CORAL TRIANGLE INITIATIVE
ON CORAL REEFS, FISHERIES AND FOOD SECURITY

POLICY BRIEF:
ECOSYSTEM-BASED MANAGEMENT

COMPOSITE FIGURE: FISHER WOMAN IN WAKATOBI, INDONESIA © JURGEN FREUND/WWF CANON; FISHERMEN IN THE PHILIPPINES © J. SIMONETTA

Coral Reefs, Fisheries, and Food Security: Integrated Approaches to Addressing Multiple Challenges in the Coral Triangle

Challenges for coral reefs, fisheries and food security

The Coral Triangle is the most biologically and economically valuable marine ecosystem on the planet. Covering just three percent of the globe, the region represents more than half of the world's reefs and boasts 76 percent of its known coral species. Sustaining more than 130 million people who rely directly on the marine ecosystems for their livelihoods and food, the marine habitats of the Coral Triangle contribute billions of dollars each year toward the economies of the region.

Although the environmental imperative for preserving this area of incredible value and biodiversity is obvious, the growing pressures and

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threats from widespread poverty, rapid development, and global demands continue to place enormous strain on the natural marine resources of the Coral Triangle. There is an urgent need for improvements in management and protection, with more than 40 percent of the reef and mangrove habitats in the region having been degraded or destroyed. This leaves many habitats and species extremely vulnerable to extinction. Many important coastal and pelagic fisheries across the region are depleted, with some fisheries already collapsed or heading toward collapse. Fisheries underpin the livelihoods and food security of millions of inhabitants in the region and are also crucial to export income. Overfishing, destructive fishing practices, habitat loss, pollution, and climate and ocean change all threaten the future of this precious seascape and its inhabitants.

Fishers in Timor-Leste carry their catch.

A New Approach to Management

Overlapping mandates, fragmentation of jurisdiction, and institutional conflict have become the dominant features on the governance of these ecosystems in the region. Coastal planners address land-based issues of the coastal zone and impending changes from climate and ocean change. Fisheries managers address exploitation of fish. Conservationists and environmental ministries protect threatened species, reefs, and mangroves. Tourism and economic development ministries identify new areas for resorts. A new approach for more coordinated management is needed to address the multiple impacts on and ensure long-term sustainability of oceans and coasts in the Coral Triangle region.

This calls for a broader vision of marine and coastal ecosystems management going beyond sector-specific policies and mandates. We need a more robust, integrated framework that involves multi-sector approaches and the vast array of seemingly unrelated policies that may have beneficial side effects for these ecosystems. The broader governance context is justified by discussions that recognize that marine and coastal ecosystems are composed of both natural and human elements and that ecosystems are interconnected. And as our understanding grows about interactions of various components of marine and coastal ecosystems – fish, people, habitats, and climate – it is natural to move toward more integrated forms of management. Government ministries and departments cannot undertake this approach alone. There will be a need to reach out and coordinate with other government ministries and departments with expertise in fisheries management and economic and social development, for example, and across different levels of government, from national to local. Similarly, key strategies for managing coastal resources such as an ecosystem approach to fisheries management (EAFM), marine protected areas (MPA) and similar area-based management, and climate change adaptation approaches, among others, must be utilized in a coordinated and integrated manner rather than through stand-alone plans and projects.

Coastal villages in the Solomon Islands depend on fish and other marine resources for income, food, and livelihoods.

Ecosystem-based Management as an Integrated Approach

The complexity of issues facing marine coastal ecosystems in the Coral Triangle region require that management be integrated, just as ecosystems are interconnected.

Ecosystem-based management is an approach that goes beyond examining single issues, species, or ecosystem functions in isolation. Fisheries management, marine protected areas, seascapes, or climate change adaptation cannot, in isolation, provide solutions. Ecosystem-based management recognizes the complexity of marine and coastal ecosystems, the connections among them, the linkages with the land and freshwater, interactions with people, and the need for intersectoral governance. Rather than single-species fisheries or single-sector management, the ecosystem-based management process seeks management of the whole ecosystem, including human influences. It aims to integrate all sectors that impact or are impacted by the ecosystem. It requires coordinated management at all levels relevant to the ecosystem. Ecosystem-based management builds on what is already being done through sector- or issue-specific approaches. For example, in the Bird's Head region of West Papua, Indonesia, the provincial government's spatial plan integrates a large-scale marine protected area network, designed with

Alignment of the five CTI-CFF goals and ecosystem-based management outcomes through an EBM framework.

ecosystem-based management principles, with the sustainable management of fisheries. Implementing ecosystem-based management does not require that everything be done all at once but allows for prioritization of the most important management issues and actions. Ecosystem-based management can improve the way we manage marine and coastal ecosystems. In some cases, it will require better scientific research to understand ecosystems and improved coordination and communication across sectors.

Fish for sale in the Solomon Islands.

Advancing Ecosystem-based Management

A number of enabling conditions are necessary for ecosystem-based management success to occur in-country and regionally:

1. Coordination mechanisms must exist across levels of government, from national to local levels, as well as across different ministries. This should include data- and information-sharing, planning support, and local implementation support. This should also include large-scale areas, such as a seascape, across fishery management area boundaries, and across marine protected area networks.
2. A specific, lead national government agency should be designated to oversee and encourage coordination and integration between agencies and departments at all levels.
3. A clear set of outcome-based objectives should be approved by decision-makers and officials.
4. A supportive ecosystem-based management policy framework should be established, including harmonized national and local legislation and policies that integrate climate change adaptation, ecosystem approach to fisheries management, and biodiversity conservation.
5. Harmonized work plans and budgets supporting integration should exist across levels of government.
6. Stakeholder involvement should be encouraged in all aspects of the management system.
7. Capacity-building at national government, local government, and community levels should support the application of ecosystem-based management, including active ecosystem-based management on the ground.
8. Data and information are regularly collected by agencies that support ecosystem-based management.
9. Site-level implementation of ecosystem-based management is actively supported.

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Coral Triangle Support Partnership

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For more information

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