

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

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Abstract

This research investigates the use and influence of information produced by governmental marine resource and environmental organizations as grey literature (i.e., publications not controlled by commercial publishers). Results from a suite of research methodologies (citation analysis, content analysis, surveys), applied to four organizations, 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 that promote distribution and awareness.
- Surveys (e.g., interviews) of stakeholders to determine information pathways.

Relevance to ICOM

- Integrated Coastal and Ocean Management (ICOM) requires current and reliable information.
- Efficient access and effective use of information is critical to solving ICOM issues.
- 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. Findings from two case studies led to the development of a second framework (Figure 2) and an information pathway (Figure 3).

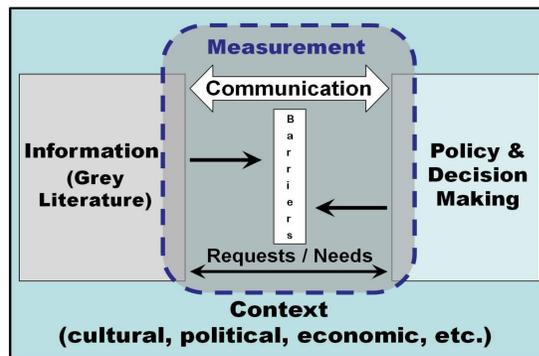


Figure 1. General guiding framework for the research initiative

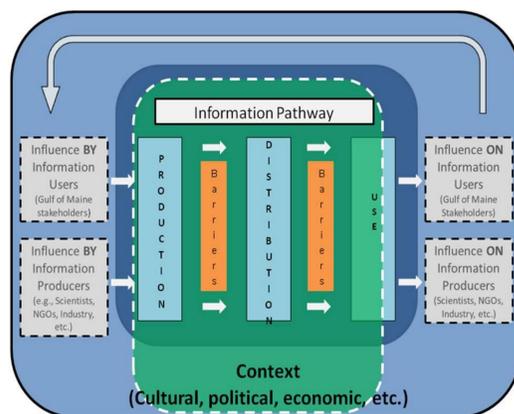


Figure 2: Guiding framework for GOMC study

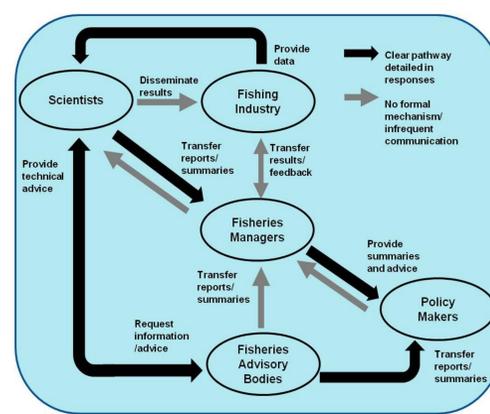


Figure 3: Information pathway in FAO/CRFM study

	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 sent out by UN agencies and are also on the GESAMP website.	<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.	Reports are sent out by agencies and are also on the website. An informal process exists in Trinidad and Tobago.	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 Nova Scotia's Coast Report	Clear strategy. Three types of the report are available in print and digital formats. (Study in progress)	The three types of the report were distributed by mail, at public meetings, by email, also press releases were made.	Government is actively seeking stakeholder involvement in developing a coastal policy for Nova Scotia.

Next Steps

Our future research includes:

- Continuing citation analyses.
- Developing methods for evaluating the influence of grey literature on decision making in environmental fields.
- Adding 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.

Theses/Papers

- Cossarini, D.M. (2010). *Marine environmental grey literature: A case study*. (Unpublished MLIS thesis). Dalhousie University, Halifax, Canada.
- Hutton, G.R.G. (2010). Understanding influence of scientific information in the digital age: a study of the grey literature of a United Nations advisory group. *Proceedings of the Nova Scotian Institute of Science*, 45(2), 91-101.
- Soomai, S.S., Wells, P.G., & MacDonald, B.H. (2011). Multi-stakeholder perspectives on the use and influence of "grey" scientific information in fisheries management. *Marine Policy*, 35(1), 50-62. doi: 10.1016/j.marpol.2010.07.006

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