

# Understanding Information Pathways for Evidence-Based Policy and Decision Making in Coastal and Ocean Management

Bertrum H. MacDonald,<sup>1</sup> Suzuette S. Soomai,<sup>1</sup> Elizabeth M. De Santo,<sup>2</sup> & Peter G. Wells<sup>1</sup>

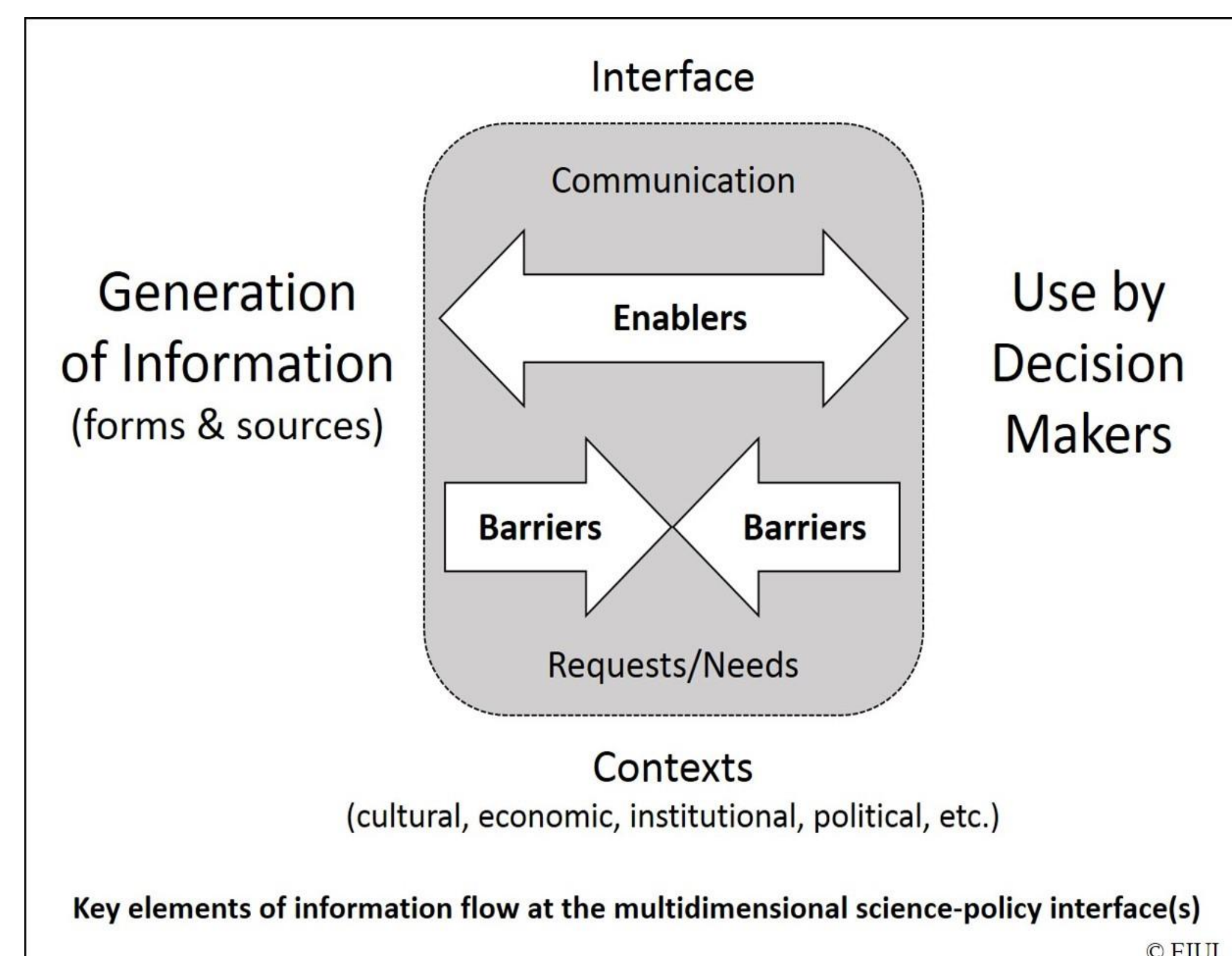
<sup>1</sup>Dalhousie University, Halifax, Nova Scotia, Canada; <sup>2</sup>Franklin & Marshall College, Lancaster, Pennsylvania, USA

## Abstract.

As coastal communities and governments cope with continuing rapid changes in climate and biodiversity, it is essential to understand the factors that enable or inhibit the use of evidence in decision making processes at local, regional, national, and international levels. Uptake of information into policies and practices is a notably complex activity. Our case studies, completed over the past 15 years, show that many factors affect the transfer of evidence to inform policy and practice decisions. These studies offer insights to aid researchers, managers, and decision makers about the use of research evidence.

## Key Principles

Scientific information (credible, relevant, legitimate, and actionable), communicated to the public and key policy and decision makers, underpins numerous efforts needed to manage critical environmental issues and adapt to impending change. Communicating new information to decision makers and managers is especially important for coastal and marine areas as environmental changes are increasingly recognized and require immediate and sustained action.



## Research Questions

What kinds of information products are produced and communicated by researchers, governmental bodies, and environmental NGOs? Who uses the information and in what capacity? How do decision makers select information to use in policy development and implementation? What are the critical enablers and barriers to the communication and use of such information? What role(s) do formal and informal information pathways, such as social networks, play in informing decision making?

## Methods

Analysis of organizational websites (e.g., pages viewed, downloads, and links to other websites). Analysis of citations to reports / publications. Interviews of information producers (e.g., scientists) and users (e.g., decision makers). Online surveys of various groups. Network analysis of stakeholder interactions. Content analysis of documents, interview data, email transactions, and social media activity. Direct observations of various key meetings.

## Key Findings

Our overall research identified enablers and barriers to awareness, communication, and timely use of research information, including some key insights and lessons learned.

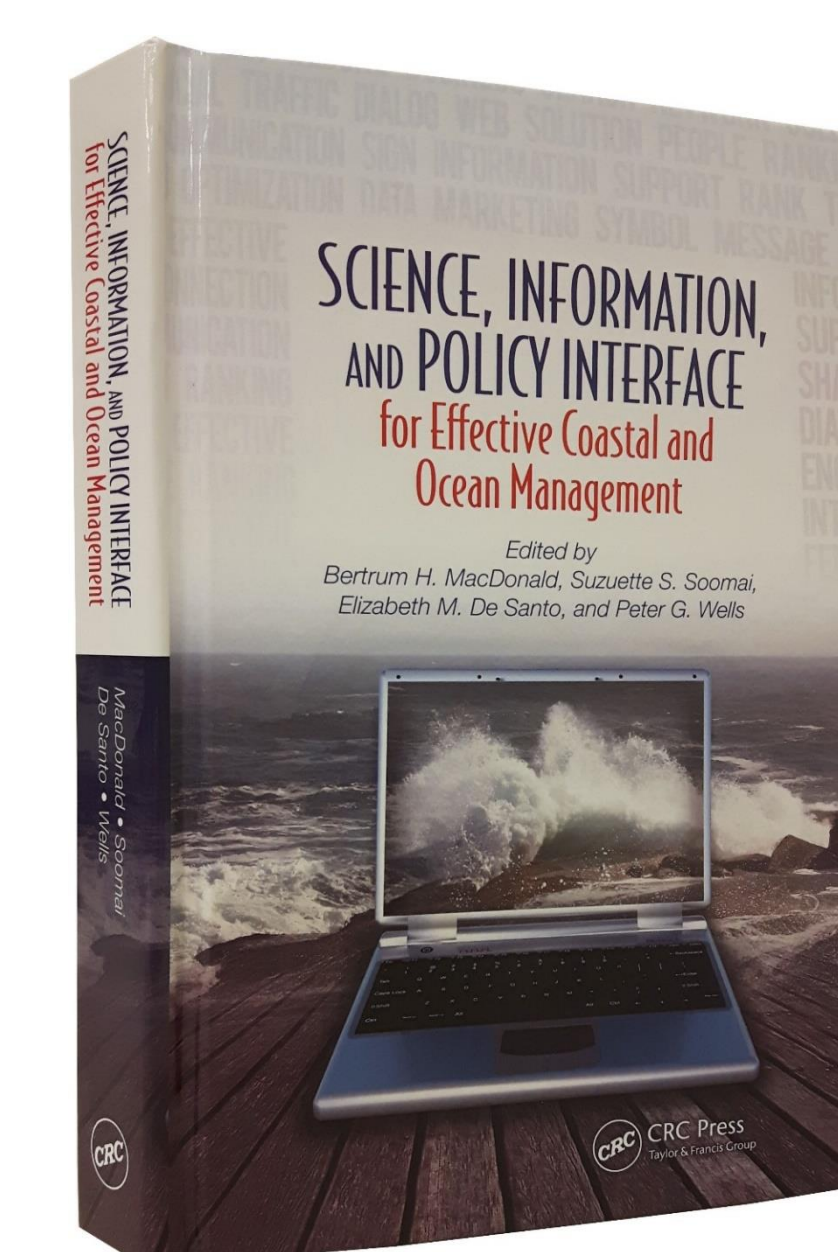
## Enablers

- ❖ Synthesis reports and policy summaries for decision-makers and managers increase awareness and understanding, if read.
- ❖ Networks (individuals and organizations) that facilitate transfer of relevant information to managers and decision makers.
- ❖ Individuals and organization, e.g., ENGOS, acting as information brokers. They translate information into the language of various stakeholders and decision makers.
- ❖ Moving research publications into open access digital formats for greater availability.

## Barriers

- ❖ Decision-making processes operating in silos within government, and between government and stakeholders, blocking or preventing timely information transfer.
- ❖ Many information dissemination channels all requiring resources.
- ❖ Rapid dissemination of misinformation contributing to distrust of credible information and its sources.
- ❖ Inadequate skills and resources to track and improve information production and distribution processes.

| PUBLICATION TYPE / PROCESS                                                  | CASE STUDIES IN OUR RESEARCH PROGRAM                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| State of the environment reports                                            | <i>The State of Nova Scotia's Coast Report; the State of the Gulf of Maine Report; the State of the Scotian Shelf Report, The State of the World Fisheries and Aquaculture (SOFIA)</i>                                                                                                                                                                                                                                                                           |
| Technical environmental and fisheries reports; Fisheries advisory processes | Enablers and barriers in the use of government and intergovernmental publications: Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), Canada Department of Fisheries and Oceans, Northwest Atlantic Fisheries Organization, Caribbean Regional Fisheries Mechanism, United Nations Food and Agriculture Organization; Effectiveness of multi-stakeholder fisheries working groups in Belize                           |
| Digital repositories                                                        | Global use of <i>Aquatic Sciences and Fisheries Abstracts</i> ; Digital coastal atlases as a decision-support tool in North America and Europe                                                                                                                                                                                                                                                                                                                   |
| Monitoring programs                                                         | Gulf of Maine Council on the Marine Environment's <i>Gulfwatch</i> – monitoring chemical contaminants                                                                                                                                                                                                                                                                                                                                                            |
| Seafood certification processes                                             | Marine Stewardship Council's certification of two Mexican fisheries                                                                                                                                                                                                                                                                                                                                                                                              |
| Marine conservation process                                                 | Role of environmental non-governmental organizations in processes to establish marine protected areas in Canada                                                                                                                                                                                                                                                                                                                                                  |
| Public consultations                                                        | Information activities during coastal conservation consultation processes for the Eastern Shore Islands Area of Interest, Nova Scotia                                                                                                                                                                                                                                                                                                                            |
| Knowledge networks and information transmission                             | Information use by many stakeholders for tidal energy development in the Bay of Fundy; Social media strategies used by individual and NGO science communicators to engage the public; Influence of information in public perceptions and values (ocean connectivity) related to community governance in Falmouth, USA; Intersection of shark research, news media, social media, and public policy; Use of research information by California legislative staff. |



## Science, Information, and Policy Interface for Effective Coastal and Ocean Management

Edited by B. H. MacDonald, S. S. Soomai, E. M. De Santo, & P. G. Wells

CRC Press 2016

OPEN ACCESS