CHAPTER 1

The Ecosystem Approach in Ocean Planning and Governance: An Introduction

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1 Introduction

In theory, the need for an ecosystem approach to the management of natural resources seems almost intuitive. The management and regulation of human activities that affect species, ecosystems and natural processes should surely be based on scientific knowledge of the wider systems and interactions in which such species (including *homo sapiens*), ecosystems or processes are situated. Moreover, to be effective, management measures should surely be designed and continuously adapted with consideration to the scales and dynamics (including the lack of full understanding) of ecosystem characteristics and with the involvement of concerned stakeholders. Nevertheless, despite its apparently intuitive appeal, the ecosystem approach, as a management principle, is of fairly recent origin. The scientific ideas on which the ecosystem approach is premised can be traced at least to the first half of the 20th century.1 However, the approach only gained general recognition as a policy concept in 1995 when the parties to the Convention on Biological Diversity (CBD) agreed that the ecosystem approach ‘should be the primary framework of action to be taken under the Convention’.2 According to a ‘common understanding’ adopted by those same parties, the ecosystem approach ‘is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way ...’. It ‘requires adaptive management

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to deal with the complex and dynamic nature of ecosystems and the absence of complete knowledge or understanding of their functioning.\textsuperscript{3}

A few years later, the 12 so-called ‘Malawi Principles for the Ecosystem Approach’ were elaborated within the CBD framework and endorsed by the parties to the Convention.\textsuperscript{4} Among these principles is the recognition that management objectives are a matter of societal choice (Principle 1) and that the ecosystem approach should seek the appropriate balance between conservation and use of biodiversity (Principle 10). In terms of how management should be structured, the principles hold that the ecosystem approach should be undertaken at the appropriate scale (Principle 7) and that management should be decentralized to the lowest appropriate level (Principle 2). Ecosystems must be managed within the limits of their functioning (Principle 6), and while change is recognised as inevitable (Principle 9), objectives for ecosystem management should be set for the long term (Principle 8). In addition, application of the ecosystem approach should involve consideration of all forms of relevant information (Principle 11) and involve all relevant sectors of society and scientific disciplines (Principle 12).

In practice, the application of the ecosystem approach is anything but intuitive. The various, and varying, features and complexities of both natural ecosystems and human-created institutional, legal and administrative systems make the effective implementation of the ecosystem approach both complex and highly challenging. Given the vast number of complex issues to be considered in applying an ecosystem approach, it is difficult to stipulate universally applicable rules of any significant specificity for the effective operationalization of the approach. Nevertheless, despite these challenges, the approach is now well established as a guiding principle in many contexts and its application is often seen as a prerequisite for the successful management of ecological systems.

In the international law context, the ecosystem approach has come to feature particularly strongly in the context of marine management. One early iteration is found in Article II of the 1980 Convention on the Conservation of Antarctic Marine Living Resources,\textsuperscript{5} which requires any conservation or harvesting and associated activities to be carried out with regard not only to the maintenance of the ecological relationships between harvested and non-harvested species but also to the broader marine ecosystem as a whole.