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Understanding the Pathways and Roles of Scientific Information: A Critical Step in Operationalizing Ecosystem-Based Fisheries Management (EBFM)

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Understanding how information flows among numerous stakeholders, including scientists and decision-makers, is necessary for the creation of effective strategies to link scientific advice to management decisions. The use of scientific information in operational decision-making for fisheries management was studied at the national, regional, and global levels in the Canada Department of Fisheries and Oceans (DFO), the Northwest Atlantic Fisheries Organization (NAFO), and the United Nations Food and Agriculture Organization (FAO), respectively. The results of 78 interviews of scientists and managers and direct observations at 15 scientific and management meetings showed that organizational structures and cultures are the chief enablers and barriers in the information pathways in the production, communication, and use of information in the organizations. While well-established processes for requesting and producing scientific advice exist, they are mostly appropriate for traditional single-species fisheries management than for EBFM. Despite the challenges of developing and communicating ecosystem scientific information, emerging structures and behaviours to facilitate communication at the science-policy interface can support governmental efforts to operationalize EBFM. For instance, trust relationships between scientists and managers promote iterative communication and improve understanding of science and management needs. "Boundary agents," comprising individuals and organizations, can translate knowledge and broker linkages. Dynamic and often intended trade-offs in the attributes of usable information – credibility, relevance, and legitimacy – characterised respectively by the authority of the organization, the coherence of scientific advice and management needs, and the involvement of multiple stakeholders in the information pathways, evolve as organizations aim to meet their EBFM mandates.

Keywords: communication, ecosystem-based fisheries management, information pathways, science-policy interface

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