

Between the land and the sea – Considering social-ecological systems for better coastal and ocean management.

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The management of natural resources is changing paradigm from *sustainable yield* to *sustainable ecosystems*. This new paradigm is termed *ecosystem management* and focuses on management of the whole system for a variety of services, rather than focusing on commodity production for a single resource. But our own social system puts boundaries and constraints on our ability to manage the biosphere we are part of. Therefore, ecosystem management is primarily about human values and their capacity to incorporate the best scientific knowledge.

In other words, ecosystem-based management is about managing the social-ecological system which, by nature, has a multi-scale pattern, both spatial and temporal. Keeping the system within a particular configuration of states that will continue to deliver desired levels of ecosystem goods and services suppose to take into account its level of resilience, i.e. its capacity to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks. This process is characterized by its *non-linearity*, *unstable states*, and *thresholds*.

The Great Barrier Reef, a World Heritage area, is considered as one of the most significant case studies in regard to ecosystem-based management. Its Outlook Report 2009 is structured around eight assessments including the values (biodiversity, ecosystem health, commercial and non-commercial use), the pressures (influential factors, protection and management, ecosystem resilience, risks), and the outlook of the Great Barrier Reef. In spite of long-term and quite significant management measures, the overall achievement of outcomes is considered as poor because the main drivers of change originate beyond the scale of the Great Barrier Reef region and the ability to address cumulative impacts remains weak.

Ecosystem-based management is one of the key ICM principles which calls for new forms of transnational government networks at international, national and local levels.