

FAXED



Dalhousie University

International Ocean
Institute



FACSIMILE TRANSMISSION

To: Mr. Nick Salafsky
Fax No 312 917 0200

From: Elisabeth Mann Borgese
Fax No. 1 902 868 2455

Date: February 15, 1999

Subject: Proposal #57149

Dear Mr. Salafsky,

Here, as promised, is the "concept paper." We have a lot more, when it comes to making a detailed proposal. Some of it is fascinating -- e.g., the difficulties of government scientists trying to actually incorporate the information they get from traditional users into their mental and bureaucratic format!

With all good wishes,

Yours sincerely,

Integrating Traditional Knowledge and Scientific Research for Sustainable Use of Our Oceans and Coastlines

A Proposal for a Global Study

International Ocean Institute

RATIONALE

It is widely appreciated that the world's oceans play a fundamental role as a basis for a large fraction of global economic activity, as a key part of many coastal cultures, as a major source of inspiration for the world's cultural works, and most importantly, as a critical component of the global ecosystem.

Over the past few centuries, but particularly in the 20th century, scientific analysis of the oceans has grown dramatically. Oceanographic studies examine ocean currents, tidal action and plankton dynamics. Biological studies deal with food webs, species interactions and resource stock assessments. Geologists carry out research to understand the ocean floor. Meteorologists look to the ocean for insights into global climate phenomena. The list of research subjects is impressive.

Yet despite this apparent abundance of work, the oceans are little understood. Indeed, it is often noted that we know less about the bottom of the ocean than we do about the surface of the moon.

Meanwhile, in recent years, we have heard more and more frequently of collapses in important ocean resources around the world. On the Atlantic coast of Canada, for example, a stock of fish off the coast of Newfoundland - the so-called 'Northern cod', which once supported one of the world's largest fisheries - suffered a collapse so dramatic, and so devastating in human terms, that it is now emerging as the new 'classic' example of resource mis-management.

What is the connection between such fishery collapses and the knowledge base upon which management decisions have been made? This question has been addressed recently by a variety of analysts. Some view the question from a biological perspective; do we understand the biological features of a fish stock that lead to a collapse? Some take an economic framework; does the information flow among fishers produce economic incentives that led to the undesirable result? Others look at the problem in human terms; what underlying attitudes among resource users and managers might have led to poor use, or neglect, of the information available in fisheries? Whatever the perspective, it seems clear that a key cause of resource collapses is the combination of (1) a failure to account for the great levels of uncertainty in ocean systems, and (2) a failure to use all available sources of information, particularly knowledge held at the local and community levels.

PROPOSAL

To assist in improving our use of available information about the oceans, particularly in support of community-based management initiatives, the International Ocean Institute proposes a global study with the following aims:

1. to document the knowledge base held by coastal communities and their inhabitants, particularly the many users of oceanic resources,
2. to explore the current and potential uses of this knowledge base,
3. to examine how the knowledge base interacts with (or could interact with) the scientific apparatus surrounding fishery and ocean management,
4. to examine the inter-relationship between the use of local knowledge and the capacity and/or desirability of community-based management of coastal resources.

THE KNOWLEDGE BASE

A key component of the knowledge base, often referred to as 'traditional ecological knowledge', connotes the development over time of a people's understanding of the natural world around them. Wherever people interact regularly with their environment, and the natural resources therein, a knowledge base is built up. Such knowledge represents the accumulated information and wisdom held by resource users and human communities located within or in the vicinity of ecosystems.

How much can be caught from the sea, without harming catch levels in future years? How does the availability of fishery resources vary with the cycles of the moon, or with the changing seasons, or with variations in the direction of ocean currents? Is local navigation easier or more difficult than in past years? What weather conditions indicate that it is unwise to venture far from shore? How has environmental quality, both marine and coastal, varied over time? Is biodiversity declining? How has the health and abundance of coastal mangroves changed? These questions are often answered in coastal communities using the wisdom built up from long experience.

But the knowledge base is not only 'ecological'. For example, coastal communities can hold much wisdom about resource management systems that function well within their cultural and belief systems, about workable approaches to improving compliance among ocean users, or about fishing techniques that are most effective, or most conservationist, within the local context.

And the knowledge base is not just 'traditional', in the sense of being developed over long time periods. In Atlantic Canada for example, the knowledge base of fishers also includes information acquired recently, such as that obtained in the course of fishing in the previous year. This recent information can be valuable input for scientists and managers seeking an understanding of current fish stock levels; fishers can provide important information about the distribution of fish over time and space within a given year, including local abundances, changes in migrations, etc., each piece of information potentially important in adjusting resource assessments. Timely information can also be obtained by coastal residents on the dynamics of marine pollutants, new or increased land based sources of marine pollution, changing hazards to shipping, and so on.

PROJECT STRUCTURE AND METHODOLOGY

The project will operate primarily on a case study basis, making use of the world-wide network of International Ocean Institute centres (Senegal, South Africa, India, China, Japan, Fiji, Costa Rica, Canada, Malta, Romania). Each IOI centre will be invited to participate in developing and operating a sub-project, based on locating a suitable case study location in its respective region, and locating suitable expertise to carry out the study. Where feasible, the involvement of NGOs as well as local community organizations will be encouraged. In each case study, there will be both a community-level component, carried out at the local level, and a national-level study of scientific procedures and relevant government policy measures. This decentralized process will ensure a geographical spread of case study sites. In addition, however, it is important to have a diversity of levels of integration of local knowledge into scientific activities; the IOI will coordinate activities so as to ensure this.

The project will operate on a highly interdisciplinary basis, integrating the natural sciences (particularly biology and ecology) and social sciences (such as socio-economics, sociology and anthropology). Since the study of 'traditional ecological knowledge' has become widespread amongst social sciences, the project will build on findings obtained and recommendations made elsewhere, and will interact with those interested in traditional knowledge in inland areas. In this way, the work of the project will have an impact well beyond coastal areas.

The project will provide crucial input into two crucial emerging areas of work relating to marine resources and marine industries: community-based management, and integrated coastal zone management. The results of this project will be presented in two formats:

- a set of case studies, each examining community-level and national-level aspects, and
- a synthesis report, provided in the form of a 'handbook', which will provide guidelines for integrating traditional/ecological/community knowledge into scientific processes, based on insights from the various case studies carried out in the project.

The results should be of particular interest to (1) governmental agencies involved in the management of fisheries, coastal zones and oceans more broadly, (2) scientists seeking to better utilize local and user knowledge bases in their analyses, and (3) coastal communities wishing to ensure that their own understanding of the world around them is reflected in government science and policy measures. The International Ocean Institute anticipates strong interest in this study on the part of international agencies, both multi-lateral (e.g. the World Bank, FAO, UNDP and UNEP) and bilateral (e.g. CIDA, SIDA, GTZ, AID, etc.).

BUDGET

The International Ocean Institute proposes the above as a 3-year project, with an annual budget of US\$160,000. This annual budget, net of \$10,000 held for central coordination, will be subdivided into roughly equal support for each IOI regional centre participating in the project (i.e.

\$15,000 annually for each of 10 centres, if all participate). This figure will cover (a) salaries and/or honoraria for project participants, (b) travel costs, and (c) supplies/communications costs.



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To: Mr. Nick Salafsky
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From: Elisabeth Mann Borgese
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Date: February 7, 1999

Subject: Proposal #57149

Dear Mr. Salafsky,

Thank you for your most helpful letter, received here on January 29.

We are working on a little more comprehensive and detailed concept paper, and you should receive it before the end of the months. There are some really interesting problems to deal with!

On the changing nature of sovereignty and its effects on security and sustain ability, you will find quite a few pages in my book *The Oceanic Circle*. I am sure we sent a copy to Mr. Wallerstein.

So you will soon hear from us again.

With all good wishes,

Yours sincerely,

Elisabeth Mann Borgese

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for Sustainable Use of Our Oceans and Coastlines**

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What is the connection between such fishery collapses and the knowledge base upon which management decisions have been made? This question has been addressed recently by a variety of analysts. Some view the question from a biological perspective; do we understand the biological features of a fish stock that lead to a collapse? Some take an economic framework; does the information flow among fishers produce economic incentives that led to the undesirable result? Others look at the problem in human terms; what underlying attitudes among resource users and managers might have led to poor use, or neglect, of the information available in fisheries? Whatever the perspective, it seems clear that a key cause of resource collapses is the combination of (1) a failure to account for the great levels of uncertainty in ocean systems, and (2) a failure to use all available sources of information, particularly knowledge held at the local and community levels.

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