

From Science to Policy Making: Investigating the Use and Influence of Marine Environmental Grey Literature

B.H. MacDonald, P.G. Wells, S.S. Soomai, D.M. Cossarini, R.E. Cordes, G.R.G. Hutton

Dalhousie University Information Management, Resource and Environmental Studies, Marine Affairs Program, and International Ocean Institute, Halifax, Canada

Abstract

This research investigates the use and influence of information produced by governmental marine environment and resource organizations as grey literature (not controlled by commercial publishers). Results from a suite of research methodologies (citation analysis, content analysis, surveys), applied to four groups, are enhancing our understanding of the production, diffusion, and use of information in scientific and public sector settings.

Introduction

- Marine ecosystems globally are at great risk due to human pressures.
- Much of the key scientific information for finding solutions is in the grey literature, an increasingly important knowledge base.
- This information informs timely and effective policy-making.
- Understanding information production, distribution and use will enable evaluation of its influence.

Guiding Questions

What have the four organizations published, where and how?
 What is the evidence of distribution and use of their publications?
 What methods best measure the influence of grey literature on decision making in environmental fields?
 How can marine environmental information in grey formats be influential in decision making?

Methods

- Our methods have included:*
- Creation of databases of organization's publications and citations.
 - Analysis of citations to determine
 - Sources, frequency, and patterns over time.
 - Geographic location of citing authors.
 - Subject areas of citing publications.
 - Content analysis of publications for characteristics promoting distribution and awareness.
 - Surveys (eg. interviews) of stakeholders to determine information pathways.

Relevance to ICOM

- Efficient access and effective use of information is critical to solving coastal and ocean management issues.
- ICOM (Integrated Coastal and Ocean Management) requires current and reliable information.
- In spite of increasing information technologies, there are still challenges to effective use of information in much needed policies.
- How can linkages between science and policy making be improved?

Guiding Framework and Some Key Results

Our research started with the guiding framework shown in Figure 1. This led to the development of a second framework (Figure 2) and an information pathway (Figure 3), based on our findings from two case studies.

Figure 1. General guiding framework for the research initiative

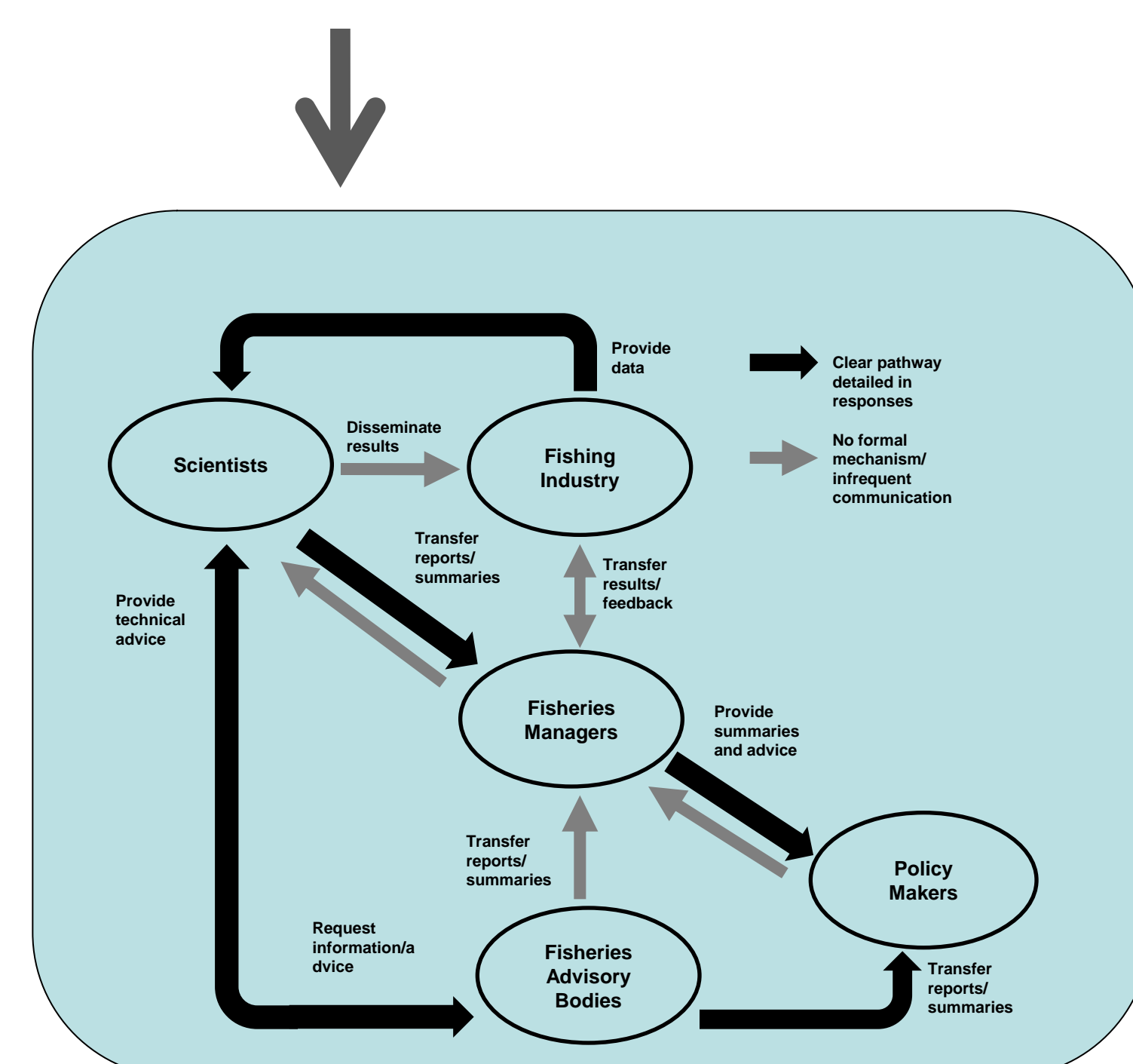
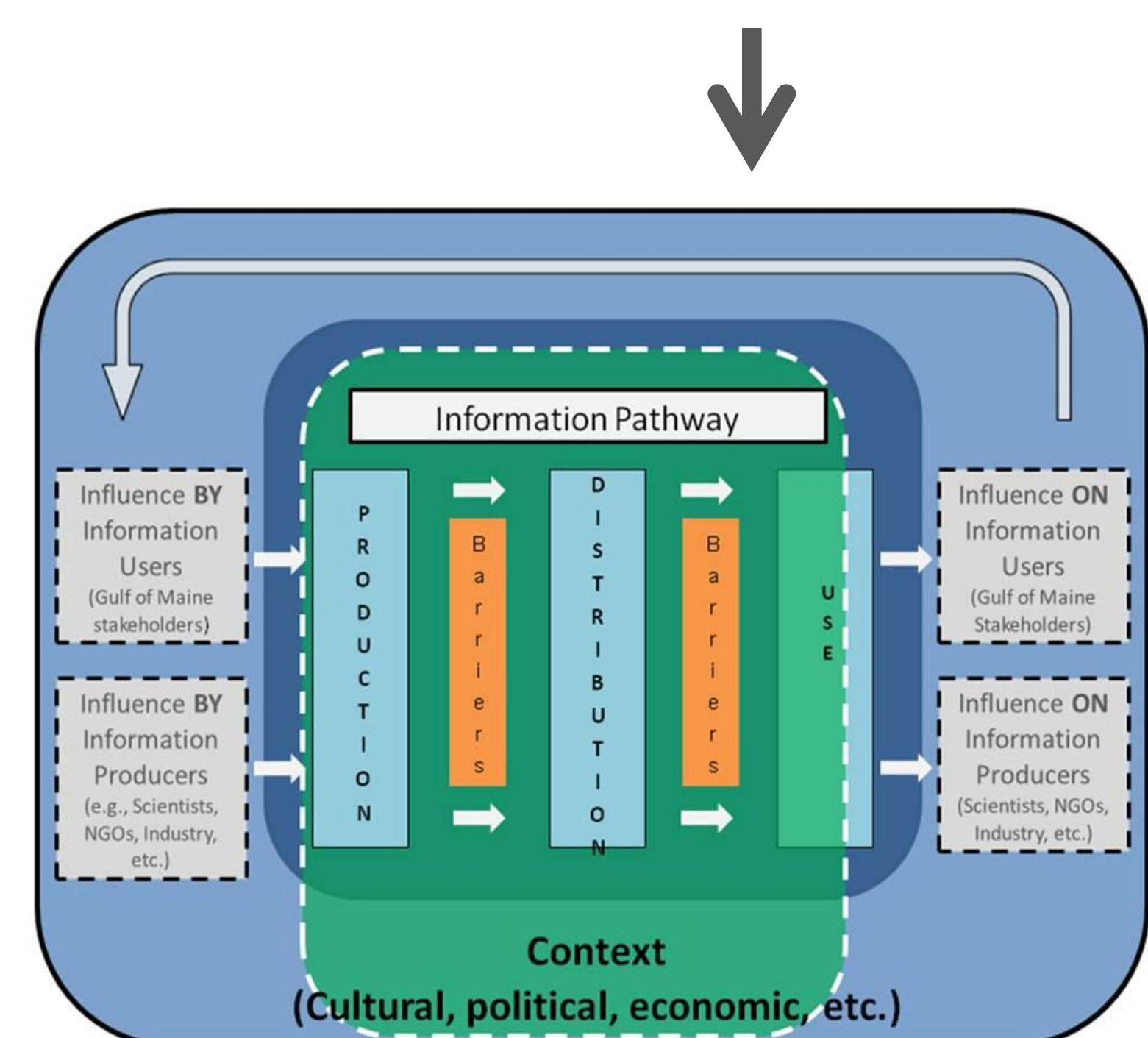
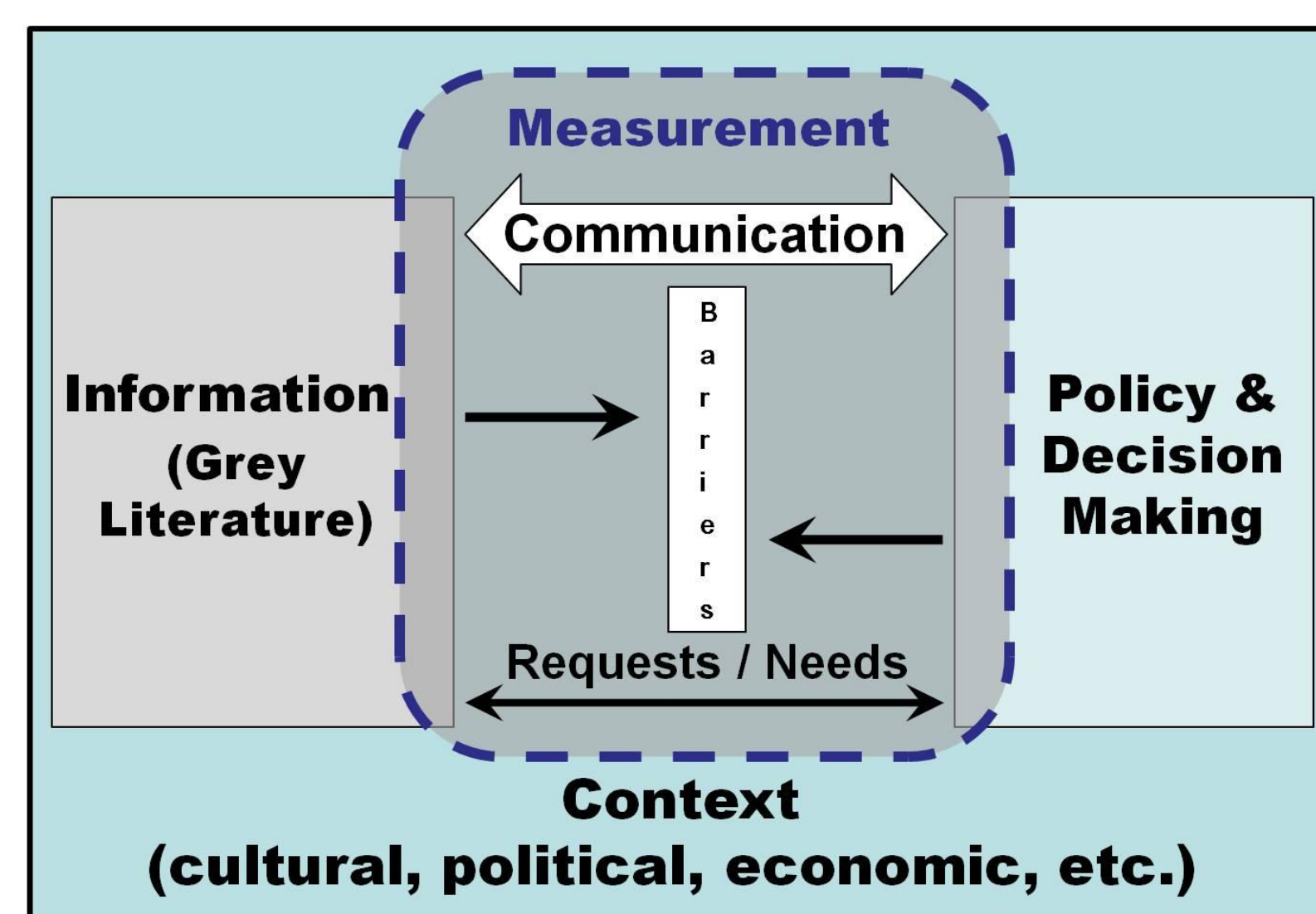


Figure 2: Guiding framework for GOMC study

Figure 3: Information pathway in FAO/CRFM study

	Production	Distribution	Use
GESAMP (UN-Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection)	Rigorously reviewed reports are available in a technical report series.	Reports are available in hardcopy and digital versions.	<p>Frequency of citations to publications</p>
GOMC (Gulf of Maine Council on the Marine Environment) (Figure 2)	Publications are reviewed but publication practices are not uniform.	An informal process exists for the region.	<p>Frequency of citations to publications</p>
FAO/CRFM (UN-Food and Agriculture Organization/Caribbean Regional Fisheries Mechanism) (Figure 3)	There is a formal technical report series on the fisheries.	An informal process exists for the region.	Used primarily within the scientific community. Limited evidence of use and impact on policy making.
NSFA (Nova Scotia Department of Fisheries and Aquaculture) 2009 State of the Nova Scotia Coast Report	Clear strategy. Three types of reports are available in hardcopy and digital formats. <i>(Study is in progress)</i>	Several types of public meetings and media were used.	Government is actively seeking stakeholder involvement in developing a coastal policy for Nova Scotia.

Next Steps

Our future research includes:

- Continuing citation analysis.
- Developing methods for evaluating the influence of grey literature on decision making in environmental fields.
- Expanding our case studies to include:
 - Environment Canada
 - Additional UN and fisheries bodies
- Partnering with other environmental and resource research groups to increase the interdisciplinary nature of the project and its relevance to protecting the ocean.

Theses

Papers arising from the following theses are being published:
 Cossarini, D.M. (2010). *Marine environmental grey literature: A case study.* (Unpublished MLIS thesis). Dalhousie University, Halifax, Canada.
 Hutton, G.R.G. (2009). *Developing an inclusive measure of influence for marine environmental grey literature* (Master's thesis). Dalhousie University, Halifax, Nova Scotia, Canada.
 Soomai, S.S. (2009). *Information and influence in fisheries management: A preliminary study of the shrimp and groundfish resources in the Brazil-Guianas continental shelf.* (Master's project). Dalhousie University, Halifax, Nova Scotia, Canada

Contact

Environmental Information: Use and Influence (EI: UI) Research Initiative
 Website: www.eiui.ca
 Email: eiui.@dal.ca

Supported by:



Coastal Zone Canada 2010 Conference
 University of Prince Edward Island
 Charlottetown, Prince Edward Island
 July 25-29, 2010