

ABSTRACT**A PARTICIPATORY MARINE RESOURCE AND SPACE-USE
INFORMATION SYSTEM FOR THE GRENADINE ISLANDS: AN
ECOSYSTEM APPROACH TO COLLABORATIVE PLANNING FOR
MANAGEMENT OF TRANSBOUNDARY MARINE RESOURCES**

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The application of a comprehensive strategy using multiple sources of information to address complex socio-ecological problems is recognised as essential for an ecosystem approach to marine governance. With a heavy reliance on marine resources and increasing numbers of resource users in the transboundary Grenadine Islands, there is a clear need for ecosystem-based marine resource management and a framework to support informed decision-making.

This dissertation details the ways in which stakeholders were engaged to develop a participatory geographical information system (PGIS) entitled the Grenadines Marine Resource and Space-use Information System (MarSIS). This included both the research approach (process) and the final geodatabase (product). Participatory processes were utilised to: (a) obtain and include the best available information from all possible sources; (b) increase inter- and intra-stakeholder understanding of interdisciplinary marine resource information; and (c) promote stakeholder ownership and use of the information produced. In order to

demonstrate its potential for marine spatial planning and management, the MarSIS is used and evaluated as a framework for an ecosystem approach to managing the transboundary Grenada Bank marine resources.

This research found clear benefits in utilising a PGIS approach. These included more complete socio-ecological understanding of the human uses of marine resources in relation to conservation and to the livelihoods of the Grenadine people. Additionally, the processes employed in implementing a PGIS not only allowed for the production of locally-relevant and useful information, but also: (a) built stakeholder capacity in the understanding of the marine environment and related human uses; (b) provided legitimacy to the local knowledge of marine resource users; (c) increased confidence in and ownership of information produced; and (d) demonstrated to other practitioners the role stakeholders can and should play in marine governance. This study found that the collaborative development of the Grenadines MarSIS provided a practical mechanism to implement ecosystem-based management and strengthen interactive governance within the Caribbean.

Keywords: participatory geographic information system (PGIS), ecosystem-based management (EBM), interactive governance, marine spatial planning (MSP), the Grenadine Islands, Grenada Bank, transboundary marine resources