinating potentially conflicting resource use and management activities — sport, commercial and subsistence fisheries, harvest and enhancement activities, aquaculture;
- ensuring compatibility in use of ocean space;
- resolving conflicts through mediation or consensus decision making;
- enforcing or implementing rules;
- maximizing benefits to resource harvesters and sharing resource equity among stakeholders — supply management, quality enhancement, product diversity; and
- monitoring and disseminating information.



Chapter 1

Ocean Stewardship Is a Key Canadian Sustainability Issue

From Sea to Sea to Sea

Canada is, by any global benchmark, among the most maritime of nations. Geographically, Canada has the world's longest coastline. It is bordered by three oceans — the Atlantic, the Pacific, and the Arctic — and three distinct ocean environments. Canada's 200-nautical-mile Exclusive Fishing Zone, declared in 1977, and its 200-nautical-mile Exclusive Economic Zone (EEZ), affirmed in the new *Oceans Act* in 1996, are equivalent to 37 per cent of its land mass.²

Culturally, the oceans have contributed to the traditions and character of the Canadian identity. The development of distinct Aboriginal societies on all three coasts has been shaped by their surrounding ocean. From the earliest records of Aboriginal settlements to the arrival of the first Europeans, the oceans have set the stage upon which

Canadian history has been played. In fact, it was glowing reports of the bountiful oceans — Cabot's crew reported scooping up cod in baskets — and the quest for the promised ocean route to the Far East that accelerated the pace of development. Europeans prized the fish, whale, and seals they found in Canadian waters as much as the gold and silver of Mexico and the spices and silks of the Orient.

The Work We Do, the Air We Breathe, the Water We Drink

Canada's oceans are a source of wealth and centres of industrial activity. They provide a wide variety of products ranging from oil and gas to food and pharmaceuticals. Ocean-based economic activities include the fisheries, transportation, energy, recreation, aquaculture, ocean engineering, information technologies, mineral extraction, and disposal of wastes.

The oceans also purify our air and supply us with fresh water. They absorb between a third and a half of the carbon dioxide produced by the burning of fossil fuels and play a vital role in the hydrological cycle — the cycle of rainfall, runoff, evaporation, and condensation which replenishes the world's fresh water. Canada is a major beneficiary of this cycle, since we have over half the Earth's area of fresh water and almost a fifth of its volume.

Oceans regulate the Canadian climate, absorbing heat in summer and releasing it in winter. Global ocean circulation currents move tropical heat poleward from the equator and at the same time push cold water down from the Arctic in a continuous balancing act that has created our diverse and productive Canadian climate.

Our Source, Our Future

Life on Earth began more than three billion years ago in the oceans. Life forms on land did not appear until much later, about 400 million years ago.

Human life continues to draw sustenance from the oceans, which cover over two-thirds of the Earth's surface. For example, seafood is the main source of protein for nearly half the six billion people on this planet. Anti-leukemia drugs have been developed from sea sponges, bone graft materials from coral, toxin-testing compounds from horseshoe crabs, blood and anti-infection agents from shark skin. Although we have relied upon the oceans since time immemorial, we once thought them to be self-purifying and inexhaustible. We now know they are not.

The oceans, originators of life on this planet, are a finite resource in trouble. The threat is entirely of human origin.

A Global Crisis, A Crisis at Home

Human activity is seriously altering nature's balance. The dumping of all sorts of waste — from oil drums to nuclear waste, to ship ballast to just plain garbage — is fouling the ocean environment. Each year, sewage treatment plants discharge into the oceans twice as much oil as tankers accidentally spill. Plastics and other non-decomposing debris from Canada wash up on coastal beaches in Scotland. All over the world, clean-up costs, plus lost revenue from commercial activities, total many millions of dollars each year.

As the production of carbon dioxide and the dumping of garbage, sewage, and chemical effluents increase, the oceans' purifying and production capacity has been significantly compromised. Zebra mussels and many other foreign plants and animals from ballast water invade harbours and disrupt ecology deep into the freshwater system. Unnatural algae growth in coastal areas robs fish and other marine populations of oxygen. Shell fisheries close because of contamination by toxins in surrounding sediments. Traces of industrial chemicals and pesticides originating far to the south are found in Arctic marine mammals.

Activities that are intended to be exclusively land-based also have a huge impact. The byproducts of industry eventually work their way through the watershed systems into the oceans. The construction of dams, bridges, and roads, as well as poor logging practices and coastal urban development — 60 per cent of the world's population lives within a coastal zone and predictions are that this percentage will increase — disturbs natural drainage patterns and coastal ecosystems essential to ocean health.

Examples of the disturbing effects of land-based activities can be found right here at home. The Sydney Tar Ponds in Nova Scotia, our largest toxic waste site, makes the Love Canal look like a minor spill. As a mix of sludge, chemicals, and oil, the Sydney Tar Ponds is laden with at least 45,000 tonnes of PCBs. Inevitably, the deeply scarring effects of this legacy of the steel industry are felt in nearby coastal lands and waters. Meanwhile, on the other side of the country, urban sprawl in the Fraser Basin is affecting salmon populations.

All over the world, fisheries and marine protection policies are struggling to deal with the oceans crisis. Of the 17 major global fisheries areas, 14 are experiencing serious problems of overfishing.³ For almost 500 years, cod fishing off Newfoundland was a seemingly limitless source of wealth. It meant jobs, food, trade, and commercial support industries. Each year, fish were caught in greater numbers as the area attracted more and more fishers. But it all came to an end in 1992. In response to growing evidence that the fishing grounds were becoming exhausted, the Government of Canada closed the Newfoundland cod fishery.⁴ In an effort not to repeat the same experience on the west coast, Pacific salmon fisheries are undergoing a painful restructuring in response to symptoms of overfishing.

There are also warnings of an ominous future. Global climate change caused by the accumulation of human-produced carbon dioxide and other greenhouse gases may cause fluctuations in ocean temperatures and sea levels. For Canada, there could eventually be major implications. Predictions call for erosion and flooding in all of our three coastal regions, including heavily populated areas such as Vancouver, Prince Edward Island, and

St. John; a decline in fresh water quality as saltwater levels rise and change drainage patterns; and major impacts for marine biodiversity as ocean ecosystems change. Any effort to reduce greenhouse gas emissions will require the engagement and cooperation of governments and stakeholders worldwide.

The Need for Canada to Act

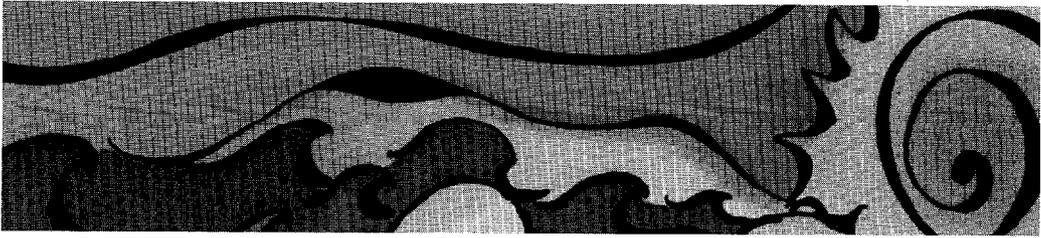
The NRTEE has identified the urgent need to address the environmental and economic implications of unsustainable practices that are degrading our oceans. This guide is about sustainable management strategies for our oceans and charting a new course for ocean stewardship. To ensure long-term health and productivity in the ocean environment, we need to treat the oceans like a precious resource. This starts with new approaches to the management of our activities in and around the oceans.

Current approaches have worked best against a backdrop that combines an effective regulatory framework, a clear perspective on the nature of the problem, and a cooperative spirit on the part of those using the oceans. Unfortunately, we have experienced many situations where one or more of these elements has been absent. The result has been failure of fisheries, serious pollution, limited success with coastal management, and an atmosphere of distrust among stakeholders.

It is encouraging that the federal government is making progressive efforts to implement policies that manage ocean activities according to the principles of sustainable development. These efforts include, for example, the coming into force in January 1997 of the *Oceans Act*. That Act establishes a framework for the development of a national

Oceans Management Strategy with stakeholder participation, and a proposal to introduce new fisheries legislation that could include provisions for co-management agreements with user groups. These new management arrangements will test the abilities of federal government departments to cooperate more effectively and to build new relationships with other levels of government and with resource users. Failure to do so will perpetuate the current limitations on effective coastal zone management, the apparent inability to manage fish stocks sustainably, as well as the inability to accommodate economic development and economic diversification strategies.

The NRTEE acknowledges that effectively engaging stakeholders in new management arrangements is an immense challenge. But the NRTEE also recognizes that the opportunities inherent in this challenge — the opportunity to move management closer to those most affected by management decisions, and the opportunity to mobilize stewardship actions at the local level — are necessary first steps on the path to sustainable management of our ocean environment and its resources.



Chapter 2

The New Wave in Ocean Activity Management

The Oceans Agenda

The International Scene

“National boundaries have become so porous that traditional distinctions between local, national and international issues have become blurred. Policies formerly considered to be exclusively matters of ‘national concern’ now have an impact on the ecological bases of other nations’ development and survival.... This fast-changing context for national action has introduced new imperatives and new opportunities for international co-operation.”⁵

The oceans link all nations to a common future. Recognizing that local, regional, and international ocean and coastal policies are interconnected brings with it the realization that no country can resolve marine issues and manage ocean activities in a vacuum. Policy and management decisions, even at the local level, will be influenced by an eclectic

mix of international laws, treaties, standards, and other actions that affect both the environment and the economy.

Canada has been actively involved in many international efforts to manage and coordinate oceans issues. But it is the proliferation of oceans-related conventions, organizations, and initiatives that attests to the global recognition of the importance of the oceans agenda to the future of the planet.

Among the most significant international ocean initiatives is the entry into force in 1994 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS). An ambitious attempt to create an international governance regime for the oceans, UNCLOS has been called the constitution of the seas.⁶ It provides the framework for rights and duties on a broad range of ocean issues, ranging from international coordination of scientific research to the protocol for declaring EEZs. While it has been argued that UNCLOS is couched in the soft language common to international treaties, it nonetheless provides the latitude for impor-

tant progress toward global solutions to ocean problems.⁷ Canada signalled its intention to ratify UNCLOS in the February 1996 Speech from the Throne.

As a follow-up to UNCLOS, Canada was very active in the negotiations of the United Nations Fisheries Agreement (UNFA), which was adopted by consensus at the United Nations Conference on Straddling and Highly Migratory Stocks in August 1995. By establishing an effective high seas enforcement mechanism, UNFA fills the gap left by UNCLOS concerning conservation and management of straddling and highly migratory fish stocks.

Canada is a contracting party to the London Convention 1972 (LC[72]), an agreement among more than 70 states that promotes effective control of all pollution sources in the marine environment, with a particular focus on preventing ocean waste disposal. Canada has also accepted the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (Washington Declaration), sponsored by the United Nations Environment Programme (UNEP). Canada meets the obligations of the LC(72) through Part VI of the *Canadian Environmental Protection Act* (CEPA); in response to the Global Programme of Action, it is also developing a National Programme of Action for the Protection of the Marine Environment from Land-Based Activities.

These are just a few of the international initiatives in which Canada is involved. The incentive for international action is based on our growing concern over the dramatic decline in global fisheries; the increasing ocean pollution; the growing population in coastal zones, particularly in mega-cities; and our

inability to fully understand ocean phenomena such as El Niño and the potential role of oceans in climate change.

The National Scene

International frameworks require regional commitment. The federal government is making progressive efforts to implement national policies that manage ocean activities according to the principles of sustainable development. At present, a number of key federal ocean and marine initiatives are under way which, taken together, represent the most comprehensive shift of vision for ocean policy since the declaration of the national 200-nautical-mile fishing zone in 1977. Major components of this new oceans agenda include the following initiatives:

- the *Oceans Act*, which came into force on January 31, 1997, and which includes the development of Canada's Oceans Management Strategy;
- proposed new fisheries legislation by the year 2000;
- proposed national marine legislation to address marine services, port management, and St. Lawrence Seaway management;
- proposed legislation for national marine conservation areas to prevent the complete disappearance of specific ecosystems in Canada's marine regions;
- proposed revisions to Part VI of the CEPA regarding ocean waste disposal;
- a national action program for the protection of the marine environment from land-based activities, to fulfill Canada's commitment under UNEP's Washington Declaration; and
- implementation of the marine resource management provisions of the 1993

Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty in Right of Canada.⁸

Viewed as a whole, the government's pursuit of these initiatives illustrates the prevalence of ocean and marine issues on the current national agenda.

Sustainability Concepts

Part of the crucial challenge of the oceans agenda is to apply the concepts of sustainability to ocean management issues. Sustainability concepts include sustainable development, integrated management, and precautionary action.⁹ A primer on what these terms mean is included here to enable better understanding of how they might relate to ocean activity management. It is the NRTEE's belief that the pursuit of co-management will help to apply sustainability concepts to practical situations. Operational sustainability is an integral component of the current international oceans agenda.

Sustainable Development

A definition of sustainable development in the context of management decision making is found in *Our Common Future*, the report of the World Commission on Environment and Development (the Brundtland Report). Sustainable development, according to the Brundtland Report:¹⁰

- satisfies the needs of the present without compromising the ability of future generations to meet their needs;
- initiates processes of change in which the exploitation of resources, direction of investments, orientation of technological development, and institutional change are made consistent with future, as well as present, needs;

- enables societies to meet human needs both by increasing productive potential and by ensuring equitable potential and opportunities for all; and
- defines economic growth in terms of the limits of regeneration and natural growth.

Sustainable management has been the driving force behind numerous co-management initiatives. The Prince William Sound Aquaculture Corporation in Alaska was founded by local fishers for the purpose of salmon enhancement; it serves to counter resource depletion trends and create economic stability for the industry by maintaining sustainable resource harvesting levels. The Chesapeake Bay Programme is a major ecosystem co-management initiative aimed at sustainable management of Chesapeake Bay, the largest estuary in the United States with a watershed of 166,000 square kilometres. The Programme's goal is to restore and preserve the integrity of the ecosystem by balancing short-term development against long-term sustainability. Similarly, the St. Lawrence Vision 2000, a cooperative agreement between the federal and Quebec governments, was established to conserve the St. Lawrence ecosystem. And Australia's *Great Barrier Reef Marine Park Act*, one of the first pieces of legislation in the world to apply the concept of ecologically sustainable development to the management of a large natural area, makes public participation mandatory.¹¹

It is only through application of a sustainable development approach to management decision making, such as those described in the case studies above, that our oceans resources will be available to future generations.

Integrated Management

In the context of ocean policy, integrated management encapsulates a number of themes. The objective of the process is to seek compatibility, or balance, among a variety of ocean activities, while clearly incorporating necessary conservation measures. Integrated management can address:

- resource extraction — Aboriginal, commercial and recreational fishing, as well as sea bed mining;
- use of the ocean space — shipping, aquaculture, defence and sovereignty, coastal infrastructure, oil and gas platforms, and recreation;
- waste and sewage disposal in the oceans;
- biodiversity preservation; and
- uses of coastal lands and waters that affect the oceans.

Integration encompasses the notion of intragovernmental and intergovernmental coordination, as well as the need to link ecological and economic considerations in all sectoral policies impinging on oceans. These sectors include, for example, energy, transportation, coastal development, agriculture, and trade.¹²

Integration also implies public participation, community or user-based management, and fair dispute-resolution procedures. The goal is to accommodate conflicting interests and values in the development of management systems.

It has been stated that “integrative strategies of resource management are proposed as a key means for sustainable use.”¹³ However, while many interpretations of the concept exist, no clear prescription for achieving integration has emerged in the tangle of Canadian laws and policies governing our activities in

the oceans. Protection of the marine environment and decisions regarding the use of its space and its resources are shared among all levels of government. At present, at least 38 federal acts cover ocean issues and are administered by 23 federal departments and agencies. In addition, more than 100 acts are administered by the provinces and territories.¹⁴

The new *Oceans Act* attempts to coordinate federal oceans responsibility, serving as a framework for integration of policies and programs; one of the principles of its Oceans Management Strategy is integrated management of ocean activities.¹⁵ The Minister of Fisheries and Oceans will be responsible for applying the integrated management principle of the *Oceans Act*. The Department of Fisheries and Oceans describes integrated management as a decision-making process in which affected stakeholders work together toward agreement on common goals, plans, and policies relating to a specific issue or geographic area. This means a number of things. First, federal departments will not implement plans related to oceans without seeking the collaboration of interested parties. Second, ocean usage conflicts will be addressed at the planning stage, while long-term management plans will be based on regional and national goals.¹⁶

At the provincial level, stakeholders in the Fraser Basin are trying to create sustainable economic development for that region on the advice of the former British Columbia Round Table on the Environment and the Economy. In the Atlantic provinces, the Atlantic Coastal Action Program, established through Environment Canada’s Green Plan, has encouraged local communities to become more involved in coastal zone planning and development activities.

More specifically, the Halifax Regional Municipality is currently developing a coastal planning initiative for the Halifax Harbour that will include an inventory of present land uses, as well as a framework plan for future mixed public and private development. The project is a continuation of the Harbour Visioning strategy begun in 1995. It builds on the opportunity for coordinated planning created by the amalgamation of the four municipalities with jurisdiction over land abutting the Harbour and Bedford Basin.

These integration ventures, driven by stakeholders, appear to hold the key to comprehensive ocean economic development policies.

Applying an integrative approach to oceans policy represents a significant paradigm shift. Oceans policy has traditionally relied on separate and distinct regulatory systems for various oceans issues in which the roles of the regulated and the regulators have been clearly defined. Integration implies new, more effective working relationships among regulators, the regulated, and other stakeholders. With the requirement for collaborative decision making and for management and protection costs to be met more directly by users, a critical learning curve will be needed to build the capacity to develop new relationships and management regimes. This is an extraordinarily complex task, perhaps more difficult in the various ocean sectors than in forestry or agriculture, and particularly difficult in multi-use coastal settings such as the Georgia Basin or the Gulf of St. Lawrence.

Precautionary Action

The concept of precaution has been expressed as the *precautionary principle* or the *precau-*

tionary approach. The two terms are used interchangeably by scholars.¹⁷ The concept of precautionary action relates to improving conservation of both the environment and resources by reducing the risk of inadvertently damaging them. It aims at helping decision-makers and managers take safeguarding decisions when scientific evidence is inconclusive but a course of action must be chosen. In addition, this principle aims to promote a more equitable balance between short-term considerations and long-term sustainability. The Oceans Management Strategy in the *Oceans Act* will, in part, be based on “the precautionary approach, that is erring on the side of caution.”¹⁸

The precautionary approach is a set of agreed upon cost-effective measures and actions, including future courses of action, which, as much as possible, ensure prudent foresight. The precautionary approach also reduces or avoids risk to the resources, the environment, and people, explicitly taking into account existing uncertainties and the potential consequences of being wrong.¹⁹ The precautionary principle’s most notable attributes are that:

- it requires authorities to take preventive action when there is a risk of severe and irreversible damage to human beings;
- action is required, even in the absence of certainty about the ensuing damage and without waiting for full scientific proof of the cause-effect relationship; and
- when disagreement exists concerning the need to take action, the burden of providing proof is reversed and placed on those who contend the activity has not had, and will not have, an impact.²⁰

One working example of the precautionary approach in action is the International Whaling Commission's moratorium on commercial whaling, when scientific evidence did not support the effectiveness of less absolute conservation measures. Another is the London Convention's onus on the dumping state to prove that dumping activities will not harm the marine environment. Furthermore, the 1996 Protocol to the London Convention adopts a "reverse listing" approach in light of precaution, whereby all ocean dumping will be prohibited except for a short list of "acceptable" materials such as fish wastes.

Moving Toward Co-Management

Canadians are experiencing first hand the ill effects of poorly managed oceans. Almost daily, reports emerge of conflicts in fisheries and of inexplicable changes in the ocean environment. Predictions abound as to the effects of extreme conditions in water temperature,

pollution levels, and the recurrence of the El Niño phenomenon. The oceans are not stable environments as once assumed; they are fluctuating constantly in response to environmental variables, both natural and human in origin.

While it is recognized that global climate change and pollution borne by inland rivers influence ocean ecosystems, little is known about the nature and full extent of these human factors. What we can conclude, however, is that we are now seeing the results of management systems that fail to protect the long-term economic wealth and environmental health of the oceans; furthermore, the situation will get worse if we do not redesign our ocean management regimes to serve the goals of sustainable management.

Sustainability requires that broader responsibility be taken for decision making and for the impacts decisions have on society. Management choices must be based on a balance among biological, economic, socio-polit-

The Lesson of the Fraser River Sockeye

"If something like the 1994 situation happens again, the door to disaster will be wide open.... one more 12-hour opening could have virtually eliminated the late run of the sockeye in the Adams River. Such an occurrence would have devastating consequences for the Pacific fishery, delaying stock rebuilding efforts by years and bringing dire economic consequences to the province."

— *The Honourable John Fraser, P.C., Q.C., Chairman, Fraser River Sockeye Public Review Board*

A lack of precaution in estimating the number of returning fish in the face of ongoing changes in the commercial and Aboriginal fisheries almost caused that particular Fraser River sockeye run to be fished to extinction in 1994, when an estimated million salmon failed to return as projected. The total allowable catch, based on historical data on run projections, did not take into account the underlying uncertainty of new risk factors such as run diversions, illegal fishing, and reductions in field monitoring, thereby placing the accuracy of the run projections in question (Fraser River Sockeye Public Review Board, *Fraser River Sockeye 1994: Problems and Discrepancies* [Ottawa, 1995], p. xiii).

ical, cultural, and value frameworks. This balance is best secured by decentralizing the management of resources upon which resource users depend, and by giving an effective say over their use to those who are most affected by the consequences of the unsustainable management of those resources. In effect, stakeholders²¹ need to be engaged in management regimes as trustees for present and future generations. It is the engagement of stakeholders that will encourage the necessary broadening of responsibility.

Stakeholders are now demanding new approaches to sustainable ocean activity management systems, where these groups have a degree of control over the outcome. At the same time as stakeholders are demanding involvement, governments are increasingly interested in new management arrangements involving user groups, as a means of addressing shrinking budgets, providing more efficient policy formulation and program delivery, and fostering both personal stewardship and an ethic of conservation among resource users. All this explains why the notion of co-management is gaining attention.

A co-management approach should provide stakeholders with opportunities not only to contribute to management, but also to foster a willingness to take on some ownership for the future of the oceans. The stakeholder collaboration required in developing both the Oceans Management Strategy in the new *Oceans Act* and the partnering provisions being proposed for new fisheries legislation are two good examples of innovative systems of government and non-government management arrangements. By working together and sharing responsibility for successes and failures, the pursuit of a sustainable oceans agenda will become a more tangible goal.

In Canada, Aboriginal peoples have actively sought co-management provisions in their comprehensive land claims agreements²² in order to ensure involvement in resource management decisions. Fish and wildlife co-management in the north started with the 1975 James Bay and Northern Quebec Agreement and continued with the Inuvialuit Final Agreement of 1984, the Gwich'in Comprehensive Land Claim Agreement of 1992 and the Nunavut Agreement of 1993, with its significant co-management provisions regarding ocean and other resources. The resulting co-management regimes incorporate traditional knowledge and values in decision making.

In the case of the Lofoten Island cod fishery,²³ conflict among fisher groups could not be addressed by regulation alone; co-management was introduced as a means of bringing the regulatory regime closer to the stakeholder fisher groups. In recognition of the importance of broadening the base of participation in resource decisions, the co-management strategy introduced a key element: the establishment of district committees involving the various stakeholder groups in rule-making.

Co-management is a way of meeting the challenges of the oceans agenda by operationalizing the concept of sustainable development. The following discussion of co-management theory and its applications is provided to add value to policy development in this area.

“Co-management means depoliticizing resource management decisions.”

— *Environmentalist*



Chapter 3

Defining Co-Management

What Is Co-Management?

Cooperative management, joint management, and collaborative management are all terms synonymous with co-management. These terms are used to define:²⁴

- an institutional arrangement in which responsibility for resource management, conservation, and/or economic development is shared between governments and user groups;
- management systems in which users and other interests take an active part in designing, implementing, and enforcing management regulations;
- a sharing of decision making between government agencies and community-based stakeholders;
- management decisions (policy) based on shared information, on consultation with stakeholders, and on their participation;
- the integration of local-level and state-level systems; and/or

- institutional arrangements in which governments and other parties, such as Aboriginal entities, local community groups, or industry sectors enter into formal agreements specifying their respective rights, powers, and obligations with reference to, for example, environmental conservation and resource development.²⁵

Thus although the balance of power among parties and the details regarding implementing structures can vary widely, co-management is essentially a form of power-sharing.

A co-management system may emerge by degrees. It can involve stakeholders as co-managers on specific management issues. Or it may involve consultation by co-managers with stakeholders, but without those stakeholders having full management and decision-making authority.

Co-management can be precisely defined through either legal or administrative arrangements. Conceptually, a wide variety of partnership arrangements and degrees of responsibility-sharing is possible.

In general, co-management implies a formal agreement between at least one government and another group. It may also mean the formal recognition by government of the management responsibilities of other partners or organizations such as communities or sectors.

Co-management is not a new concept when it comes to fisheries management. In Norway, for example, co-management of the Lofoten Islands cod fishery²⁶ has been in place for over a century. To stop fighting among fishers, the *Lofoten Act*, passed in the 1890s, gave responsibility for the regulation of fisheries to the fishers. District committees elect their own representatives and make the rules for fishing; for example, who fishes, when they can fish, and what kind of gear they can use.

Co-management is a form of *partnership*. A Government of Canada definition of partnership is as follows:

*A partnership is an undertaking to do something together. It is a relationship that consists of shared and/or compatible objectives and an acknowledged distribution of specific roles and responsibilities among the participants which can be formal, contractual, or voluntary, between two or more parties. The implication is that there is a co-operative investment of resources (time, funding, material) and therefore joint risk-taking, sharing of authority, and benefits for all partners.*²⁷

Although roles may differ between the partners, acknowledgment of the investment of resources and the joint sharing of authority distinguishes co-management from other forms of discussion or consultation.

Co-management, as defined here, includes government as a partner. *Community-based management* is sometimes considered a form of co-management. But

when community-based management does not include government as a partner in the decision-making process, it is not co-management. For example, marine tenure systems and traditional fisheries management systems, both based on a custom of community decision making without the formal involvement of a government partner, are community-based management regimes, not co-management systems.²⁸

Other examples of community-based resource management have been initiated in recent times by provincial and territorial governments in response to demands for more local management involvement and as a mechanism to delegate responsibility in periods of fiscal restraint. Examples of these government-initiated, community-based management regimes are the Elk Lake community forest project in northeastern Ontario and the development phase of the proposed Bras d'Or Watershed on Cape Breton Island.²⁹

A *multistakeholder process* is often a component of co-management. This process implies a discussion forum, a consultation, or a negotiation/mediation process, rather than the actual partnership and sharing of decision making integral to co-management. Some co-management arrangements are multi-stakeholder-type processes at various phases of their development.

“...The formality of co-management regimes also varies. Regimes like those established under land claims settlements are formal, legal regimes. Others, like the Pacific Walrus Management Regime, have been established by an agreement among user communities.”

— *Circumpolar Aboriginal People and Co-Management Practice*, p. 20.

Although co-management has a long history in some regions, it is new to mainstream decision making. Thus the discourse around the subject is still developing. It is therefore not surprising that there is ongoing debate over the meaning of co-management. The NRTEE definition of co-management is based on round table discussions with stakeholders.

The NRTEE's Definition

For the purposes of this NRTEE guide, co-management is a system that enables a sharing of decision-making power, responsibility, and risk between governments and stakeholders, including but not limited to resource users, environmental interests, experts, and wealth generators.

Co-management, as it relates to oceans, is therefore an arrangement by which responsibility for resource management and ocean stewardship is shared between governments and stakeholders who are applying an integrated approach to management with the objective of maintaining the ecological integrity of the oceans. Co-management of oceans activities could include one or more of the following management rights and duties:³⁰

- coordinating potentially conflicting resource use and management activities — sport, commercial and subsistence fisheries use, harvest and enhancement activities, aquaculture;
- ensuring compatibility in use of ocean space;
- resolving conflicts through mediation or consensus decision making;
- enforcing or implementing rules;
- maximizing benefits to resource harvesters and sharing resource equity among stakeholders — supply management, quality enhancement, product diversity; and
- monitoring and disseminating information.

The Legal Basis for Co-Management

The legal basis for co-management stems from various sources, depending on the parties involved, the particular form of institutional structure desired, and the nature of what is being co-managed. The key to the legal framework for co-management lies in recognizing that, while there are limits to consider, legitimate mechanisms exist for implementing alternative forms of management in Canada.

Co-management arrangements can be enabled by a statute; it is also possible to incorporate a co-management agreement into legislation. As an alternative to a formal legal context, various administrative mechanisms, such as memoranda of understanding, may be used to establish a co-management mandate. International agreements are often pursued in this less “formal” manner. For instance, the Canada/Greenland Joint Commission was established through a memorandum of understanding in 1989 to conserve and manage the narwhal and beluga whales that migrate

- policy making and evaluation — scoping problems, setting long-term objectives, research and education;
- ensuring the productive capacity of the resource — monitoring habitat, proven and viable enhancing/restoring of habitat, enhancing stocks;
- regulating access to the ocean space and to ocean resources — membership or exclusion, membership transfer, harvest allocation;
- regulating resource harvest — stock assessment, harvest planning, harvest monitoring;

between the waters of the two nations. Some of these arrangements will have more legal enforceability than others.

Many existing Aboriginal co-management agreements are components of comprehensive land claims settlements. Co-management arrangements incorporated into these land claims agreements are legally protected in a unique manner, inasmuch as Aboriginal rights in Canada have been recognized both in common law and through section 35 of the *Constitution Act, 1982*.³¹

While interpretation of these rights is still evolving, Canadian governments clearly have certain legal obligations to Aboriginal peoples. In effect, because protected Aboriginal rights may override statutory attempts to manage resources, this may actually create an incentive for the government to co-manage. Should the

government fail to fulfill any responsibility in these agreements, Aboriginal partners will likely have legal recourse.

Three legal issues frame the structure of a co-management agreement: the Constitution, delegation principles, and enforceability. Constitutional roles will inevitably dictate what can be negotiated and who must be at the table when establishing a co-management agreement.

Delegation principles may create procedural requirements because, in some instances, authority to delegate must be expressly authorized in a statute. In addition, certain forms of

“Co-management uses consensus decision making to develop management principles among diverse and competing interests.”

— *Co-management project manager*

Judicial Recognition of Co-Management Authority

The Nunavut Tunngavik corporation requested the Federal Court to set aside the decision of the Minister of Fisheries and Oceans with respect to the establishment of turbot quotas for the Davis Strait Fishery for 1997. The Nunavut argued that the Minister failed to respect the authority of the Nunavut Wildlife Management Board (NWMB) and that the Minister failed to properly consider the NWMB's advice, as required by the 1993 land claims agreement between the Inuit of Nunavut Settlement and the Government of Canada. In setting aside the decision, Justice Campbell found that the Minister did exceed his jurisdiction, as authorized by statute, by failing to take into account relevant considerations. Justice Campbell emphasized the importance of the Agreement being struck in the context of Aboriginal rights in *Nunavut Tunngavik Inc. v. Minister of Fisheries and Oceans (Canada)* (14 July 1997) T-872-97 (F.C. T.D.). This decision is currently under appeal.

This judgement not only recognizes the legitimacy of the NWMB's role in wildlife management decisions, but it also considers the requirements of “consultation” as set out in the Agreement. Justice Campbell stressed that simply receiving and examining the advice and recommendations of the NWMB was not tantamount to “meaningful” inclusion; he essentially underlined that the Minister must comply with the spirit and not simply the letter of the Agreement. Judicial review of the terms common to co-management agreements can only help to further legitimize and define co-management arrangements in Canada.

delegation may not be available as options. Finally, questions may arise as to the enforceability of some co-management agreements, given the principles of parliamentary sovereignty that preclude courts from enforcing contracts that try to bind successive governments.

A report by the Food and Agriculture Organization emphasizes the transitional challenges to be expected in trying to operationalize local level management through law reforms:

With regard to legal aspects, it was noted that the devolution of management authority to the local level would require, in many countries, a major or even drastic revision of fisheries laws and possibly other related legislation. This may pose few problems in those situations where some forms of traditional fishing rights already rest with fishing communities as, for example, in the case of Pacific island countries. For other cases where complex political and socio-economic conditions prevail, the required legal changes may be difficult to accomplish.³²

Using fisheries issues as a model — similar provisions might be applied in legislation addressing other ocean management issues — suggestions for how co-management could be supported in Canada through legislation are provided here.³³

Two overall approaches might be considered for legislatively encouraging co-management of fisheries in Canada. First, the existing *Fisheries Act* might be amended. Second, new “stand alone” co-management legislation might be introduced.

1. Amendment of Fisheries Act — An amended *Fisheries Act* could establish an enabling

framework for developing and implementing co-management fisheries arrangements through various provisions:

- inclusion of governmental commitments to follow the co-management and precautionary approaches to fisheries management in the purpose section of the legislation;
- mandating the Minister of Fisheries and Oceans to develop a national strategy and action plan for fisheries co-management;
- encouragement of the Minister to promote the conclusion of co-management agreements and the establishment of co-management boards;
- authorization of the Minister to give legal force to conservation measures developed pursuant to co-management agreements through licensing conditions and ministerial orders;
- authorization of the Minister to establish regional councils to coordinate the efforts of local co-management boards; and
- authorization of the Governor in Council to issue regulations concerning: establishment of co-management boards, including equitable representation requirements; establishment of the basis for accreditation and accountability of stakeholder representation; designation of co-management areas; development of fisheries management plans by co-management boards; establishment of financial powers and financial arrangements for co-management boards; and development of enforcement and compliance with fisheries management plans, including appropriate sanctions.

2. Introduction of an Act Respecting Fisheries Co-Management in Canada —

A legal framework for encouraging co-management might be established through a separate federal statute, entitled An Act Respecting Fisheries Co-Management in Canada. Separate legislation might be argued for on at least two bases. First, a separate act would emphasize the critical importance government places on rethinking and reforming fisheries management arrangements in light of sustainable development commitments. Second, an act focused on promoting co-management arrangements, without addressing a multitude of other issues such as pollution control, might speed legislative adoption. Legal provisions similar to those suggested for an amended *Fisheries Act* could be adopted.

As well, the two legislative proposals could be broadened to include ministerial and regulatory powers to facilitate community-based management. For example, the Conservation Council of New Brunswick recently suggested the establishment of Community Fisheries Boards, subject to the advice of Bioregional Fisheries Boards responsible for broader ecosystem protection, such as protecting spawning areas covering more than one community-based management area.³⁴

The Oceans Act

Canada's *Oceans Act*, which came into force on January 31, 1997, offers new opportunities for co-management arrangements in two key areas: the establishment of marine protected areas and the development of integrated management plans for coastal and marine waters. The Act requires the Minister of Fisheries and Oceans to lead and coordinate the development and implementation of a national system of marine protected areas and to facilitate

integrated management plans for coastal and marine water areas. Important for co-management purposes, the Act authorizes the Minister to establish advisory or management bodies, involving representatives from all levels of government, Aboriginal organizations, coastal communities and other persons, to assist in the planning processes. Legal force may be given to marine protected area plans and integrated management plans for coastal/marine waters through regulations issued by the Governor in Council.

An example of how co-management arrangements might work for designating and managing marine protected areas follows. The Minister of Fisheries and Oceans might establish regional protected area advisory committees, one each for the Atlantic, Arctic and Pacific coasts. The committees, involving scientists, community representatives, Aboriginal organizations, industry interests, academics and government officials, might be tasked with identifying, evaluating and selecting priority sites for protection. The *Oceans Act*, in section 35, provides various reasons for site selection including protection of fishery resources, conservation of marine mammal habitats, protection of endangered or threatened species and conservation of marine areas of high biodiversity or biological productivity.

For each selected site, the Minister might establish a specific marine protected area advisory committee to develop a marine protected area plan. A plan could recommend various management measures including prohibited activities, limited use areas and vessel routing.

Regulations might be developed for each marine protected area management plan and regulations might include the establishment of a co-management board. Board functions

might include licensing permitted activities, such as eco-tourism and small-scale fishing, monitoring the plan's implementation, promoting public education and periodically updating the plan.

Co-management arrangements can also be pictured for addressing pollution and conflicts of uses in coastal and marine waters. For example, integrated coastal zone advisory committees might be established for each coastal province and territory. Having broad Aboriginal, community, industry, academic and governmental representation, such committees might "set the stage" for more local planning initiatives. The committees might sort out such issues as: the expected contents of integrated management plans; the appropriate geographical subregions for planning purposes (e.g. Nova Scotia might be divided into Eastern Shore, South Shore, Cape Breton Island, Bay of Fundy and Gulf of St. Lawrence); the seaward extent of management planning (e.g. 12-nautical-mile territorial sea or 200-nautical-mile exclusive economic zone); funding needs and sources; research priorities; and the adequacy of existing legal and institutional arrangements.

Following the initial "visioning" exercises, the Minister of Fisheries and Oceans might appoint local integrated management advisory committees for the recommended subregions with the mandate to develop integrated management plans. Such integrated management plans might: set out socio-economic development objectives; identify research and educational needs; suggest specific projects such as clean-up of an offshore dump site or creation of an underwater eco-tourism park; establish marine environmental quality guidelines; and propose offshore zoning restrictions.

The *Oceans Act* appears to leave two avenues for implementing integrated management plans and perhaps new co-management institutions such as integrated coastal zone management councils. The Minister might enter into implementation agreements with any person or body, and the Minister might recommend implementing regulations to the Governor in Council.

The extent to which the Department of Fisheries and Oceans will adapt co-management arrangements pursuant to the *Oceans Act* remains somewhat uncertain. The Department, in a document released in January 1998, *Toward Canada's Oceans Strategy*, did not propose specific co-management institutions but pledged to further consult Canadians regarding appropriate approaches to integrated planning and management. In a January 1997 discussion paper, *An Approach to the Establishment and Management of Marine Protected Areas Under the Oceans Act*, the Department, although committed to partnerships, suggested considerable flexibility in future management arrangements. Those arrangements could range from sole Departmental responsibility for some offshore marine protected areas to co-management or consultation and public awareness programs for coastal protected sites.

Numerous challenges remain to be faced regarding integrated management planning for marine and coastal waters. Those challenges include: forming advisory and management bodies that are both representative of various interests and practical in terms of numbers; sorting out the relationship between marine protected area planning exercises and integrated management initiatives; overcoming offshore jurisdictional disputes with the

provinces over marine resources and their management; considering appropriate arrangements with management bodies established under existing land claims agreements; and determining the extent to which coastal land uses can be influenced. The *Oceans Act* exempts application of integrated planning to rivers and lakes and limits integrated management planning to activities in or affecting estuaries, coastal waters and marine waters.³⁵

What Are Co-Management's Potential Benefits?

Co-management and its various derivatives provide an opportunity for government to refocus from micro management to macro frameworks. In so doing, government can redefine its function, shifting its emphasis, where appropriate, to a role involving varying degrees of regulation and facilitation. Stakeholders can assume responsibilities for management decisions, while government sets overall objectives, facilitates the management process, and audits the results. Integrated planning and management of oceans activities involving all players constitute two ways of reducing user conflicts and of increasing the effectiveness of policies and programs.

Bringing Interests Together

User groups and other policy community interests see co-management as a means of remedying shortcomings in existing regimes.

Oceans are not static or compartmentalized; their waters respect no jurisdiction, border, or economic sector. However, our traditional regulatory management approach, addressing issues rather than ecosystems, has tended to create a system that is increasingly fragmented, with one decision-making

process for fisheries, another for shipping, another for oil and gas issues, and another for environmental protection. Co-management could bring together the various interests and actors, engendering a more comprehensive understanding of resource and environmental use constraints and opportunities.

Changing Relationships

A change in roles also implies a change in relationships. The ritualized relationship of the regulator and regulated is strongly entrenched in Canadian society. Yet governments are reducing their hands-on role, changing the way they do business, while people affected by decisions are demanding a much greater say in how these decisions are resolved. Co-management can help foster an understanding of new relationships between government and stakeholders. Co-managers will have to redefine their relationships with each other: as joint members of management teams, they, together, must bear the burden and responsibility of day-to-day decision making.

*Fostering Joint Accountability*³⁶

In an effective co-management arrangement, any increase in decision-making power given to a stakeholder will have attached to it a corresponding greater degree of accountability. When stakeholders become involved as co-managers, they are less likely to act solely in their vested interests if they know they will, at

“To me, co-management involves systems that not only allow but also encourage sharing of management decisions among a variety of stakeholders and levels of government.”

— *Representative of the International Union for Conservation of Nature*

“Co-management is management for the common good. For co-management to work, stakeholders have to be able to set aside their individual interests to arrive at objectives that meet the needs of the whole. This implies the concept of stewardship and protection of the environment for future generations. It also requires a total ecosystem approach. The oceans cannot be viewed simply as a resource for fisheries or tourism — they are a world for the fish and wildlife who make their home there.”

— NRTEE member

least to some extent, be held accountable for the consequences of their decisions.

Joint accountability in co-management arrangements also increases the likelihood of consensus by exposing stakeholders to a range of perspectives and possibly broadening their understanding of an issue. The less narrow the focus of engaged stakeholders, the more likely solutions that accommodate the majority view will be reached.

Furthermore, decisions made by a group of co-managers — any group, but particularly one where there is joint accountability — are less likely than single-party decisions to be based exclusively on short-term considerations. When long-term considerations are taken into account, decisions are more likely to support sustainable development goals.

Supporting Transparency and Autonomy

The multijurisdictional nature of emerging oceans issues is not, in some instances, well served by imposed regulations that do not blend ecological, economic, and social goals. Existing decision-making processes have been criticized for lacking transparency, for working at cross-purposes with sustainability and for being open to political influence at the expense of the long-term stability necessary to make business decisions. The involvement of user groups in the policy process is an opportunity to create open, transparent decision-making processes, and to allow these user groups to assume more authority over decisions that affect the use and enjoyment of the ocean resources and space.

The Prince William Sound Aquaculture Corporation in Alaska³⁷ is an example of how co-management can support autonomy. This corporation was formed in 1974 to bolster the salmon run in the area. Local fishers wanted to counter resource depletion and protect themselves against natural fluctuations in the fish population. While co-management of a pink salmon hatchery by a non-profit regional association of fishers and a state agency boosted the incomes of pink salmon seiners, it reduced conflicts over the allocation of enhanced and wild stocks.

Devolving Decision Making

Co-management coincides with the trend in management toward delegating decision making to the lowest possible level. Defining the appropriate level, however, is specific to the issue at hand. It might be the local community or the Prime Minister. Or it might be the inter-

national community. It might also be that different components of a project or issue require decision making at more than one level.

The proposed \$2-billion Sable Island offshore natural gas development project (SOEP), for example, requires both National Energy Board (NEB) and environmental assessment approval; it also involves interests at the national level. But the developers have recognized that, in advance of and in addition to regulatory approval, the project must also meet the approval of affected stakeholders in Nova Scotia coastal communities. Moreover, it has to be approved by those who represent other uses of that ocean space.

The SOEP development consortium has, in advance of NEB hearings, formed a partnership with fishing, aquaculture, and community interests to establish principles for collaboration in their concurrent activities.

Responding to Regional Needs

With its broader base and greater degree of stakeholder participation, co-management creates more potential for parties to tap local knowledge and to build upon the specific, unique strengths of particular regions. At the same time, the response to regional needs is likely to be more appropriate and informed.

A good example of this is the Kuskokwim River Management Working Group³⁸ in Alaska. One of this co-management program's distinctive features is how much it relies on the collective knowledge of local volunteers, and particularly the traditional knowledge of native elders and other fishers in harvest planning and in data collection and analysis.

Improving the Bay: A Hypothetical Case Study of Co-Management in Action

Environmental quality in the Bay, just north of Vancouver Island, had been declining for some time. The harbour, which generated a large part of the town's income, was also generating pollution. There was much sewage coming from the town, discharged after only primary treatment, as well as forestry-related debris and siltation from logging operations on the watershed of the river that empties into the ocean at the Bay.

What finally triggered environmental action was an oil spill during transfer of fuel to a barge in the harbour. A citizens' group in town demanded action after a number of seabirds were oiled. In the course of a week during which the local radio stations and the town's paper maintained the public debate, the citizens' group was joined by a group of tourist operators, a vocal group from the local college, town councillors, the chamber of commerce, and, finally, some employees of the provincial park at the south end of the Bay. These employees, who did not want to be quoted, said that the 10-year-old park could not live up to its potential as long as there was such chronic pollution on the coast.

An informal working group met, representing many of the parties demanding action. The working group soon evolved into a multi-stakeholder group, consisting of representa-

“Co-management involves research capabilities that fuse Western scientific knowledge with traditional or popular knowledge.”

— ENGO representative

tives from the citizens' group and the hastily formed association of tourist lodge owners in and near the park; municipal officials; and a representative from each of the park, Transport Canada (and the harbour authority), and the forestry industry. With the help of a mediator who had experience with consensus-building and who knew how to obtain relevant materials from various Web sites, the multistakeholder group got to work.

After members of the working group voiced their opinions and aired grievances, the first step was to define the issue: to improve environmental quality of the Bay, and to prevent chronic pollution from a diversity of sources.

The second step was to define the geographic area. The unit of management had to be large enough to allow the integration of interrelated issues but small enough to be identified with stakeholder interests. The group defined the area to include the Bay, the estuary, and the watershed of the river that emptied into the Bay.

This exercise revealed four other stakeholders: the provincial hydro authority that managed the water flow in the river; the naturalist group, with its many members who were canoeists and bird watchers in the area upriver, and which, implicitly, also informally represented recreational users such as kayakers; the Department of National Defence, which had plans to put in a military installation for refuelling; and a small company that received harbour-dredging contracts but also did some sand-mining in the Bay for the construction industry. After some debate, representatives from these interests were invited to join the multistakeholder process.

The next step was to get the participants to agree on a list of common objectives under a new partnering arrangement. Since there was a range of positions and expectations, it was important to find common ground, to prioritize objectives, and to be realistic about limitations.

The Transport Canada representative was confident the water quality in the harbour could be improved, but noted that there were enforcement problems in dealing with the shipping traffic. She was surprised to hear that tourist operators in the park thought they were affected by harbour pollution. She wondered if municipal pollution and logging debris might be responsible for some of that pollution. In any case, she said, her agency would welcome changes, because this would strengthen the Department's hand in the enforcement of regulations. The municipal officer, after going through the long history of provincial underfunding of the town's waste management system, conceded that even the primary treatment system often did not work, forcing the town to discharge raw sewage.

The group considered a number of preliminary ideas for alternative solutions: a reduction in the amount of shipping; the creation of a marine protected area that would forbid commercial traffic; the locating of all waste outfalls outside the Bay using an offshore discharge pipe; and the improvement of waste management before discharge into the estuary.

Once these possible solutions had been identified, certain of the working group members who did not support the solutions left the group. This self-selection process helped define the key actors, who then took ownership of the issue.

The remaining multistakeholder groups moved to formalize the solutions agreed upon by the parties. Some of the solutions — improved waste management, for example — required funding. Some required the sharing of responsibilities. The parties with key roles were identified, including the three levels of government: the municipality, the province represented by the park, and the federal government represented by Transport Canada. The local citizens' group offered to organize a beach and stream clean-up campaign similar to the one held in Hamilton Harbour, Ontario. The naturalists suggested that they provide monitoring information on biodiversity in the watershed and on stream water quality, while the forest industry representative suggested that the forest industry could underwrite the cost of such a program.

The mechanism to formalize and implement such an agreement was found in the new *Oceans Act*. This Act attempts to coordinate federal oceans responsibility through an Oceans Management Strategy that identifies the principle of integrated management of activities in estuaries, coastal waters, and marine waters (Para. 30.b). The Act indicates that the Minister of Fisheries and Oceans “shall lead and facilitate the development and implementation of plans for the integrated management of all activities” related to integrated management (Para. 31). The Minister “shall develop and implement policies and programs “jointly with another person or body or with another minister” (Para. 32). The Minister may establish advisory or management bodies (Para. 32.c.i) “and may enter into agreements” with such persons or bodies (Para. 33.1.b). By virtue of legal responsibilities outlined in the *Oceans Act*, the federal gov-

ernment representative took the lead, working jointly with the stakeholders in the process of developing an agreement.

The key groups were identified, and their responsibilities and roles were formalized according to the guidelines and regulations under the *Oceans Act*. The agreement was made public. As part of the agreement, and acting jointly with the Department of the Environment and other ministers and bodies in the agreement, the Department of Fisheries and Oceans took over the responsibility “to establish marine environmental quality guidelines, objectives and criteria” (Para. 32.d). The other parties agreed to have the various levels of government represent the general public interest, while the citizens' group indicated its desire to set up a subcommittee of independent local experts to act as a public watchdog.

A consultative process was used to draft the guidelines, objectives, and criteria. Identified interest groups, as well as the community, were given an opportunity to provide input. Once the draft was formalized, the group agreed to develop a management plan specifying how the objectives were to be achieved, assigning responsibility, and setting timelines for each of the prioritized activities. An annual planning cycle was put in place, and resources were allocated by the three levels of government to support the various initiatives. Those unworkable during the current fiscal year were to be reconsidered in the following year.

Even though greater cross-government coordination resulted in improved decision making, members realized after a period of time that fuller participation of local interest groups was essential to the long-term success of their efforts. To that end, they undertook to

involve the community through education and outreach activities, sought ways to train community volunteers to conduct some activities, and restructured their committee to allow additional stakeholders to become part of the group.

Conclusion

Co-management is an evolving concept. When it works, every group gains from co-management arrangements. In essence, responsibilities and risks are shared, participation is encouraged, and complementary skills and resources improve the entire system of management. The next chapter looks at three core elements that the NRTEE deems are required to develop successful co-management regimes.



Chapter 4

The Road to Successful Co-Management Regimes

There are many factors that influence the success or failure of a co-management arrangement. This chapter focuses on the particular ingredients viewed as essential to the success of a co-management agreement. The three core elements are a strong supporting institution, effective engagement of stakeholders, and capacity-building mechanisms.

A Strong Supporting Institution

Co-management is meant to foster a shared sense of both ownership and responsibility, with the intended result that all players consider the impact of their actions on the entire system. The challenge is to create a competent and trusted institution to foster a successful long-term stewardship process. In effect, a co-management system will only be as good as the institution — the council, board, or agency — charged with implementation.

The institution itself has a complex task, involving both the delivery of co-management agreements and the crafting of programs of long-term stewardship. Creating such a com-

petent and trusted institution — one which can make decisions that will be implemented — requires solid political endorsement: supportive policies, enabling legislation, and funding.

From our case studies, we have determined that the most effective institutional arrangements are those created out of the co-management agreement, especially when specific roles and responsibilities related to the implementation of the agreement are assigned. The institution created as part of the co-management agreement would have, among its duties, the following roles:

- determining the appropriate relationships between players, including the defining of roles for the co-management partners, other levels of government, and the public vis-à-vis both program formation and implementation;
- fostering trust by engaging the broader public in awareness and education;
- collaborating with institutions at various levels of government and in the academic, research, and business community;

- collaborating with other stakeholders, whomever they may be, and proactively seeking their participation in long-term stewardship initiatives;
- designing implementation systems for the co-management agreement;
- preserving local knowledge and incorporating it into program design and implementation; and
- capacity-building to engage a broader range of stakeholders in implementation and design.

While some co-management committees are advisory bodies, others are described as institutions of public governance. These institutions of public governance are accountable not only for the co-management regime, but also for the public interest. To this end, any actions they take are subject to judicial review. The Gwich'in Renewable Resources Board is an example of a public government institution.

“The Fraser Basin Management Board is a unique co-management system. The geographic area of the basin is 240,000 square kilometres, which is roughly the size of Great Britain. We are working with 96 First Nations who speak seven languages, with a variety of governments from federal to provincial to municipal, and with various individual sectors to form a Fraser Basin Council.”

— *Fraser Basin Management Board member*

The Nunavut Federation management system, still taking shape, is establishing a licensing board for inland waters, a land-use planning commission, and a wildlife management board. Provision is made in the same enabling legislation for the amalgamation of these various boards into one Nunavut Marine Council. While the government maintains authority to override the Council, this authority is limited to the context of concerns related to conservation purposes.

The case studies in Appendix II provide more detailed examples of the many possible variations in co-management institutions. In Australia, the Great Barrier Reef Management Strategy,³⁹ set up in response to Australians' objections to coral mining and oil drilling on and around the reef, established an authority that actively seeks public involvement in management and conservation. Public participation in all areas of management was at the centre of the strategic approach. In the Philippines,⁴⁰ the municipal fisheries are co-managed, one of their most striking features being the involvement of well-funded and dynamic non-government organizations (NGOs). In the United States, the U.S. Pacific Fishery Management Council⁴¹ is one of eight regional councils, each with the flexibility to manage its own unique region. In Canada, the Gwaii Haanas Agreement⁴² for South Moresby, Queen Charlotte Islands, British Columbia, has a completely different look. The agreement contains parallel statements on sovereignty and on title to and ownership of the South Moresby archipelago, while concurrently affirming the willingness of the Haida and the Government of Canada to work together.

Co-management can take many forms, and a variety of factors influence the decisions

regarding the form a co-management agreement takes. To put together an independent, yet accountable, co-management body and to make sure it works effectively, a firm government commitment to action is required, even — and perhaps especially — when stakeholders cannot agree. It is also essential to have an independent person or organization to help remove roadblocks, particularly in the early stages of development. It is important thus to agree on a neutral dispute resolution process from the outset. In these times of fiscal restraint, when creating institutional capacity is particularly difficult, all parties involved will have to search for innovative financing schemes in order to achieve these goals.

Effective Engagement of Stakeholders

The economic, environmental, and social values as well as the concerns and aspirations of stakeholders must be part of the co-management system. This issue can best be addressed through open and transparent public participation that supports the co-management process.

Beginning with the success of public collaboration in the development of the *Canadian Environmental Protection Act* (CEPA) in the mid-1980s, governments have made public consultation a mainstay of every major policy-development process. The CEPA exercise illustrated that stakeholders had the ability to contribute meaningfully to a technically complex and highly controversial subject. The quick passage of the draft bill further endorsed the value of public engagement as an efficient and effective policy-development tool.

The importance of public consultation was reaffirmed in the 1995 report of the

Federal Task Force on Strengthening the Policy Capacity of the Federal Government, chaired by Ivan Fellegi, Chief Statistician of Canada. Reporting to the Clerk of the Privy Council, the task force identified public consultation as one of the seven key functions contributing to the success and acceptance of a government's policies.

Public engagement serves a number of valuable functions in policy development and implementation. Through dialogue and debate, stakeholders and policy makers have the opportunity to probe the intricacies of key issues, to define the values and principles for action, to explore new concepts, to forge alliances, and to create a legitimacy for the implementation and delivery phases.

In ocean activity management policy, given the need to integrate complex environmental and human resource considerations with economic decision making, public consultation and participation in decision making are particularly important. In all cases, decisions will involve trade-offs and compromise. If stakeholders are engaged in the decision-making process, including the design of the consultation and participation components, the results are more likely to be endorsed. Indeed, in a truly effective stakeholder engagement, the stakeholders believe their concerns are being addressed. At the same time, they may also develop a new understanding of the other side, thereby potentially eliminating initial negative reactions or clearing up misperceptions about a proposal.

Those involved in the Chesapeake Bay Programme in the United States⁴³ recognized the importance of broad consensus. In the 1960s, the serious decline in Chesapeake Bay water quality was receiving significant atten-

tion. As a consequence, a foundation was established to “Save the Bay.” By 1987, the Chesapeake Bay Agreement had organized 29 committees for action in six areas: living resources, water quality, population growth and development, public education, public access, and governance.

Another engagement process was designed and used successfully by the Suncor Inc., Oil Sands Division of Fort McMurray, Alberta: stakeholder participation was included in the tar sands development plans prior to formal federal environmental assessment

review hearings. Suncor estimates that engaging the public prior to the formal hearings saved the company \$100 million in costs, thereby allowing the project to proceed two years ahead of schedule. The potential economic benefits of effective engagement are thus becoming apparent to corporations.

Similarly, The Sable Island Offshore Energy Project (SOEP) developers invited stakeholders representing fishing, aquaculture, and coastal communities to work with them in establishing guidelines to “co-manage” the ocean space and to resolve conflicts for both

Prerequisites to Successful Consultation

- All participants believe the exercise adds value.
- There is a commitment from senior management.
- There is a willingness to be influenced by sound information and argument.
- Participants are prepared to make appropriate modifications to plans.

Steps in a Public Consultation

- Identify the stakeholders.
- Jointly develop the process for consultation.
- Tailor the method of consultation to meet the needs of each stakeholder.
- Establish the principles of consultation against which future issues and conduct can be tested and measured.
- Preserve the integrity of the regulatory process.
- Make the process open and transparent.
- Share information freely and early.
- Make sure stakeholders are able to participate effectively.
- Be sensitive to all the needs of participants.

In General

- **Objective:** The best business decisions are made after full, fair consideration of the ideas and concerns of all key stakeholders.
- **Focus:** Build upon long-term relationships.
- **Commitment:** Avoid a disagreement based upon a misunderstanding.

near-shore and offshore components of the project. This process led to the SOEP-Country Harbour Drumhead Fisheries and Aquaculture Liaison Committee, whose purpose is to provide a forum for the communication, education, and resolution of potential problems relating to the project and fishery operations in the vicinity of the SOEP area.

Building Capacity

Capacity building is described by the United Nations Development Programme (UNDP) as *the sum of efforts needed to nurture, enhance and utilize the skills and capabilities of people and institutions at all levels — nationally, regionally and internationally — so that they can better progress toward sustainable development.*

Capacity building is premised on a comprehensive view that emphasizes the importance of institutional arrangements, appropriate policy and legal frameworks, and citizen participation for achieving sustainable management of resources. All of the topics discussed in this chapter contribute to capacity building. The objective of capacity building, as it pertains to aquatic resources, is to improve not only the quality of decision making, but also the sectoral efficiency of management performance in planning and implementation. It does not seek to resolve problems, but instead seeks to develop the capacity within people, communities, governments, and other organizations to resolve their own problems.

Co-management presupposes that local institutions, as well as government agencies, are capable of managing resources. However, in many cases, centralized resource management over many generations has resulted in the disappearance of local capabilities for resource management, including consensus

“The Sable Island Offshore Energy Project process began with a discussion of which groups belonged at the table. Working from the principle of mutual respect, all major issues in this initiative, including compensation, are close to being resolved.”

— Oil company executive

building, rule making, enforcement, and monitoring. For effective co-management, everyone needs to regain important skills — governments; NGOs; international professional associations; education, training, and human resource development institutions; research agencies; multinational corporations; banks, and other institutions.

Capacity building is supported by a number of institutional co-management arrangements. These foster co-management processes, strengthen community group relations to government agencies, support scientific research efforts to provide more knowledge of ecosystems, and engender new and strategic partnerships.

A mandate to “invest” a percentage of the resources harvested by outside users in the local communities also supports capacity building. The Skeena Fisheries Commission, for example, reinvests 25 per cent of their gross harvest. The Commission directs 15 per cent back into administration and 10 per cent into stock enhancement.

Capacity building is also evident in many of the land claims agreements signed in Canada.⁴⁴ The Nunavut Agreement provides

“New relationships. Being able to trust your fellow man. For the Aboriginal community, this is true co-management.”
 — *Aboriginal co-manager*

for a study of Inuit traditional knowledge pertaining to bowhead whales. It also provides for the involvement of local Inuit agencies in a wildlife harvest study. To strengthen local institutions, the James Bay and Northern Quebec Agreement recognizes the Cree hunting and fishing territory system, as well as the authority of traditional hunting and trapping leaders.

Building capacity is a long-term, continuing process for all stakeholders and agents for change. Four major ways to build capacity are identified here:

1. Improve the knowledge base to facilitate better decision making

Support research by improving data collection, maintenance and analysis, scientific and practical research and by incorporating traditional knowledge.

2. Develop better policies and strategies

Reform legislation and policies that hinder the sustainable management of resources and the adoption of integrated management approaches to coastal zones. Raise awareness of sustainable management practices at all management levels.

3. Enhance management practices and techniques

Train professional staff to adapt to the new paradigm based on participatory decision making. Support integrated ocean and coastal zone management in place of the more traditional sectoral approaches. Learn from the experiences of others and help

local institutions to become more self-reliant. Work at all levels to facilitate dispute resolution.

4. Reform institutions

Create partnerships involving user groups, NGOs, the private sector, and government. It is also important to strengthen and even create, where necessary, new cooperative arrangements to deal with the impacts of land-based activities on the marine environment.

Conclusion

The core characteristics of successful co-management regimes are interconnected. It is through a strong supporting institution that capacity building mechanisms can be pursued; for example, by helping to improve an institution's knowledge base and management techniques. Accountability and responsibility will be enhanced, in part, through the effective engagement of stakeholders. As knowledge is shared and parties grow to trust each other, the desire to work together toward operational sustainable management of the oceans environment is likely to deepen. Because all this takes time, one additional characteristic is required to help achieve successful co-management — patience. Although successful co-management does not happen overnight, recognizing the elements important to its pursuit are more likely to make such a goal attainable.



Chapter 5

Co-Management Issues to Be Resolved

The NRTEE round tables identified concerns that need to be addressed when applying co-management arrangements. Some of these issues focus on practical questions, such as who will pay for co-management. However, other questions are more theoretical, such as whether a certain co-management regime can accommodate all the various interests. Further discussion or clarification of the following questions is necessary to ensure the achievement of co-management goals.

Is co-management a code word for downloading costs?

Is co-management a code word for downloading costs from government to users? As governments search for ways to cut costs, will co-management be used as a means of assigning costs to users? Will potential partners and stakeholders be reluctant to enter into co-management agreements for fear of excessive financial costs?

Co-management should be a way of achieving cost efficiencies together with other goals such as stakeholder involvement and conservation.

How much does co-management cost and who pays for it?

The NRTEE was unable to find any case study analysis comparing the costs of implementing and managing under a co-management regime with those under existing regulatory systems. Various co-managers of land claims agreements advise that co-management systems, in some instances, cost more than the replaced regulatory systems. However, these costs included the transition costs of capacity-building and program design.

An assessment of the costs of co-management is necessary for its evaluation as a policy option. Any cost analysis must take into account the economic and non-economic impacts associated with overfishing a resource or damaging the oceans environment.

Is there sufficient political will for co-management to succeed?

The new oceans agenda may be pointing toward co-management, but unless there is a demonstrated political will in the form of budget allocations and supportive institutions, co-management will never be applied effectively. For example, although the Arctic coastline is our longest, and numerous governments have stated their support for protection and preservation of the Arctic environment, there is no full-time Arctic marine research facility, perhaps suggesting limits on the level of political commitment.

“There is a need for our government to live up to its obligations. For example, we have three oceans. The coastline of one is much longer than the coastline of the other two, yet we do not have a year-round research facility there. It is astonishing that we have not made this national commitment.”

— *Federal Arctic S&T advisor*

Can co-management address problems in fisheries management?

In round table discussions, the debate on the application of co-management to fisheries inevitably became a lightning rod for a debate on fisheries management, an exceedingly complex and controversial subject in public policy.

The dilemma in fisheries management is how to protect the resource base while main-

taining equitable access to it. There is general consensus that the existing system has become one of cumbersome micro management that has, in many cases, failed to ensure a sustainable fishery. These beliefs are leading to the current openness to new forms of management.

Stakeholders at various round tables offered theories as to why fisheries are unsustainable: too many people chasing too few fish; fishing technology that is ecologically destructive; fishing practices that do not discriminate among species, thus creating a large by-catch to be thrown back overboard; licensing schemes that encourage an absentee landlord mentality; and quotas based on faulty or imprecise stock assessment systems.

Participants were interested in applying co-management, but needed more specific examples of how it could address their existing concerns related to open access, limited entry, and resource conservation strategies. They also wanted assurances that co-management would not be used to exclude stakeholders from resource management decisions. Whether co-management can address problems in fisheries management can only truly be determined by putting the theory into practice. While there may be some risk to this, the status quo system is not a preferable alternative.

Although public consultation may be one of the keys to success in co-management, hasn't it sometimes been ineffective?

While public consultation has become a ritual in policy development, there is no standard code of practice.

Methodologies and results vary widely, as do participants' expectations. The terms “consultation” and “public participation” are used

to describe a variety of activities from one-time information sessions and policy advisories to full round-table processes where draft legislation is the end-product. Often, bureaucrats are sent out to consult without fully working through the process or the product. Also, stakeholders agree to participate without full knowledge of what this participation involves and where it leads. On both sides, there are expectations that the consultation will have some influence. Unfortunately, when these processes fail to deliver on the expectations created, the results of the consultation and the validity of the policies upon which they are based become suspect.

Recent federal initiatives on the oceans front, such as the *Oceans Act*, proposed new fisheries legislation; the proposed national program of action on land-based sources of marine pollution encouraged participatory processes and stakeholder involvement in decision making. The *Oceans Act* gives the Minister of Fisheries and Oceans the authority to collaborate with a wide range of stakeholders to develop and implement a national strategy for the management of estuarine, coastal, and marine ecosystems in Canadian waters. The Oceans Management Strategy could herald a new participatory era in ocean activity management. If reintroduced, a new fisheries act could contain new fisheries management approaches, including partnership provisions with fishery groups and with the provinces on habitat management.

The opportunity to benefit from the current initiatives will only be realized if governments and stakeholders are able to establish solid working relationships through ongoing and meaningful consultation processes.

“Co-management rests on a commitment to transparent and open processes. It also rests on a commitment to real consultation and involvement. Many of us have been part of a lot of token consultations. The decision has already been made, and then the communities, the environmentalists and others are brought in so we can air our views. But this doesn't influence the decision-making process. If the government wants to move toward co-management, then weight has to be given to the views of the people they are trying to involve as partners in that process.”

— *Coastal community representative*

Will the pursuit of co-management take a lot of time?

One of the key challenges of co-management is the implementation of decisions within realistic deadlines. If we want to encourage investment in activities related to wealth creation, there is a strong need to have decisions made in a very timely manner and to have a well-established framework so that investors know the rules prior to investment. However, it must be recognized that many of the concepts on which co-management depends, such as institution- and trust-building, take time to develop. Therefore, a long-term commitment to the process is also essential.

“The Skeena Watershed Committee is a multistakeholder, consensus-based body that includes the provincial government, the federal government, the First Nations of the Skeena Watershed as well as the commercial industry represented by the North Coast Advisory Board and the Skeena River Watershed Sports Fishermen's Coalition. The operating principles for the Committee were adapted from the principles for consensus that came out of the NRTEE. The process began in 1992, and in 1994 a consensus was achieved on a three-year fishing plan. We struggled very hard to include in this fishing plan the conservation issues for coho and steelhead and the economic issues that drove the sockeye and pink salmon fishery. It's not perfect. But nobody ever said it would be perfect.”

— *Federal bureaucrat*

Who are the stakeholders?

Stakeholders are those individuals or organizations who are interested in, can significantly influence, and/or are influenced by or concerned about, oceans use. They are members

of communities that share an interest in ocean issues. They may be categorized individually or by association with groups organized around specific ocean policy issues; as public sector, private sector, or non-profit sector; or as concerned individuals.

Will it be difficult to accommodate the interests of co-managers, stakeholders, and the public in a co-management agreement?

In a co-management regime, there are co-management partners and stakeholders. Partners are recognized as having rights and responsibilities in the co-management arrangement. Stakeholders are a broader constituency, some of whom may or may not also be co-managers.

For example, in seal harvesting the federal government and seal harvesters could enter into a co-management agreement that would establish harvest allocation among user groups, harvesting rules, monitoring systems, and contributions to research. Co-management partnerships could take into account a broad range of sometimes vociferous stakeholders, including the European consumer market, the communities that have traditionally relied on the seal hunt, the tourist industry, and environmental and scientific interests.

Accommodating the interests of the broader community of stakeholders increases the likelihood that decisions will be supported. It therefore increases the chances for success in co-management initiatives.

Management of the public interest is a major consideration in the application of co-management to publicly owned natural resources. Where certain parties lack any decision-making authority, the role of the government partner will have to include protection

of the public interest and public accountability for resource conservation.

How will co-managers be chosen?

Various round-table participants expressed concern that co-management arrangements could end up being private arrangements between the government and special groups at the expense of the larger community of stakeholders. To ensure that co-managers are representative of stakeholder interests, a co-manager accreditation system might be considered. For example, the Oceans Management Strategy of the *Oceans Act* and new fisheries legislation could give the Minister authority to determine the criteria that a stakeholder group must meet in order to be considered representative of a class of stakeholders for purposes of partnership in a co-management agreement.

“One of the crucial things in co-management arrangements is to have the stakeholders involved early on.”

— *International co-management expert from Otago University, New Zealand*

“Co-management does not mean ‘everyone managing everything.’ It involves having the appropriate players at the table in each management situation.”

— *Industry association representative*



Conclusions and Recommendations

International and national legal frameworks are now in place to establish a new ocean regime based on the principles of sustainable development. The United Nations Convention on the Law of the Sea, 1982, entered into force in 1994, and a year later the United Nations Fisheries Agreement was adopted at the United Nations Conference on Straddling and Highly Migratory Stocks. Canada's *Oceans Act* was proclaimed in January 1997. Today, national initiatives are under way to revamp marine services and port management, and to address land-based sources of marine pollution. A new fisheries act has been promised by the year 2000.

Much work must still be done to put legal frameworks into practice. To illustrate political commitment to working with all nations of the world toward sustainable development, Canada must ratify the Law of the Sea and the UN Conference on Straddling and Highly Migratory Stocks. At the same time, at home, the federal government must engage all members of Canada's ocean community of interests in a meaningful dialogue aimed at developing the Oceans Management Strategy,

as promised in the *Oceans Act*. The Oceans Management Strategy debate must include the economic, socio-political, cultural, and value frameworks of a broad range of stakeholder interests.

To move the concept of co-management into practice, the NRTEE recommends the following action with respect to the Oceans Management Strategy:

- Apply co-management on all three coasts to specific fisheries, aquaculture, protected areas, environmental management, and ocean research strategies.
- Build trust between resource users and regulatory agencies through co-management arrangements. Jointly set priorities for research and information gathering. Make scientific information available to co-managers and incorporate traditional knowledge into the information base.
- Include strategies for linking broader groupings of stakeholders — this may include interests far removed from the actual region — to co-managers in a fashion that is open and transparent.

The NRTEE recommends action on two other fronts as well:

- Establish a series of pilot co-management arrangements in cooperation with various user groups through departments such as the Department of Fisheries and Oceans, Department of Indian and Northern Affairs, Heritage Canada, Environment Canada, and Transport Canada. Review existing experience to better determine needs, costs, and benefits.
- Clarify and standardize the use of terminology in future environmental protection legislation and in the promised new fisheries legislation so there is a clear understanding of what is meant by co-management, partnership, and consultation.

While governments have responsibility for establishing the regulatory base for actions, sustainable management requires management systems that move beyond regulatory regimes — to involve stakeholders as trustees of the oceans. The success or failure of these new oceans management initiatives may well be determined by the success of co-management arrangements and stakeholder participation in policy development and implementation. Stakeholder participation is of particular concern for regional management — in protected areas or heavily used ocean space, for example — and for trade relationships (e.g., the current debates about the seal harvest and fur trapping). To facilitate stakeholder capacity-building, the NRTEE recommends the following actions:

- **Reinvest** — Place a percentage of the value of harvested resources back into capacity-building activities within local communities of stakeholders.
- **Collaborate** — Organize co-manager infor-

mation exchange systems, including annual conferences, joint documentation of best practices, and collaborations with international organizations.

- **Study** — Include co-management studies in the curricula of Canadian universities' resource management institutes and ocean studies programs, thus furthering the study of co-management institutional arrangements and developing expertise useful in the application of co-management legal frameworks and policy analysis criteria. Labour organizations and resource user groups who are directly affected by the unsustainable management of the ocean and its resources should provide financial support for these programs.

The search for new management arrangements will test the abilities of federal government departments to cooperate more effectively and to build new relationships at the provincial and municipal levels. Failure to do so will perpetuate the current limitations on effective coastal zone management strategies and the apparent inability to manage fish stocks sustainably.

The United Nations has declared 1998 the International Year of the Oceans. World attention will be focused that year on restoring the economic and ecological well-being of the oceans.

Although the Canadian agenda outlined above is ambitious, it offers an opportunity for Canadians to make meaningful headway in addressing pressing ocean issues. The NRTEE offers this co-management guide to Canadians as a contribution to the International Year of the Oceans, and to the implementation of sustainable management strategies for the ocean environment and its resources.

Endnotes

- 1 Adapted from Evelyn Pinkerton and Martin Weinstein, *Fisheries That Work* (Vancouver: The David Suzuki Foundation, 1995) and stakeholders' input at round tables.
- 2 Department of Fisheries and Oceans, *Towards a Sustainable Development Strategy for the Department of Fisheries and Oceans, A Discussion Paper* (Ottawa, 1997), p. 5.
- 3 Tim Gray, *The Politics of Fishing*, Global Environmental Change Programme (Brighton: University of Sussex, 1996).
- 4 The total cost to the taxpayer of the cod fishery closure is still being tabulated. The two federal programs designed to provide transitional programs for displaced workers, the Atlantic Groundfish Strategy (TAGS) and its predecessor, the Northern Cod Adjustment and Recovery Program (NCARP), have a combined budget of over \$2.8 billion.
- 5 World Commission on Environment and Development, *Our Common Future* (Oxford: Oxford University Press, 1987), p. 312.
- 6 Elisabeth Mann Borgese, "The Process of Creating International Ocean Regimes to Protect the Ocean's Resources," in *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony*, ed. by Jon Van Dyke, Durwood Zaike and Grant Hewson (Covelo, California: Island Press, 1993), pp. 34-35.
- 7 Robert Jay Wilder, "Law of the Sea Convention as a Stimulus for Robust Environmental Policy: the Case for Precautionary Action," in *Ocean Yearbook 12*, ed. by Elisabeth Mann Borgese et al. (Chicago: University of Chicago Press, 1996), pp. 207-221.
- 8 The Nunavut Agreement is one among many Aboriginal land claims agreements to have co-management provisions; however, its specific water (Article 13) and marine management (Article 15) provisions and the significant geographic regions to which they apply are considered unique in the context of oceans co-management.
- 9 Other guiding principles of sustainable development include, for example, "pollution prevention, polluter pays, public participation, community-based management, intergenerational equality, and indigenous rights." See David VanderZwaag, "Legislating for Integrated Marine Management: Canada's Proposed Oceans Act of 1996," in *The Canadian Yearbook of International Law 1995* (Vancouver: University of British Columbia), pp. 314-315.
- 10 World Commission on Environment and Development., *op. cit.*, pp. 8, 44-46.
- 11 See case studies in Appendix II for more information on the initiatives mentioned in this paragraph.

- 12 David VanderZwaag, ed., *Canadian Ocean Law and Policy* (Markham: Butterworth, 1992).
- 13 Arthur J. Hanson, *Sustainable Development and the Oceans — Navigating Our Way From Rio* (Winnipeg: International Institute for Sustainable Development, 1993), p. 13.
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- 16 Department of Fisheries and Oceans, *Backgrounder: Integrated Management* (Ottawa, 1996).
- 17 Food and Agriculture Organization of the United Nations (FAO), *Precautionary approach to fisheries*, Part 2: Scientific Purpose. FAO Fisheries Technical Paper, No. 350, Part 2 (Rome: FAO, 1996) 210p.
- 18 *Oceans Act*, Part II, subsection (30)(c).
- 19 Food and Agriculture Organization of the United Nations, *op.cit.*
- 20 *Ibid.*, p. 6.
- 21 Stakeholders, for the purpose of this document, will be defined in the broadest possible sense as those individuals or organizations who are interested in, can significantly influence, and/or are influenced by oceans policy issues. Stakeholders include affected interests and authorities.
- 22 See Appendix II, p 52.
- 23 *Ibid.*, p. 54.
- 24 Adapted from Fikret Berkes, Helen Fast, and Mina K. Berkes, *Co-management and Partnership Arrangements in Fisheries Resource Management and in Aboriginal Land Claims Agreements*, March 1996 (literature review commissioned by the NRTEE).
- 26 Royal Commission on Aboriginal Peoples, *Volume 2: Restructuring the Relationship* (Ottawa: Minister of Supply and Services, 1997), p. 666.
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- 31 *Calder v A.G. B.C.* [1973] S. C. R. 313; *Guerin v R.* [1084] 2 S.C.R. 335; and *R v Sparrow*, [1990] 1 S.C.R. 1075.
- 32 Report of the FAO/Japan Expert Consultation on the Development of Community-Based Coastal Fishery Management Systems for Asia and the Pacific, FAO Fisheries Report 474, FIDP/R474 (1993), p.7, referred to in B. Abregana et al., *Legal Challenges for Local Management of Marine Resources, A Philippine Case Study* (Halifax, Nova Scotia:

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- 33 The two approaches outlined here have been provided to the NRTEE by David VanderZwaag, Professor of Law, and Director, International Linkages, Faculty of Law, Dalhousie University.
- 34 J. Harvey and D. Coon, *Beyond Crisis in the Fisheries: A Proposal for Community-Based Ecological Fisheries Management* (Fredericton, New Brunswick: Conservation Council of New Brunswick Inc., 1997), pp. 46-52. Also see R. MacCallum, "The Community-Based Management of Fisheries: A Legislative Proposal for Atlantic Canada" (in press, *Dalhousie Law Journal*, 1998).
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- 36 In *Our Common Future*, the World Commission on Environment and Development observes, "Sectoral organizations tend to pursue sectoral objectives and to treat their impacts on other sectors as side effects, taken into account only if compelled to do so" (p. 63). The World Commission adds: "Sustainability requires the enforcement of wider responsibilities for the impacts of decisions" (p. 63).
- 37 *Ibid.*, p. 61.
- 38 *Ibid.*, p. 60.
- 39 *Ibid.*, p. 63.
- 40 *Ibid.*, p. 56.
- 41 *Ibid.*, p. 64.
- 42 *Ibid.*, p. 69.
- 43 *Ibid.*, p. 62.
- 44 *Ibid.*, p. 52.



Appendix I — Designing a Co-Management System

The following appendix is intended to provide an outline of factors to consider when determining the appropriateness of co-management for a specific issue or project. This appendix also provides operating procedures for establishing a co-management system, as well as a summary of NRTEE guidelines for consensus-building.

Guiding Principles for Evaluation: Is This Project Suitable for Co-Management?

Certain questions must be asked from the outset, in order to determine whether the proper institutional structure and support system can be set up to make co-management a viable option in a particular region.

1. *Is the unit of co-management definable?*

Co-management initiatives begin with the identification of a problem and a recognized need to make changes to an existing manage-

ment regime. The need for change may be proactive. Or it may follow from a perceived problem or crisis, or be a by-product of reform policies.

A first step is to define the unit — the issue, the resource, the geographic area — that is to be co-managed. The unit must relate to stakeholder interests. The unit should not be so large that managers will be unable to focus. Nor should it be so small that integration with larger issues is impossible.

2. *Can participants agree on a set of objectives for the co-management regime?*

Once the unit has been identified, can participants agree on a list of objectives that the co-management regime would hope to achieve? Because there will be a variety of expectations, it is important to find common ground, to prioritize objectives, and to be realistic about limitations. The objectives must be very specific so everyone understands the trade-offs involved.

Is This Project Suitable for Co-Management?

1. Is the unit of co-management definable?
2. Can participants agree on a set of objectives for the co-management regime?
3. Can criteria for membership as co-managers and stakeholders be established? At least one member of the co-management regime must be a government representing the public interest.
4. Is there a mandated basis for the co-management regime, or can a mandate be created?
5. Can the co-management regime be financially supported, and does it include financial or in-kind contributions from members?
6. Can members agree on a process for establishment of a fact base, to be used for information-sharing, capacity-building, public communications, dispute resolution, evaluation, and for revising the process to reduce the risk of unsustainability?
7. Will the parties participate voluntarily, recognizing that there is mutual value to be gained from the co-management system?

3. Can criteria for membership as co-managers and stakeholders be established? At least one member of the co-management regime must be a government representing the public interest.

Initially, the process should be inclusive and involve affected stakeholders representing a broad range of interests. It is important to identify supporters and non-supporters and to include everyone in initial scoping exercises.

The preliminary goals, objectives, and scope of activities will assist participants in determining whether they are affected stakeholders and whether they wish to continue their involvement. At the same time, a policy of inclusion builds trust within the broader policy community.

As the goals and objectives become more focused, membership will change. Stakeholders will opt in or out. Establishment of criteria for

membership will also include analysis of the respective roles of various members, including the role of the government member.

Co-managers will be those stakeholders who will be formally recognized as parties to the co-management regime, such as signatories to an agreement or those identified in legislation. A government member is necessary to give the project validity under the definition of co-management.

4. Is there is a mandated basis for the co-management regime, or can a mandate be created?

A co-management regime must have a mandated basis in order to establish its legitimacy. For example, co-management provisions are included in some of the comprehensive land claims agreements. Witness the Skeena Watershed Committee, established by a memorandum of understanding between the par-

ties, which provided for the creation of legislation that allowed the Minister to enter into management agreements. Depending on the agreement desired and the type of delegation to be included, the need for legislative changes must be determined.

5. *Can the co-management regime be financially supported, and does it include financial or in-kind contributions from members?*

Co-management is not meant to replace existing management systems with volunteer initiatives. Both public and private sector funding is necessary to create the organization, then to support administration, research and information distribution. Lack of funding may result in a process that tends to force rather than facilitate solutions and cannot be considered a viable alternative to a traditional fully funded regulatory process. Assessing the availability of funding is therefore an essential preliminary step in determining whether co-management is an option.

6. *Can members agree on a process for establishment of a fact base, to be used for information-sharing, capacity-building, public communications, dispute resolution, and evaluation, and for revision of the process to reduce the risk of unsustainability?*

Ability to agree on process issues will provide an insight into the strengths and weaknesses of the group. Can members of the group collaborate and develop a working relationship? If members — co-managers and stakeholders — are unable to agree on administrative matters, this probably means the group will have

difficulty with substantive management issues. Help may be required in the form of consensus-based decision-making processes and dispute resolution mechanisms.

7. *Will the parties participate voluntarily, recognizing that there is mutual value to be gained from the co-management system?*

For co-management to work, partners and stakeholders must be motivated; they must be willing to put real effort into achieving co-management goals. No one should be coerced.

Step One:	Scope the Issue
Step Two:	Define the Unit of Management
Step Three:	Identify the Participants
Step Four:	Design the Process
Step Five:	Define the Environmental, Economic and Social Issues
Step Six:	Develop a Management Plan
Step Seven:	Make Decisions and Implement Solutions
Step Eight:	Monitor, Evaluate and Adapt Processes

Operating Procedures for Co-Management Processes

What follows is a guide to developing a process to create co-management systems. The guide is based on previous work of the NRTEE in round-table process design and consensus decision making. It is also based on the input of stakeholders at Oceans Environment and Resources round tables. The

accountability checklist is from the work of a federal task force

1. Scope the Issue

Co-management systems are usually driven by an identified need on the part of stakeholders to initiate changes in existing management regimes. The incentive may be a crisis such as resource depletion, reduction or changes in resource allocation, or uncertainty caused by new activities or natural disasters. Stakeholders may also be driven by a need to generate revenue, to create more efficiencies in management operations, or to respond to new economic opportunities.

A scoping initiative will be wide-ranging and will identify numerous issues, implications, and interests. It can be launched by any stakeholder. The greater the variety of interests present, the wider the scoping exercise will be. Who is initiating the process affects who gets involved and how it is structured. However, as the process evolves, all participants should determine process design.

The scoping process should follow a timetable for delivery of decisions or recommendations.

2. Define the Unit of Management

Once the scoping exercise has been completed, a long list of issues representing a variety of management units will be identified. From this list, a unit of management — the boundaries of the issue — must be defined. The unit of management must be workable. Boundaries should not be so large that managers will be unable to focus adequately on specific local problems or issues of mutual concern. Nor should they be so small that managers will be unable to address the effects of management

decisions on influencing larger scales of management.

The co-management case studies in Appendix II may provide some guidance when it comes to defining the scale and unit of management.

3. Identify the Participants

Participants should include everyone whose involvement is necessary to make the process viable. This includes all those who will be affected by the decisions proposed. As the process develops, the interests at stake may change, as may the stakeholders' actual interests.

Allow stakeholders to self-select to ensure that the process is not perceived to be controlled or top-down. Contact with potentially interested participants should be proactive and ongoing and might involve small group information sessions, community meetings, and a communication strategy aimed at participants and the public.

4. Design the Process

Participants will establish guiding principles. The purpose of setting out guiding principles is to determine collective values and goals. Principles help to create a group identity that overrides individual needs and focuses on the greater co-management objective. Principles could include, for example: sustainability of the resource; fair and equitable sharing of the resource; benefits to community; and accountability.

Participants should also choose a leader. A neutral third-party facilitator, mediator, or negotiator will often make the best leader. However, anyone who is willing to put aside his or her personal agenda and become a

steward for the needs of the group has the potential to be a good leader. A leader must also be able to remind participants of the rules of conduct and guiding principles. A leader should be seen to be neutral at all times.

All participants need to be able to express their commitment and any concerns they may have.

Allow the group to design its own process. The following process design outline may serve as a useful checklist.¹

Process Design Checklist

Logistics

- Where and when will negotiations/meetings take place? Is the site neutral?
- Will support staff be necessary?
- Who will coordinate and be responsible for location, accommodation, equipment, etc.?
- What is the time frame for negotiations?

Funding

- How will negotiations/meetings be funded?
- Are all the parties able to contribute to the cost?

Type of Process

- Will it be informal or formal?
- Will it be mediation, negotiation, or arbitration with a delegated decision maker?
- Will facilitators, mediators, or lawyers be involved?
- Who will pay for these services?

Style of Process

- Is it a fact-finding, or a win/win, process?

Structure of Process

- Will decisions be made by consensus or by vote?
- If decisions are made by vote, how will voting privileges be assigned?
- Will voting by proxy be permitted?
- Who will develop agendas, and how? What will the approval process for the agendas be?
- Will all discussion be recorded or only decisions?
- What information is confidential to the parties? Should it be protected and how?
- Will the media be involved?
- If the media are involved, who will convey information to the media and in what format?

- Who will present a report regarding negotiations for public access?
- How will this report be presented?
- Are the negotiations or meetings confidential, and to what extent do those attending have a duty to respect this confidentiality?

Dispute Resolution

- When disputes or disagreements arise, how will they be dealt with?
- Will caucusing be allowed?
- What if there are areas of impasse?

Information

- What information will be expected from each party and in what format?
- Who will present information and how will it be presented?
- If outside expert advice is required, how will the expert be chosen? Who will pay?
- Who will bear the cost of information distribution?
- Who will receive information — the representatives or all members of the constituency?

Rules of Conduct

- What rules of conduct will the participants establish?
- Will they formally include rules such as: no interrupting; no swearing; no smoking; speaking in turn; focusing on objectives, equal participation, and honesty?

Accountability checklist

The checklist on accountability developed by the Deputy Ministers' Task Force on Service Delivery has been included here to ensure that sufficient checks and balances remain in place for the protection of all stakeholders.² The checklist is useful in identifying whether all parties' needs are being met and whether they should have any concerns about the process design.

Does the Arrangement achieve the goals of the legislation for which it is being developed?

- Are the persons who will carry out the tasks under the arrangement properly qualified and trained to do so? Is there responsible delegation or are appointments being made?
- Is proper provision being made for the monitoring and control of the work of these persons? Is the responsible body still actively involved?
- Are proper means in place to receive reports concerning the carrying out of the tasks and the dealing with subsequent problems? Is the responsible body still informed and equipped to respond?

Does the Arrangement achieve the goals of other relevant federal legislation and policies?

- Examples include the *Official Languages Act*, the *Privacy Act* and the *Access to Information Act*. Are other areas of government accountability properly addressed?

Note: Beyond Ministerial accountability, various federal acts raise different accountability issues. These public safeguards cannot be eroded by either shared or transferred responsibility. Consequently, any agreement must also take these measures into consideration, as assurance to the public that no erosion on these matters will occur.

Is information on the Arrangement readily available?

- Was there adequate consultation with affected publics before the arrangement was put in place? Is there a conscious effort to liaise?
- Is there transparency in the arrangement? Are the arrangement and essential facts concerning its operations on the public record and accessible to the public?
- Is information on the arrangement provided to Parliament at the time it is put in place (e.g., tabling in the Commons), and periodically thereafter (e.g., in the reporting process to Parliament)? Is there a formal way to communicate the arrangement?

Appropriate legal questions must also be addressed. It should be determined at the outset whether amendment to legislation must be sought. If, for example, the exercise of discretionary decision making is to be involved, do existing statutory provisions allow for such arrangements?

5. Define the Environmental, Economic, and Social Issues

Determining the environmental, economic, and social issues, including obstacles and opportunities, helps to determine trade-offs and focus the project.

The steps in this process are:

- identifying issues
- brainstorming for ideas, and
- negotiating points of a co-management agreement.

The identification process requires that participants provide all information relevant to the proposed co-management regime. For example, governments will identify:

- legislative, regulatory, and jurisdictional opportunities and constraints;

- services being performed by government parties that may be affected by the co-management regime;
- the cost of services and goods provided by government — government must provide this so, if services are cost-shared, each contributing party is fully aware of how its contribution will be allocated;
- constraints on the production of goods and services — governments may need to enforce standards; monitor quality control, resource access, catch or harvest rates, quotas, royalties, etc.;
- reasons for wishing to co-manage;
- concerns and goals; and
- any first-hand or experiential knowledge regarding the resources at hand, and then

make available all scientific knowledge and research regarding the resources in question.

Other participating stakeholders will identify:

- reasons for wishing to co-manage;
- concerns, needs, and short- and long-term goals;
- types of goods and services parties might be willing to produce or provide;
- capability to supply goods and services; and
- ways of raising revenues by constituencies for cost-sharing arrangements.

Brainstorming for ideas is the innovative thinking period when ideas are proposed, analysed and reworked, and solutions are identified.

6. Develop a Management Plan

During this phase, trades are made regarding resources and funding. Also, there may be divestiture of some management authority by government to the private sector. The management plan that is created might include the following:

- form of agreement
- terms of agreement
- scientific assessment
- quality control/standard enforcement/monitoring
- enforcement or regulations under the appropriate legislation
- review process
- dispute resolution process
- identification of parties directly responsible for the co-management committee
- conservation needs
- resource-sharing mechanisms among parties
- limits to resource accumulation by individuals
- mechanisms for increased or decreased

resource use by parties to agreement, and by other citizens

- mechanisms for capacity-building, and
- funding amounts and method of payment.

Once the points of agreement are determined, all parties must go to their constituencies for ratification. The co-management agreement must then be drafted and reviewed. The co-management agreement needs the following key elements:

- identification of the co-management parties
- description of the project
- duration of the agreement
- description and identification of the management committee
- obligations of the government partner(s)
- obligations of the non-government partner(s)
- auditing and monitoring arrangements
- publication of particulars of the agreement
- termination provisions
- indemnification for third-party liabilities
- indemnification to each other
- notices from the parties
- dispute resolution provisions
- applicable laws
- funding and resource provisions, and
- amendment provisions.

7. Make Decisions and Implement Solutions

The agreement is the beginning of the implementation phase of the co-management process.

Although the agreement is the basis for implementation, the process itself will involve numerous decision-making points and a different process from the one used to create the agreement. Co-managers should build on the co-management agreement as a reference, according to the following guidelines:

- Use a collaborative decision-making process.
- Use an adaptive process.
- Make the best use of science and data.
- Incorporate regional and national interests.
- Use an ecosystem-based approach when developing on-the-ground management strategies.

8. Monitor, Evaluate, and Adapt Processes

Ongoing monitoring and evaluation according to established management principles will form part of the co-management process. On the basis of the results of this monitoring and evaluation, processes will evolve and be modified to reflect lessons learned and changing circumstances.

The Consensus-Building Tool

Co-management involves the development of a governance-bridging mechanism whereby institutions adapt and framework legislative guidelines such as those found in the *Oceans Act*, and/or a land claims agreement are translated into practice. Such a process also involves the resolution of diverse interests to find the consensus necessary to advance the management system.

The NRTEE, together with provincial and territorial round tables in Canada, has developed guiding principles for consensus processes that may help co-management partners.³

NRTEE Consensus Guiding Principles

1. **Purpose-driven** — People need a reason to participate in the process.
2. **Inclusive rather than exclusive** — All parties with a significant interest should be involved.
3. **Voluntary** — The affected or interested parties should participate voluntarily.
4. **Self-designed** — The parties should design the consensus process.
5. **Flexible** — Flexibility should be designed into the process.
6. **Giving equal opportunity** — All parties must have equal access to relevant information and the opportunity to participate effectively throughout the process.
7. **Respecting diverse interests** — Acceptance of the diverse values, interests, and knowledge of the parties involved in the consensus process is essential.
8. **Accountable** — The parties are accountable both to their constituencies and to the process they have agreed to establish.
9. **Time limited** — Realistic deadlines are necessary throughout the process.
10. **Implementable** — Commitment to implementation and effective monitoring is an essential part of any agreement.

Endnotes

- 1 Baker, Deborah. "Baker's Outline for Getting to a Co-management Agreement" (Livingstone & Company, Barristers and Solicitors, Dartmouth, Nova Scotia). A special submission to the NRTEE.
- 2 Deputy Minister's Task Force on Service Delivery, "Ministerial Accountability," in *Examining the Key Questions, Part 1*. Ottawa: Canadian Centre for Management Development, October 1996), p. 28. Available on the Internet at www.ccmd.gc.ca
- 3 National Round Table on the Environment and the Economy, *Building Consensus for a Sustainable Future: Guiding Principles* (Ottawa: National Round Table on the Environment and the Economy, 1993).



Appendix II — Co-Management Case Studies

These 21 case studies represent a mix of Canadian and international experience in a variety of areas, including: fisheries management, coastal zone management, the management of stakeholder relationships, watershed management, management of marine protected areas, and local management of natural resources. They are provided to illustrate co-management applications in dealing with a range of management issues under a variety of conditions.

CASE STUDIES

Mandate Issues

- Land Claims Agreements, Canada
- Beaufort Sea Beluga Management Plan, Inuvik, Northwest Territories

Fisheries Management Issues

- Lofoten Islands Cod Fishery, Norway
- Coastal Fisheries, Japan
- Municipal Fisheries, Philippines
- Bay of Fundy Herring Fishery, Canada

- Management by Community Quotas, Sambro, Nova Scotia
- Skeena Watershed Committee, British Columbia
- Kuskokwim River Management Working Group, Alaska
- Prince William Sound Aquaculture Corporation, Alaska

Integrated Coastal Management

- Chesapeake Bay Programme, United States
- St. Lawrence Vision 2000, Quebec
- Great Barrier Reef Management Strategy, Australia

Management of Stakeholder Relationships

- Pacific Fishery Management Council, United States
- Stakeholders and Conservation in a West African Lagoon

Watershed Management

- The Fraser River Basin First Nations Memorandum of Understanding, Canada

- Bras d'Or Watershed Stewardship Proposal, Cape Breton Island, Nova Scotia

Management of Marine Protected Areas

- Mafia Island Marine Park, Tanzania
- The Gwaii Haanas Agreement, South Moresby, British Columbia

Local Management of Natural Resources

- Cree Subsistence Fisheries, James Bay, Quebec
- Community Management in the Maine Lobster Industry, United States

Land Claims Agreements, Canada

Management Issue: Originally, Aboriginal people in Canada had no legislated rights to resources except through the treaties signed in the 1880s and the early 1900s. These treaties covered part of Canada, but excluded much of the Atlantic Provinces, Quebec, British Columbia, the Northwest Territories, and the Yukon. To make way for northern development projects (for example, James Bay), and to carry out Canada's comprehensive claims policy in these remaining areas, a number of agreements were signed between Aboriginal groups and governments.

Mandate: Fish and wildlife co-management in the north started with the 1975 James Bay and Northern Quebec Agreement, the first of the modern comprehensive land claims agreements in Canada. This was followed by the Inuvialuit Final Agreement of 1984, the Gwich'in Comprehensive Land Claim Agreement of 1992, the Nunavut Agreement of 1993, and others.

Process: Each of these agreements has a chapter (Section 24 in the case of the James Bay and Northern Quebec Agreement and Chapter 12 in the case of the Gwich'in Agreement) that specifies the sharing of jurisdiction for fisheries and wildlife management, and which establishes an institutional structure in the form of management boards and joint committees to implement co-management. For example, Article 5, Part II of the Nunavut Agreement specifies membership to the Nunavut Wildlife Management Board (the main co-management institution under that agreement), meetings, by-laws, powers, duties, functions, and responsibilities. Typically, each board has a chair, which rotates between Aboriginal and government parties, and an equal number of government and Aboriginal representatives. For example, the comité conjoint of the James Bay Agreement has three Cree, three Inuit, two Naskapi, four Quebec government and four federal government members. In most cases and for most resources, these co-management committees act in an advisory capacity and may make recommendations directly to the appropriate minister.

Capacity Building: None of the agreements has formal provision for training, but the claims process in each case has resulted in training for leadership. As well, the social and economic development provisions of the agreements have produced a cadre of Aboriginal administrators. Some of the agreements specify the involvement of Aboriginal institutions in the process of co-management. For example, the Nunavut Agreement provides for a study of bowhead whales using Inuit traditional knowledge and for the involvement of local Inuit agencies in con-

ducting a wildlife harvest study. The James Bay Agreement recognizes the Cree hunting-fishing territory system and the authority of traditional hunting/trapping leaders, thus strengthening local institutions.

Features to Note: These land claims agreements provide legally defined rights for local users in decision making for resource use, a feature missing in other kinds of co-management arrangements in Canada involving non-Aboriginal fishers. Additional agreements are likely to be negotiated and enacted in the coming years through the devolution of powers from the federal and provincial governments to regional governments representing Aboriginal peoples.

Sources:

Report of the Royal Commission on Aboriginal Peoples. 1996. Vol. 2, Part 2. Ottawa: Supply and Services Canada.

In All Fairness: A Native Claims Policy. 1981. Department of Indian Affairs and Northern Development.

Beaufort Sea Beluga Management Plan, Inuvik, Northwest Territories

Management Issue: Prior to the signing of the Inuvialuit Final Agreement in 1984, beluga populations in the Inuvialuit Settlement Region were managed through a variety of federal laws combined with informal self-regulation. Once the Agreement was signed, it became necessary to ensure that management practices were consistent with the terms of the agreement. Moreover, increasing beluga populations and the growing Inuvialuit interest in harvesting beluga were recognized as factors that needed to be monitored by resource users

and managers to ensure sustainable harvests of the thriving beluga stocks. The Beaufort Sea Beluga Management Plan was developed in response to these needs.

Mandate: The Plan is intended to provide optimum harvest levels for the Inuvialuit while ensuring the sustainability of beluga stocks in the Beaufort Sea, and to ensure efficient harvests with low loss rates.

Process: In 1986, the Minister of Fisheries and Oceans established the Fisheries Joint Management Committee (FJMC) under the Inuvialuit Final Agreement to assist the Inuvialuit and Canada in administering the rights and obligations related to fisheries in the Inuvialuit Settlement Region. The Beaufort Sea Beluga Management Plan was developed through a collaborative process among the hunters and trappers committees of Aklavik, Inuvik, and Tuktoyaktuk; the FJMC; and the Department of Fisheries and Oceans (DFO). The Plan is to be implemented by the hunters and trappers committees, the Inuvialuit Game Council, DFO, and the FJMC. The job of allocating the total allowable catch (TAC) has been delegated to the Inuvialuit Game Council, with the hunters and trappers committees allocating their portions in their communities. The FJMC is responsible for deciding whether a portion of the TAC can be allocated for scientific purposes. Under the Plan, the Beaufort Sea is divided into four management zones to facilitate the evaluation of development proposals.

Capacity Building: The Plan specifies that cooperative research programs should continue. A variety of educational programs for hunters and the public are offered under the plan.

Features to Note: The Plan is intended to contribute to an international management

agreement to be developed by the Alaska Inuvialuit Beluga Whale Committee.

Source:

Fisheries Joint Management Committee. 1991. *Beaufort Sea Beluga Management Plan*. Inuvik, N.W.T.

Lofoten Islands Cod Fishery, Norway

Management Issue: Because of cod migration routes, the Lofoten Islands in north-west Norway have supported a major cod fishery since ancient times. The large numbers of fishers attracted to the area caused crowding problems and conflict among fishers, especially among those using different kinds of gear. During the nineteenth century, various kinds of regulatory systems were tried, but none could solve the problems of the fishery until co-management principles were introduced in the 1890s “as a solution of last resort.”

Mandate: Co-management was introduced in the 1890s through the *Lofoten Act*. The Act itself does not seem to have been updated, but the regulations under the Act and the implementation of these regulations have been reviewed and changed as necessary.

Process: Under co-management, the Norwegian government formally gave responsibility for regulation of the fishery to the fishers. Different gear group representatives formed special district committees and made rules for allowable fishing times, type of gear allowed, and the amount of space allocated for the different gear types. Fishers were elected to act as inspectors, and a public agency was formed to oversee enforcement. Before each season, the fishers elect their representa-

tives to the committees responsible for updating the regulations and for policing their enforcement.

Capacity Building: The information requirements of the fishery are well-established. Much capacity building would have taken place earlier this century, and it is not discussed in the recent literature. These information requirements have to do with the year-to-year adjustment of the regulations under the co-management arrangement.

Features to Note: The Lofoten fisheries co-management arrangement may be the earliest such arrangement in Europe to involve devolution of central government powers and the formal sharing of management jurisdiction between groups of fishers and government agencies. Starting as a solution of last resort to resource conflict, Lofoten co-management has been “so successful that there has not been even a suggestion that the state should take over this role” (Jentoft 1985). The case shows how co-management systems can evolve through the delegation of more power and authority by the government, and why adaptive management or “learning by doing” in the evolution of co-management, and feedback learning in general, is likely to be critically important.

Sources:

- Jentoft, S. 1985. “Models of fishery development. The cooperative approach.” *Marine Policy* 9: 322-331.
- Jentoft, S. 1989. “Fisheries co-management.” *Marine Policy* 13: 137-154.
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Coastal Fisheries, Japan

Management Issue: The Japanese coastal fishery is co-managed, using a system that provides regulatory authority at national and regional levels, and decision-making power mainly at the local level. This co-management system was designed to formalize traditional village fishing rights. It functions as a mechanism to implement management measures and solve disputes over resource use rights. It also provides a legal safeguard for village-based resource rights. Until about 1900, such management functions were carried out by village guilds.

Mandate: With the implementation of the 1901 *Fisheries Law*, village sea territories established during the feudal era were mapped, codified, and registered. Updated in 1949, the *Fisheries Law* gave fishery rights and licences to working fishers only, and placed fishery management in their hands through the local fisheries cooperative associations (FCAs).

Process: Each FCA (or federation of FCAs) has exclusive ownership of coastal waters, with the exception of port areas and industrial zones. FCAs apply to the government for licences, which they distribute among their members. Non-members cannot fish, and members who do not obey the rules are expelled. The FCAs control many aspects of the coastal fishing activity within their immediate jurisdiction by implementing and enforcing national fishery laws and regulations, which are supplemented or complemented by those made locally. For example, the national government establishes the total allowable catch for the offshore and coastal fishing areas. The division of the total quota

for a particular FCA is done by the prefecture (a division of government). The FCA is then responsible for allocating its specific fish quota. The FCA works closely with the national, prefecture, and municipal governments on a number of fishing-related matters, including design and implementation of management plans, approval of regulations, fishery projects, budgets, subsidies, licences, and other rights. FCAs also carry out marketing, processing, leasing of fish equipment, purchasing of supplies, and education functions.

Capacity Building: Information requirements are very specific from one FCA to the next. In terms of institutional capacity, the FCAs basically capture and reinforce traditional Japanese consensus-based decision making and apply it to fisheries management. Since much of this capacity building took place decades ago, the current literature does not provide details on it.

Features to Note: The prevailing maritime tradition in Japan, unlike that in the West, never included the idea that the sea — or should be — open access. Instead, a complex system of locally varied marine tenures developed over many generations. Ownership of marine commons in coastal waters is quite comparable, in Japanese law, to the ownership of village commons.

Sources:

- Ruddle, K. 1987. *Administration and conflict management in Japanese coastal fisheries*. Technical Paper No. 273. Ottawa: Department of Fisheries and Oceans.
- Lim, C.P., Y. Matsuda, and Y. Shigemitsu. 1995. "Co-management in marine fisheries: The Japanese experience." *Coastal Management* 23: 195-221.

Municipal Fisheries, Philippines

Management Issue: Philippines coastal fisheries have been characterized by intensive, competitive exploitation, conflicts between gear groups, resource depletion, and enforcement problems. The government does have policies favouring decentralization, but some analysts have suggested that lack of government management capability and inadequate resources were the government's main motivators when instituting co-management.

Mandate: In 1991, the Philippines government enacted the Local Government Code, which sought to decentralize government functions and operations to local governments.

Process: The Code granted local governments (municipalities) a number of powers, including the management of municipal or nearshore waters. Under the Code, municipal waters were defined as all waters within 15 kilometres of the coastline. The general operating principle was a provision that the local government units (LGUs) may group themselves and consolidate or coordinate their efforts, services, and resources for purposes commonly beneficial to them. The LGUs and local communities were also given certain privileges and/or preferential rights. For example, municipalities were given the exclusive authority to grant fishery privileges in municipal waters and impose rentals, fees, and charges. The organizations or cooperatives of marginal fishers were granted, free of charge, preferential rights to fishery privileges within municipal waters. These preferential rights included, for example, the erection of fish corrals and the gathering of fish fry.

Capacity Building: Section 35 of the Code specifically states that LGUs may enter into joint ventures and other such cooperative arrangements with local peoples' organizations and non-governmental organizations (NGOs) to deliver certain basic services, implement projects for capacity building and livelihood security, and develop local enterprises designed to diversify fisheries.

Features to Note: Philippines fishery co-management builds on three decades of experience with co-management, starting with forestry and water resources. The participation of well-funded, dynamic NGOs is a general feature of all types of Philippines co-management.

Sources:

- Pomeroy, R.S., and M. Pido. 1995. "Initiatives towards fisheries co-management in the Philippines: The case of San Miguel Bay." *Marine Policy* 19: 213-226.
- Pomeroy, R.S., ed. 1994. *Community Management and Common Property of Coastal Fisheries in Asia and the Pacific: Concepts, Methods and Experiences*. Manila: International Center for Living Aquatic Resources Management. 189 pp.

Bay of Fundy Herring Fishery, Canada

Management Issue: The complex issues surrounding the Bay of Fundy herring fishery included the sustainability of the resource, the potential for conflict among gear groups, the sharp decline of the purse seine fleet by 1975, and the difficulty of managing increasingly complex fishery regulations.

Mandate: According to Kearney, the involvement of fishers in decision making can be traced to a Canadian government policy in 1976:

Since 1976, the alternative, self-determination model of decision making, has nevertheless found germinal expression in a concept known as “co-management.” This concept was first put forward as an element of government policy in a 1978 speech of Roméo LeBlanc, then Minister of Fisheries and Environment, and this self-determination model of decision making was referred to as “co-management.” LeBlanc offered fishermen the opportunity to co-manage the fisheries “so they could take over their fishery, own their boats, run their business, negotiate prices and working conditions, and become partners fully equal with those who buy, process, and market fish.”

Process: Fishers formed a committee composed of representatives from the purse seine, weir, and gill-net sectors of the fishery. This committee met with government representatives and took part in the formulation of fishery regulations and the allocation of the total fleet quota. It held the rights to sell fish to foreign vessels, the responsibility to police vessel quotas, and the rights to distribute surplus quota among the fleet. However, neither the policy of 1976 nor the government discussion paper of 1981 made it clear whether co-management was merely a mechanism for consultation or involved the delegation of substantive powers of decision making to fishers.

Capacity Building: There is little information available on capacity building. Various events in the early 1970s led to the organization of herring fishers of the Fundy region into three associations by 1975.

Features to Note: “The Fundy Project” of 1976-78 was the first Canadian fisheries co-management initiative. It was characterized by a high degree of cooperation between government and the fishers for those two years. It collapsed later due to complex problems, including conflicts between fisher groups and the inability of government to make its policies clear. In the years that followed, the principal approach was consultative: user groups were consulted about their concerns and opinions, but decisions were made by the Department of Fisheries and Oceans. The consultative process, which began in the late 1970s and early 1980s with a handful of advisory committees, multiplied into tens of committees covering every sector and major marine resource species. In the Scotia Fundy region alone, there were as many as 28 committees in the 1990s (Jentoft and McCay).

Sources:

- Kearney, J.F. 1984. “The transformation of the Bay of Fundy herring fisheries 1976-1978: An experiment in fishermen-government co-management.” In *Atlantic Fisheries and Coastal Communities: Fisheries Decision-Making Case Studies*. C. Lamson and A.J. Hanson, eds. Halifax: Dalhousie Ocean Studies Programme, pp. 165-203.
- Jentoft, S., and B.J. McCay. 1995. “User participation in fisheries management. Lessons drawn from international experiences.” *Marine Policy* 19: 227-246.

Management by Community Quotas, Sambro, Nova Scotia

Management Issue: Sambro is a small fishing community near Halifax. It has a 30-boat fleet and two fish processors. It used to have a diverse fishery, active 12 months of the year, that included fishing for cod, haddock, swordfish, pollock, halibut, and lobster.

Between 1986 and 1993, Sambro's share of the total catch (4X Region) was stable at 10 per cent of cod, 10 per cent of haddock and 4 per cent of pollock. Under the competitive quota system, Sambro's landings fell to a fraction of the historical average.

Mandate: There is no formal co-management agreement. The community quota has been allocated under the same regulatory process as other types of quotas. As well, it is not clear from the literature reviewed if, or how, the mandate for self-regulation and self-policing was transferred to the local association.

Process: Sambro fishers made a presentation to the federal government asking for an experimental community quota allocation to protect their historical claims. In 1990, the Department of Fisheries and Oceans (DFO) gave a small community quota on haddock (45 tonnes out of the 1,900 tonne quota for 4X Region). This quota to avoid gluts and scarcities was administered by the fishers themselves, through their association, by applying trip limits and fishing according to market demand. Subsequently, DFO allowed broader community quotas for all groundfish. Fishers were given the right to manage and allocate the catch through the enforcement of trip limits for vessels under 65 feet.

Capacity Building: Key capacity building factors in this case were the existence of a relatively strong local fishers' association, supportive fish processors, a strong church group, the use of community meetings to establish consensus, and the emergence of a local development association after community meetings in 1994.

Features to Note: The Sambro experiment, which continues to date, shows the feasibility of fisheries management by community quotas as opposed to fleet quotas and individual transferable quotas (ITQs). Initially, the system was developed to protect the community's share of the harvest. But fishers discovered that, while the community quota did not guarantee their historical levels of catch at a time of shrinking quotas, it did provide a number of benefits. Use of the community quota avoided the frenzied fishing under fleet quotas; allowed individual fishers to catch according to market demand; permitted the use of the less costly fixed-gear technology; and made it possible to fish more selectively by switching species as needed. Many of the same benefits could have been obtained by using ITQs instead of fleet quotas. However, the community quotas avoid two major drawbacks of ITQs: high-grading of fish (dumping of bycatch, undersized, and "number two" fish) and equity problems (the "rich fisher bias" of ITQs and the "disappearing middle").

Sources:

- Apostle, R., G. Barrett, P. Holm, S. Jentoft, L. Mazany, B.J. McCay, and K.H. Mikalsen. (forthcoming, 1998) Toronto: University of Toronto Press. (Title not available).
- Loucks, L. 1995. "Coastal community-based decision making: Values for sustainable

coastal zone management.” MA thesis, St. Mary’s University, Halifax.

McCay, B.J., C.F. Creed, A.C. Finlayson, R. Apostle, and K. Mikalsen. 1995. “Individual transferable quotas (ITQs) in Canadian and US fisheries.” *Ocean & Coastal Management* 28: 85-115.

Skeena Watershed Committee, British Columbia

Management Issue: A 100-year-old commercial fishery near Prince Rupert at the mouth of the Skeena River was valued at \$100 million in 1995. Sockeye and four other salmon species were part of this industry. A sport fishery based on steelhead salmon became well established upriver on the Skeena in the 1950s, but declined in the late 1970s due to reduced steelhead numbers. By the early 1990s, sport fishers had become very concerned that the steelhead population was about to collapse and that commercial fishers at the mouth of the river were continuing to catch steelhead in commercial gill-net and seine fisheries. Elsewhere on the Skeena, the Gitksan and Wet’suwet’en First Nations demanded the right to conduct commercial harvests upriver on the surplus escapement, over the protests of commercial fishers at Prince Rupert who feared these practices could lead to unfavourable future reallocations. These conflicts were exacerbated by a lack of scientific information with which to assess them.

Mandate: The Skeena Watershed Committee was established in 1992 to bring all three parties together to jointly plan the harvest of stocks in the Skeena River. Key issues were stock assessment, stock enhancement, habitat protection, enforcement, and watershed restoration.

Process: Although the three parties agreed to come together in 1992, no progress was made until 1994, when the Department of Fisheries and Oceans (DFO) threatened to impose season and area closures if the Committee did not come up with a plan of its own. At the same time, the Committee gained control over research funds, and DFO hired an independent non-government mediator to work to resolve the conflicts. Subsequently, all local and government parties agreed to a set of “in-season fisheries management guidelines” for 1994, and, ultimately, all parties were satisfied with the outcomes at the end of the season. Five interest groups were equally represented on the Committee: Aboriginal, recreational, and commercial fishers, and provincial and federal governments. In March 1997, however, representatives of the commercial fishery withdrew, because they believed the consultative process being used to manage the fishery worked against their financial interests.

Capacity Building: DFO and the Province of British Columbia built a stock, effort, and area computer model to generate management options for consideration at Skeena Watershed Committee meetings. These models facilitated conflict resolution.

Features to Note: Although funded by DFO, the Committee is structured along informal cooperative management lines.

Sources:

- Pinkerton, E., and M. Weinstein. 1995. *Fisheries that Work: Sustainability through Community-Based Management*. Vancouver: The David Suzuki Foundation.
- Perry, T., Prince Rupert Division Office, Department of Fisheries and Oceans. Personal communication, April 16, 1997.

Kuskokwim River Management Working Group, Alaska

Management Issue: In the mid-1980s, the Alaska Department of Fish and Game (ADF&G) threatened to close the river chinook, chum, and coho salmon fisheries on the Kuskokwim River because of available spawning escapement data trends. Commercial harvests of salmon had been increasing steadily, and ADF&G believed the fishing effort had become too large to sustain chinook and other salmon stocks. Fishing communities believed stock data on which this decision was based were inaccurate and that fisheries should remain open. The Kuskokwim River Management Working Group, representing 21 such communities, was formed as a result.

Mandate: Regarding state fisheries, the ADF&G has the sole legal authority to make decisions and implement them. The Working Group has an advisory role only. The Group has official recognition through the “Joint Statement on the Management of the Kuskokwim River Salmon Fishery,” adopted by the Board of Fisheries in 1988.

Process: The Working Group was formed within two years of the management crisis and achieved recognized status in 1988. It consisted of 15 volunteers representing upriver and downriver communities; subsistence, commercial, and sports fishers; local processors; and elders. The group operated on a “consensus minus one basis.” The objective was to obtain in-season data on stock abundance, with each fish species considered as one stock. The group met with government representatives two to three times per season. The group established and coordinated one test fishery at

the mouth of the river and several in the in-river subsistence fishery to supplement ADF&G’s data. The test fishery was financed in its first season by a processor; the ADF&G provided a technician to ensure the consistency of methods used. In later years, Yu’pik test fishers received funding from ADF&G and the Bering Sea fishers’ organization to collect data. Several subsistence fishery sites were also monitored; this was financed primarily by the Yu’pik fishers’ organization and a state grant. The data obtained from these activities were used to make informal decisions on times and areas for the chinook, chum, and coho salmon fisheries. The Working Group’s management functions, therefore, included data collection, analysis, and interpretation plus pre-season and in-season harvest planning.

Capacity Building: The “Joint Statement” has detailed provisions for collecting information. Every two years the group gives a detailed performance report and a self-evaluation to the Board of Fisheries. The group has become an informal working management institution allowed to make harvest-planning decisions. The ADF&G attends meetings as an observer and has the right to overrule decisions. The ADF&G retains legal accountability; the group has social and political accountability.

Features to Note: Special features include the large part played by subsistence fishers in data collection; “traditional knowledge” from elders and other fishers; participants’ volunteer efforts; and funding by local groups and processors to improve fisheries management.

Source:

Pinkerton, E., and M. Weinstein. 1995. *Fisheries that Work. Sustainability through Community-Based Management*. Vancouver: The David Suzuki Foundation.

Prince William Sound Aquaculture Corporation, Alaska

Management Issue: The Prince William Sound Aquaculture Corporation (PWSAC) was founded in 1974 to increase the salmon runs in the local area through enhancement techniques. The original impetus came from local fishers anxious to counter resource depletion and to buffer themselves against natural fluctuations in resource availability.

Mandate: The co-management arrangement is between the Alaska Department of Fish and Game and PWSAC. A series of statutes and regulations passed in and after 1976 granted a qualified regional association the power to tax its members to finance and manage salmon enhancement. To qualify as a “regional association,” a corporation must represent the commercial fishers in the management area, as well as other user groups and affected parties.

Process: The arrangement began with local stock enhancement and regional enhancement planning. These proved so successful that co-management expanded to include harvest planning and allocation. The concept is based on PWSAC’s ability to tax its members and to invest in enhancement that brings benefits to all.

Capacity Building: Pinkerton investigated two aspects of capacity building. First, she found that co-management resulted in a better bargaining position for fishers. This was related to four factors that lowered risks

for fish buyers: high quality, large volume, predictability of supply, and the possibility of dealing with one seller. Gross benefits to Prince William Sound seiners attributable to PWSAC-produced fish averaged about \$71,000 per seiner, compared with an expenditure of only about \$3,000 (through a 2 percent landing tax) to support enhancement. Second, she found the co-management approach to enhancement helped coordinate traditional capture fisheries and culture fisheries by reducing the conflict over the allocation of enhanced stocks and wild stocks. Alaska’s hatchery-attributable production of pink salmon was 30 per cent of total production in 1989 and 45 per cent in 1990, and PWSAC was the largest single producer of pink salmon in Alaska.

Features to Note: The private non-profit aquaculture program in Alaska developed in response to problems with private for-profit and state-operated hatchery programs. The PWSAC case is not an aquaculture case proper, but a salmon enhancement project co-managed by a non-profit regional association of fishers and a state agency.

Sources:

- Pinkerton, E. 1993. “Fisheries development by local stakeholders: The Prince William Sound Aquaculture Corporation.” *Making Waves* 4 (3): 14-16.
- Pinkerton, E. 1994. “Economic and management benefits from the coordination of capture and culture fisheries: The case of Prince William Sound pink salmon.” *North American Journal of Fisheries Management* 14: 262-277.

Chesapeake Bay Programme, United States

Management Issue: Chesapeake Bay is the largest estuary in the United States and one of the most productive on earth. It supports fisheries in excess of \$1 billion annually and is the base of a major recreation and tourist industry. The Bay itself is broad and shallow, with a watershed of 166,000 square kilometres. Fourteen million people live in this watershed. For the past 300 years, the Bay has been a completely open-access resource. As a result, fisheries have declined, wetlands have receded, and an oyster industry has been destroyed. Serious deterioration in the Bay's water quality first drew attention in the 1960s.

Mandate: The Chesapeake Bay Foundation was established in 1966 as a non-profit conservation organization to "Save the Bay." The first Chesapeake Bay Agreement was signed in 1983 by six states and the federal government. The 1987 Chesapeake Agreement organized 29 commitments to action in six areas: living resources, water quality, population growth and development, public education, public access, and governance.

Process: The first step in the evolution of this agreement was to create dialogue and gain broad consensus about the need to save the Bay. The second step was to achieve broad consensus on the causes of the problem and how they should be corrected. The final step, now in progress, requires implementation of remedial actions. The concern at this point is ensuring that short-term goals based on local human and institutional needs do not override long-term requirements for restoring the health of the ecosystem.

Capacity Building: Volunteers and students have been trained to take samples and compile measurements that monitor streams and rivers throughout the watershed. These data are added to those collected by state and federal scientists. Scientists have played a key role in educating politicians and the public concerning the causes of the deterioration in water quality.

Features to Note: Chesapeake Bay is considered a "best case scenario for ecosystem management." Broad consensus was gained early because all interest groups were directly affected by observable, serious deterioration in water quality. The scientists were forthright and in agreement, and helped to ensure that the right issues were being addressed. Management agencies took action swiftly once the issues were identified.

Sources:

- Costanza, R, and J. Greer. 1995. "The Chesapeake Bay and its watershed: A model for sustainable ecosystem management?" In *Barriers and Bridges to the Renewal of Ecosystems and Institutions*. L. Gunderson, C.S. Holling and S.S. Light, eds. New York: Columbia University Press.
- Matuszeski, W., and Food and Agriculture Organization of the United Nations (FAO). 1996. *Case Study 1 — The Chesapeake Bay Programme, U.S.A. The Contributions of Science to Integrated Coastal Management*. GESAMP Reports and Studies No. 61. Rome: Food and Agriculture Organization, Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection.

St. Lawrence Vision 2000, Quebec

Management Issue: By the 1970s, high population densities plus agricultural and industrial growth along the St. Lawrence River had resulted in major environmental problems in the river and its tributaries. The St. Lawrence Action Plan was a cooperative agreement between the federal and Quebec governments to develop a coherent framework for government initiatives related to protecting the river environment. The Plan ended in 1993 and was replaced in 1994 by the St. Lawrence Vision 2000 (SLV 2000) agreement.

Mandate: The SLV 2000 agreement is intended to conserve and protect the St. Lawrence ecosystem in order to reclaim the river for the public in a sustainable development context.

Process: Ten federal and Quebec government departments are involved in the SLV 2000 agreement. The agreement has seven major components: preserving biological diversity; promoting agricultural clean-up; ensuring community involvement; providing decision makers and others with the scientific information needed to make sound decisions; addressing Quebecers' growing concerns about the impact of contaminants on their health; reducing discharges of toxic effluents into the St. Lawrence and its tributaries; and restoring a number of deteriorated sites, while testing and promoting rehabilitation techniques. Principal partners have been identified for each component. A joint management structure has been established to facilitate implementation of the agreement by the many participating agencies. For example, an Agreement Management Committee sets poli-

cy, consults community organizations, and monitors implementation of each of the components. In addition, seven harmonization committees meet regularly to plan, implement, and follow up on activities under individual components. Measurable results have been set for each of the components to ensure regular accountability. A coordination office provides support and secretarial services to all partners.

Capacity Building: A major objective of SLV 2000 is to motivate, encourage, and support the involvement of local residents in SLV 2000 projects in their region.

Features to Note: SLV 2000 builds on the success of its predecessor, the St. Lawrence Action Plan, which developed a framework for government initiatives related to the St. Lawrence River.

Sources:

- Governments of Canada and Quebec. 1996. *Biennial Report 1993-1995: St. Lawrence Vision 2000.*
- Governments of Canada and Quebec. 1994. *Harmonization and Co-ordination Agreement Respecting the Conservation, Protection, Clean-up and Restoration of the St. Lawrence River and Priority Tributaries Entitled St. Lawrence Vision 2000.*

Great Barrier Reef Management Strategy, Australia

Management Issue: The management program was initiated in response to the objections of many Australians to a proposal to mine coral (limestone for cement kilns) on the Great Barrier Reef and to drill for oil in the Reef province.

Mandate: These issues led the Australian federal parliament to pass the *Great Barrier Reef Marine Park Act* in 1975. In 1981, the Great Barrier Reef, together with all the islands in the Great Barrier Reef (GBR) region, was put on the World Heritage List, but apparently without additional Australian legislation.

Process: The Act established a three-person authority and provided for the establishment of a marine park in the GBR region. The park encompassed all the waters east of the State of Queensland from the northern tip of Cape York Peninsula to a point approximately 2,200 kilometres south, and from the low-water mark on the mainland to the edge of the continental shelf. The second phase of the management process commenced with the World Heritage listing of the GBR in 1981. With the listing, the whole coastal ecosystem was formally recognized as one entity, including all the lands, seabed, and waters within the boundaries of the GBR region. However, work to develop a long-term strategic plan did not get under way until 1990-1991, due to lack of agreement over the meaning of the phrase "conservation while allowing reasonable use" in the Act.

Capacity Building: The Act makes public participation mandatory, but the current practice apparently goes beyond legislated requirements to facilitate public input. Draft zoning plans go before the public not for one month but three, and the authority not only publishes the plan in the newspapers but also actively seeks out user groups to discuss the plan. The authority facilitates input by producing attractive response sheets; distributing them widely; and accepting responses in written form or orally, in person or by telephone. Special regard

is given to persons and groups most dependent on the park's resources. The authority employs people from Aboriginal communities, drawing on traditional knowledge to learn, for example, about dugong, an endangered species.

Features to Note: The Reef is a large ecological zone supporting human activities worth nearly \$1 billion per year to the Australian economy. The *Great Barrier Reef Marine Park Act* was one of the first pieces of legislation in the world to apply the concept of ecologically sustainable development to the management of a large natural area. Public participation in all areas of management was at the centre of the strategic approach adopted by the authority to ensure that resource use was ecologically sustainable.

Sources:

- Kelleher, G. 1996. *Case study 2. The Great Barrier Reef, Australia. The Contributions of Science to Integrated Coastal Management.* GESAMP Reports and Studies No. 61. Rome: Food and Agriculture Organization, Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection.
- Kelleher, G. 1996. "Public participation on the Reef." *World Conservation 2*: 19.

Pacific Fishery Management Council, United States

Management Issue: The reasons leading to the formation of the Pacific Fishery Management Council and, in general, to the decentralization of fisheries management in the United States are complex. According to Jentoft and McCay, "the open, public nature of the process is mandated by law, reflecting a larger institutional change in the U.S.A. during the early 1970s."

Mandate: Under the *Fishery Conservation and Management Act* of 1977 (Magnuson Act), eight regional fishery management councils were created in the major fishing regions of the United States. The management system created by the Act has been identified as co-management, since a part of the federal government's authority to manage fisheries has been given to the regional councils.

Process: Under the Magnuson Act, the framework for regional councils is the same in all eight regions, but the particular decision-making structure used by a council varies from region to region. The Pacific Fishery Management Council has relied on both users and scientists to provide advice. Regulations are formally enacted by the Council, as advised by committees. Standing advisory committees on groundfish include the Groundfish Advisory Panel (with representatives of commercial and recreational fishers, processors, and consumers); the Groundfish Management Team (of biologists, economists, and enforcement officials); and the Scientific and Statistical Committee. The Council has the primary functions to develop, monitor, and evaluate fishery management plans for various fisheries needing conservation and/or management within the Council's area of responsibility. Plans must be approved by the federal government before implementation. Hearings are held by the Council throughout the planning process to provide public input. The Council is composed of persons "knowledgeable concerning fisheries and the fishing industry." Members of the Council are nominated by the governors of the states within the Council's area of responsibility and then appointed by the U.S. Secretary of Commerce.

Capacity Building: There are elaborate information management provisions and functions through committees, but no measures aimed at local institution building.

Features to Note: The Magnuson Act, which has decreased the concentration of management authority under the central government, is probably the most ambitious attempt at decentralization ever undertaken in the United States. But the Magnuson Act has not necessarily resulted in effective co-management, and resource management under this Act has received mixed reviews. A number of studies have examined the performance of various fisheries under the Pacific Fishery Management Council. For example, Hanna reported on three cases of groundfish management within the Pacific Fishery Management Council, and concluded that the effect of user participation on management performance was uneven.

Sources:

- Hanna, S.S. 1995. "User participation and fishery management performance within the Pacific Fishery Management Council." *Ocean and Coastal Management* 28: 23-44.
- Jentoft, S., and B. McCay. 1995. "User participation in fisheries management. Lessons drawn from international experiences." *Marine Policy* 19: 227-246.

Stakeholders and Conservation in a West African Lagoon

Management Issue: The Ndogo lagoon is located in Gabon in west central Africa. The area around the lagoon has high biodiversity, includes four legally constituted wildlife reserves (Complexe des Aires Protégées de

Gamba) and four hunting reserves, as well as very rich inland and coastal fisheries. However, the communities of the Ndogo lagoon are rapidly declining for a variety of reasons: offshore trawling affects coastal and lagoon fisheries; wildlife reserves cause animal depredation of crops; wildlife hunting is not allowed; and traditional common property systems in the lagoon have disappeared with the weakening of traditional controls, taboos and values, and the advent of motor boats. With the breakdown of marine tenure systems and the inability of the government to manage the resource, the lagoon fishery has become open-access.

Mandate: The World Wildlife Fund-U.S. (WWF) has established the WWF Gamba Project and works with the Government of Gabon. The Draft Reserve Management Plan (Plan Directeur) for the Complexe des Aires Protégées de Gamba outlines the steps for the sustainable future of protected areas surrounding the Ndogo lagoon. The Plan aims to protect the integrity of the entire lagoon and protected areas as an ecosystem, and encourages the emergence of a co-management regime.

Process: Rapid rural appraisal and participatory rural appraisal techniques were used to identify stakeholder interests, resource use problems, and areas of conflict and convergence. The Management Plan recommended that a participatory ecological mapping and zoning process should be established by the government in collaboration with the local populations; that management priorities should come out of a consultative process with the stakeholders; that round-table forums should be used as a mechanism to comment on priorities identified through the

planning process; and that legal possibilities should then be explored to provide groups with a greater voice in local governance. Since effective community resource management is highly dependent on the existence of strong rural authorities, the contributions of heads of clans and elders to management should be explored.

Capacity Building: Freudenberger notes that weak institutional infrastructures at the local level limit opportunities for collaborative resource-use planning. Considerable investment of time and resources will be needed to improve the capacity of local communities to negotiate with other stakeholders. The WWF Gamba Project concentrates on institutional capacity building. Each of the steps in the above process recommended by the WWF Gamba Project may be seen as contributing to that building.

Features to Note: If carried out, the process outlined above will reverse the process by which the government has taken on all resource management functions; it will also re-empower traditional leaders. However, policy measures will be needed to deal with factors far beyond the realm of local community control. For example, Freudenberger suggests that the World Wildlife Fund could collaborate with the government to monitor international trawlers fishing off the coast and to enforce fishing laws.

Source:

Freudenberger, M.S. 1996. *The Future of the Ndogo Lagoon: An RRA Case Study of Stakeholders and Conservation in Coastal Gabon*. Washington, D.C.: World Wildlife Fund.

The Fraser River Basin First Nations Memorandum of Understanding, Canada

Management Issue: The Fraser River Basin covers a quarter of British Columbia and its river system produces vast numbers of salmon. Over 90 Indian bands live in this basin, many of them continuing to depend on fish for an important part of their subsistence, as did their ancestors. Unlike their ancestors, however, they harvest only a small percentage of the salmon taken from the river. With recent recognition of the rights of Aboriginal people to harvest fish (the Sparrow decision, for example), it became necessary to rebuild processes governing rights of access to the resources, such as those that had fallen into disuse over the past century. The Department of Fisheries and Oceans, First Nations, and other users also recognized the need for a watershed-wide, coordinated approach to fisheries management and realized that the first step toward this objective would be to develop consensus among all Fraser River area First Nations.

Mandate: On March 25, 1993, a memorandum of understanding (MOU) was signed by a representative from each of the First Nations, tribal councils, and/or Indian bands in the Fraser River Basin. This MOU is premised on a relationship of mutual trust, respect, and reciprocity concerning the Fraser Basin fisheries among the First Nations. Each First Nation has Aboriginal rights to fish in its traditional territories, and the purpose of the MOU is to describe how they will work together to “protect, conserve, and enhance” the fisheries.

Process: Each First Nation is independently developing a fisheries management strategy and implementation plan for its traditional territory. These plans are grounded in principles of respect for other users and sustainability of the resource. The MOU is to serve as the first stage of a co-management process, as part of which each First Nation agrees to develop an annual fisheries management plan to ensure sustainability of the Fraser Basin fisheries through a process of consensus.

Capacity Building: Building capacity is not a major intent of this MOU. It is expected, however, that this activity will serve as a starting point for the First Nations when negotiating and implementing further agreements that address education and training in resource management, as well as access to government funding for management and development initiatives.

Features to Note: This MOU will provide the basis for current and future negotiations between Aboriginal people and the federal and provincial levels of government for fisheries resource management in the Fraser Basin. It represents a major step toward resolving the Indian fisheries management issue, a serious problem for the past 100 years, and will be used as an important community economic development tool.

Source:

Gordon, D. 1993. “Rebuilding the heart of the nations: fisheries co-management and Aboriginal development in the Fraser River Basin.” *Making Waves* 4 (3): 7-10.

Bras d'Or Watershed Stewardship Proposal, Cape Breton Island, Nova Scotia

Management Issue: Responsibility for the development and protection of the Bras d'Or Watershed is fragmented among 22 government agencies at three levels. As a result, no comprehensive management plan has been developed for this watershed, which includes 2,500 square kilometres of land and 1,100 square kilometres of water, and has a population of about 18,000 people including members of the Cape Breton Mi'kmaq First Nations. Public concern over the last 20 years has led to recognition of the need to develop a sustainable management plan to ensure the future viability of the resources.

Mandate: In 1994, the federal government provided funding to the University College of Cape Breton (UCCB) to develop a new watershed management plan for the region. The Bras d'Or Lakes Working Group, which represented communities and interest groups, was subsequently created. Its mandate was to "develop a community-based management structure" for long-term management of the watershed. Having sought input from the public and from resource professionals, it presented its report to the federal and provincial governments in April 1995. It recommended the establishment of a Bras d'Or Stewardship Commission, premised on the principle of co-management, with legislated transfer of authority to the Commission by September 1995.

Process: The Commission would have responsibility for developing action plans for priority issues; drafting a charter to guide policy, planning, and sustainable development of

the watershed; promoting the area and educating the public; ensuring enforcement, including compliance with and the monitoring, reporting, and laying of charges; and conducting reviews of the plan from time to time. Decisions would be made by consensus. If consensus could not be reached, a vote would be taken.

Capacity Building: The report proposes that the UCCB and the five Mi'kmaq First Nation communities develop technical education programs for the purpose of building new resource management skills among Aboriginal and non-Aboriginal residents.

Features to Note: The Bras d'Or Lakes Working Group recommends that the Commission have its authority transferred through legislation and that it report annually to the legislature. This represents a more formal structure than many other co-management agreements.

Sources:

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Mafia Island Marine Park, Tanzania

Management Issue: The idea of a marine protected area developed in the course of an environmental assessment process that examined petroleum exploration in the area. Local fishers were involved in the environmental assessment process to provide information on local resources. The protection of livelihoods

was identified as a major issue, and a reserve was set up initially to protect local fishery resources. By 1991, the reserve had evolved into a locally managed marine park.

Mandate: It became clear after 1991 that the needs of the local people could not be met under the existing fisheries legislation. New legislation was developed with support from international conservation organizations and the Food and Agriculture Organization, and the *Tanzania Marine Parks and Reserves Act* came into being in 1994.

Process: The Act provided for coordination of major resource activities. These are, in descending order of importance: finfish and octopus fishing; coral, shell, sea cucumber, and lobster collection; and seaweed farming and collection. The Act also provided for the formal inclusion of villages in decision making for the Mafia Island Marine Park (MIMP), for co-management, and for the sharing of benefits. Ten villages are within the boundaries of MIMP, the first marine national park in Tanzania. Village officials are encouraged to collaborate closely with the warden to ensure their rights are protected and park regulations are respected. Local participation is formalized through the inclusion of village council representatives on the Technical Committee for MIMP, which plays an important role in the day-to-day management of the park.

Capacity Building: In 1962, the post-independence government of Tanzania made rural development the cornerstone of its development strategy. Founded on principles of self-reliance, programs were introduced to bring rural people into planned communities called ujamaa villages. Although the program has been criticized for the displacement of indige-

nous institutions with government-sponsored village councils, it provided capacity building for decentralization and locally initiated development planning (Chambers).

Features to Note: The case is interesting in that it was preceded by legal institution building in Tanzania as a whole. Enabling legislation was passed in the 1970s and the 1980s in support of decentralization as a government policy. Although it is generally thought that the Tanzanian experiment in ujamaa self-reliance and local democracy did not live up to its potential (Chambers), this legislation nevertheless enabled districts and villages to manage their own affairs and served as the basis of new legislation for marine parks and co-management.

Sources:

- Anderson, J.E.C., and Z. Ngazi. 1995. "Marine resource use and the establishment of a marine park: Mafia Island, Tanzania." *Ambio* 24: 475-481.
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The Gwaii Haanas Agreement, South Moresby, British Columbia

Management Issue: South Moresby in the Queen Charlotte Islands of British Columbia is a wilderness area. Since the 1970s, the Haida Nation and environmentalists there have been in conflict with commer-

cial loggers. Appeals to the Supreme Court of British Columbia to ban logging in the area were unsuccessful. The Haida Nation then submitted a formal land claim for the resources, arguing for rights to the area as a result of unextinguished Aboriginal title. The federal government accepted the claim but did not stop the logging.

Mandate: The Haida declared Gwaii Haanas and Graham Island a “tribal park” in 1983 and began managing the park in a manner consistent with their wishes to protect the natural resources in the area. In 1987, the federal and provincial governments signed an agreement to make the area a national park reserve. Unwilling to assume an advisory role, the Haida did not sign this agreement. Subsequently, the Department of the Environment and the Haida signed the Gwaii Haanas Agreement, with the objective of protecting the archipelago’s natural environment.

Process: An archipelago management board was set up under the Gwaii Haanas Agreement to plan, operate, and manage the park. This board, which has two Haida representatives and two Parks Canada representatives and is co-chaired, has prepared a joint management plan, established regulations and guidelines concerning Haida use of the park, and prepared a detailed annual work plan. All management decisions require consensus, though a mediator may be used to resolve disputes. Either side may terminate the agreement with six months’ notice, following reviews conducted every five years.

Capacity Building: There is no specific information on capacity building toward management or for data collection. However, since the mid-1970s, the Haida have provided

information services and escorted tours for visitors to Gwaii Haanas.

Features to Note: The Agreement recognizes the sovereignty, title, and ownership to the archipelago of both the Haida and the Government of Canada, and no decisions can be made without the consensus of the two parties. The Haida are not governed by the *National Parks Act*; they have retained their rights to conduct traditional harvesting, spiritual, and cultural practices in the park.

Source:

Report of the Royal Commission on Aboriginal Peoples. 1996. Vol. 2, Part 2. Ottawa: Supply and Services Canada.

Cree Subsistence Fisheries, James Bay, Quebec

Management Issue: First Nations subsistence fisheries in the Canadian north do not come under the rules that govern commercial fisheries. To the extent that these fisheries are carried out in remote areas and no evidence emerges of conflict and conservation problems, governments are content to let communities regulate their own resource use. Until 1971, the Cree had their own subsistence fisheries on the Quebec side of James Bay. With the announcement of the James Bay hydroelectric development project, the Cree (along with the Inuit of Northern Quebec) went to court to stop the project for, among other things, the protection of fisheries on La Grande River used by the Cree of Chisasibi.

Mandate: With the signing of the James Bay and Northern Quebec Agreement in 1975, the Quebec and federal governments formally recognized the role of traditional Cree leaders in the management of fish and wildlife resources.

Process: Essential features of the Chisasibi Cree fishery include knowledgeable stewards who manage information, provide leadership for collective decision making, and enforce the rules and ethical norms of the community. The fishery itself is characterized by three practices: the concentration of effort on seasonal aggregations of fish; the rotation of fishing areas (“pulse-fishing”); and the use of a mix of gill-net mesh sizes to optimize the catch per unit of effort and to maintain multiple age-classes of fish, important for maintaining ecological resilience and resource sustainability.

Capacity Building: As with all community-based resource management systems, the management of the Cree fishery depends on the authority of traditional stewards and the transmission of knowledge, skills, and values (world views) from one generation to the next. Such systems have some capacity for adaptation in the face of moderate-paced social, technological, and demographic change. But massive and rapid changes such as those brought on by intrusion of outsiders into the area and by hydroelectric development may cause the system to collapse.

Features to Note: The Chisasibi Cree fishery is probably the most extensively documented subsistence fishery in the Canadian north. Berkes’ work shows that the fishery has its own management system and logic. The fishery depends on the use of extensive traditional ecological knowledge and a set of adaptive practices carried out under the guidance of elders and stewards/leaders. Although high mercury levels from the hydro project effectively closed Chisasibi’s La Grande fishery by the mid-1980s, many other communities on the James Bay coast and elsewhere in the

Canadian north have similar, community-based subsistence fisheries.

Sources:

- Berkes, F. 1977. “Fishery resource use in a subarctic Indian community.” *Human Ecology* 5: 289-307.
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Community Management in the Maine Lobster Industry, United States (de facto co-management)

Management Issue: In the U.S. tradition, marine resources belong to all citizens but are controlled by state governments as a public trust. Limiting the number of licences is considered an infringement of individual rights. Even so, some groups of users, in this case Maine lobster fishers, are able to restrict access by using social pressure to manage common-property resources in the absence of state regulation that they deem sufficient to prevent a “tragedy of the commons.”

Mandate: The essential feature of the case study is that the lobster fishers have no legal right to exclude others. Thus, their territorial system operates illegally and surreptitiously. However, self-management by lobster fishers complements state regulation of the fishery and thus may be considered to constitute de

facto co-management. As fishers get more involved with the setting of state regulations, Acheson argues, they are moving closer to de jure co-management as well.

Process: The lobster resource is vulnerable to overharvesting, but lobster harvests in Maine have remained sustainable. Although some managers have for decades been predicting a resource collapse, the Maine lobster catch has been stable since 1947. The state government establishes lobstering regulations but does not limit the number of licences. In practice, however, potential fishers are excluded through a system of traditional fishing rights. To go lobster fishing at all, one has to be accepted by the community. Once accepted, a lobster fisher is only allowed to fish in the territory held by that group (or “gang”). Interlopers are usually discouraged by social pressure and surreptitious violence. Acheson and colleagues have compared the productivity of exclusively used territories and areas in which claims of adjacent groups overlapped. They found that fishers in the exclusive territories caught significantly more and larger lobsters with less overall effort, thus showing that the territory system worked.

Capacity Building: Acheson comments little on how the capacity for community management emerged. It is clear that local knowledge is extensive and is used by the fishers. As well, the many management disputes between fishers and state managers provide a training ground for the fishers and enable them to build up their knowledge base.

Features to Note: The case shows that community-based management and the use of a communal territory system can exist even in a commercial fishery. Users of commons can generate institutions to conserve them, even in a society that subscribes to the ideal of individual freedom in the commons. The Maine case is well known but probably not unique. Similar “illegal” lobster territory systems are said to operate in other areas such as Cape Breton and Prince Edward Island, but they have not been documented.

Sources:

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Appendix IV — List of Acronyms

ADF&G	Alaska Department of Fish and Game	GBR	Great Barrier Reef
CCMD	Canadian Centre for Management Development	HTC	Hunters and Trappers Committee (N.W.T.)
CEPA	Canadian Environmental Protection Act	ITQ	individual transferable quota
DFO	Department of Fisheries and Oceans	IUCN	International Union of Conservation and Nature
DIAND	Department of Indian Affairs and Northern Development	LC(72)	London Convention 1972
EEZ	exclusive economic zone	LGU	local government unit (Philippines)
ENGO	environmental non-governmental organization	MIMP	Mafia Island Marine Park (Tanzania)
FAO	Food and Agriculture Organization of the United Nations	MOU	Memorandum of Understanding
FCA	Fisheries Cooperative Association (Japan)	NCARP	Northern Cod Adjustment and Recovery Program
FCTD	Federal Court Trial Division	NEB	National Energy Board
FJMC	Fisheries Joint Management Committee (Inuvialuit Settlement Region, N.W.T.)	NGO	non-governmental organization
		NRTEE	National Round Table on the Environment and the Economy
		NWMB	Nunavut Wildlife Management Board

PCBs	polychlorinated biphenyls
PWSAC	Prince William Sound Aquaculture Corporation
SLAP	St. Lawrence Action Plan
SLV 2000	St. Lawrence Vision 2000
SOEP	Sable Island Offshore Energy Project
TAC	total allowable catch
TAGS	The Atlantic Groundfish Strategy
UCCB	University College of Cape Breton
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFA	United Nations Fisheries Agreement
WWF	World Wildlife Fund



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Sustainable Strategies for Oceans: A Co-Management Guide

By the National Round Table on the Environment and the Economy

In recognition of problems in the ocean environment and the ocean economy, and in support of government initiatives to address these problems, the National Round Table on the Environment and the Economy (NRTEE) established its Program on Ocean Environment and Resources. To reverse the trend toward unsustainability, the program found that new arrangements are necessary. *Sustainable Strategies for Oceans: A Co-Management Guide* resulted from extensive consultation with stakeholders and has particular relevance to coastal zones.

This guide examines some of the key factors contributing to the decline of Canada's oceans and explores innovative strategies for managing what have traditionally been conflicting environmental and economic interests. The NRTEE's contribution to The Year of the Oceans, *Sustainable Strategies for Oceans: A Co-Management Guide*, sets out the principles and describes the practice of co-management – a collaborative approach which draws together the expertise and experience of a variety of stakeholders, including resource users, environmentalists and representatives from all levels of government.

Included are practical examples of ocean co-management, intended to make this "how-to" guide useful to those interested in sustainable ocean activity management.

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