Ecosystem Approaches to the Management and Conservation of Fisheries and Marine Biodiversity in the Asia Region

27-30 October 2013, Kochi, Kerala, India

Conclusions and Recommendations

Preamble

Mangroves for the Future (MFF) and the Ministry of Environment and Forests, Government of India, convened a Regional Fisheries Symposium at Kochi in the southern coastal State of Kerala, India between the 27-30 October 2013, in partnership with the Bay of Bengal Large Marine Ecosystem Project (BOBLME), the Central Marine Fisheries Research Institute (CMFRI) India, the Food and Agriculture Organization (FAO) of the United Nations, the South East Asian Fisheries Development Centre (SEAFDEC), and the United Nations Environment Program (UNEP).

The objective of the Symposium was to explore ecosystem-based approaches to management and conservation of fisheries and marine biodiversity in Asia, provide a forum for productive debate, and draw out knowledge and share practical solutions based on science and indigenous knowledge. Furthermore, the Symposium aimed to bridge the gap between the often conflicting priorities of the fisheries and environmental conservation sectors.

Experts, scientists, policy makers, Inter-Governmental Organizations and NGO representatives from 11 Asian countries; Bangladesh, Cambodia, China, India, Indonesia, Pakistan, Philippines, Seychelles, Sri Lanka, Thailand, and Viet Nam came together for scientific sharing and debate on the best ways to balance economic, social and environmental interests, to achieve sustainable fisheries for the Asia region.

Thirty seven scientific papers were presented covering five thematic areas: (i) Coastal Ecosystems and Fisheries – Towards and Ecosystem Approach to Fisheries Management; (ii) Spatial Planning, Marine Protected Areas and Fisheries Management; (iii) Artisanal Fisheries, Livelihood and Biodiversity; (iv) Exploring the Issues of Bycatch and Bycatch Management; and (v) By-catch, Sharks, Marine Turtles and other Endangered and Threatened species.

Discussions at the Symposium focused on the Ecosystem Approach to Fisheries Management (EAFM), the use of Marine Protected Areas (MPAs) and Fisheries Refugia (FR), as well as on the use of conventional fisheries management approaches and the reduction of bycatch. The Symposium also presented and discussed the recommendations from the recent Asia Pacific Fishery Commission Workshop on Managing Tropical Trawl Fisheries, held in Phuket, Thailand, 30 September- 4 October, 2013.

The symposium resulted in a number of conclusions and recommendations for practical action and future collaboration between countries, sub-regions, scientists, community practitioners, policy makers, and sectors to support national and regional policies for improved ecosystem based management of fisheries and marine biodiversity.

Conclusions and Recommendations

Recognizing that

- marine fisheries contribute substantially to the nutritional, social and economic benefits of the people in the Asian region and that millions of people in the region depend heavily on the health and productivity of critical coastal habitats and fisheries for their basic food, materials and livelihood needs;
- there is a growing interest on the application of ecosystem based fisheries management and some examples of good practices on ecosystem based fisheries management that can be shared among the countries of South and Southeast Asia;
- there are growing concerns about the sustainability of fishery resources and the impacts of fishing practices on ecosystem services and marine biodiversity;
- unintended consequences of some fishing practices, including habitat destruction, incidental mortality of non-target species, are changing the function and structure of ecosystems;
- over-capacity[i] in fisheries often leads to overexploitation of fish stocks;
- there is growing consensus that fisheries management should adopt the Ecosystem Approach to Fisheries Management (EAFM) in order to address the twin objectives of fisheries sustainability and marine biodiversity conservation in coastal and offshore areas and that this should be a part of a holistic Integrated Coastal Management Approach;

The Symposium concluded that

- Fisheries Refugia (FR) offer a complementary management approach to traditional MPA management and involve the identification and designation of priority areas within which to integrate fisheries and habitat management objectives. The Fisheries Refugia approach is being tested in a number of countries in South East Asia and offer a good model for further learning and replication and or piloting across Asia and especially in South Asia,
- The Ecosystem Approach to Fisheries Management (EAFM) is a management planning process that offers a practical way to implement sustainable development principles for the management of fisheries and coastal habitats. EAFM has the potential to significantly enhance and evolve marine fisheries management in Asia and to contribute to the conservation of marine biodiversity. EAFM is complementary to a number of related approaches and management tools including, among others, Integrated Coastal Management (ICM), Coastal Zone Management (CZM), Sustainable Livelihood Approach (SLA), Wealth-Based Fisheries Management (WBFM), Ecosystem Approach to Fisheries (EAF), Large Marine Ecosystem (LME), Marine Spatial Planning (MSP),
- Overcapacity is a significant issue with respect to the continuing decline of fisheries in Asia that urgently needs to be addressed as part of a holistic solution to sustainable fisheries management. Fishing capacity should be urgently addressed and if required aligned with the harvestable potential (where such figures are available) or on the basis of a precautionary approach,
- Capture of juveniles of target species and incidental catch of non-target species are major issues that need to be addressed following suitable interventions,
- The use of marine spatial planning, including spatial and temporal closures, are recognized as effective components of ecosystems based management of coastal habitats and fisheries,

- Building effective institutions and mechanisms for the management of fisheries resources requires a close match between the spatial extent of the resource, the capacity and jurisdiction of the institutions as well as mechanisms to manage the resources. Defining appropriate operational management boundaries for ecosystem based fisheries management is important and will require matching fisheries management system boundaries with ecosystem boundaries. It will also take into account the joint unified operational management mechanisms.

The Symposium further recommended

Sound Management Principles

1. The Ecosystem Approach to Fisheries (EAF) concept and related implementation framework Ecosystem Approach to Fisheries Management (EAFM), are consistently applied to address issues concerning the wider interactions between fisheries and the ecosystem as a whole,

2. MPAs and FR are promoted as important elements of the Ecosystem Approach to Fisheries Management (EAFM) and conservation of marine biodiversity. Establishment and strengthening of these measures need to address the tenure and livelihood concerns of all stakeholders,

3. Studies should be undertaken to define success of implementing the EAFM in order to monitor, evaluate and demonstrate the benefit of ecosystem based management approaches. In particular, establishing indicators and reference points as part of a framework for monitoring management performance should be prioritized,

4. Capacity development is promoted at all levels from the policy decision makers/managers, to grassroots practitioners of fisheries and biodiversity conservation to take into account that Ecosystem based approaches are relatively new but gaining ground in the Asia region. In particular, it is recommended that EAFM training should be promoted and incorporated as part of existing and new courses, both at regional and national levels through a network approach,

5. Traditional fisheries management measures including catch and effort quotas, gear design and restrictions should be based not just on sustainable use of the target resources but on their impacts on and implications for the whole ecosystem,

6. Unsustainable bycatch of juveniles should be reduced by introducing appropriate measures such as use of Bycatch Reduction Devices (BRDs) and modification of gear in a participatory process including all stakeholders,

Economic Justification

7. Total economic valuation of the ecosystem goods and services of critical habitats and associated fisheries should be applied in order to support sound development planning for sustainable fisheries as a part of sustainable coastal ecosystems management. In particular economic valuation and recognition of artisanal / small scale fisheries for their importance in the provision of food security (accessible and affordable protein) and livelihood services, in addition to other supporting services, should be considered more carefully in planning and policy decision making processes,

Enabling Policies and Safeguards

8. Application of ecosystem approaches must be based on effective cross-sectoral cooperation and

collaboration, which *inter alia* may require harmonization, coordination and mainstreaming of policies and programmes of government agencies. In some cases revision of some national laws, by-laws, decrees or ordinances may be needed to provide the required legal support. Formulation of management plans for important fisheries and other resources will be necessary. Similarly, governance frameworks to support adoption and implementation of ecosystem approaches may require strengthening,

9. Integrated Coastal Management (ICM) should be promoted as the underlying management framework required for the successful implementation of ecosystem based fisheries management in order that fisheries and non fishery users can co-exist with minimal conflict ICM strengthens coordination and cooperation between different local and national agencies working in the areas of fisheries, environment, tourism, shipping, ports etc. and the engagement of local government units and resource users on the ground. These institutional and policy arrangements and governance structures are to be in place for the effective adoption of ecosystem approach to fisheries management.

10. The policy and management decision making processes should be inclusive and participatory in order to achieve effective management of local fishery and coastal resources. The establishment of access rights systems, appropriate and enforceable rights to ecosystems resources is an essential component of the aforementioned processes that also include establishment of partnerships and co-management groups involving local communities/other civil society groups, private sector as well as the government. It is particularly important to empower small scale and artisanal fishers and fishing communities (e.g. through strengthening of their associations and representations) to enable them to engage and participate in the co-management process,

Research, Communication and Information Management

11. Data collection, processing and dissemination be strengthened and effective mechanisms be established to allow flow of information, especially among scientists, policy makers and local management decision makers, as well as community members and resource users. The use of indigenous/traditional knowledge in the process of sourcing information is important and should complement and be supported by scientific research,

Specific recommendations:

- Seek opportunity to advance the scientific basis for incorporating ecosystem considerations into management processes, including research in;
  - The structure and functioning of marine ecosystems, including, biological and physical factors affecting their stability and resilience;
  - Life cycle studies of commercial fish species including temporal and spatial distribution of critical stages;
  - By-catch and discard patterns in all fisheries to obtain better knowledge of the amount of fish actually taken;
  - Development of fishing technology and practices to improve gear selectivity and reduce adverse impacts of fishing practices on habitat and biological diversity;
  - Marine mammals and other endangered, threatened, and protected species (including sharks, marine turtles, snakes and birds) for their improved protection and conservation;

- Applied research and case studies of ecosystem management should be actively pursued. Knowledge gaps about ecosystem based fisheries management should be addressed by

regional initiatives to support the development of national and transboundary near-shore fisheries management,

- Ensure that the existing guidelines on responsible fishing practices are adapted to meet the local conditions and disseminated to the actual user groups in appropriate local language.
- All regional countries are requested to increase their efforts to draft and finalize, as well as implement and review existing National Plans of Action (NPOA) for sharks, marine mammals and seabirds and other endangered, threatened and protected species,
- Strategic communication and awareness raising for all stakeholders in the 'value chain' (from fisher, to market, to consumer) is critical for ecosystems management and conservation of biodiversity to be effective. Harmful impacts of fishing gears on marine mammals, marine turtles and sea birds (and other vulnerable species) are important and emotive issues which require proper research and communication,

Regional Cooperation

12. Regional cooperation and information sharing to address issues of transboundary nature (e.g. conservation of biodiversity; management of shared fish resources; marine pollution prevention and ecosystem health) and share experiences regarding successful as well as unsuccessful application of the ecosystem approaches are improved.

13. The regional partnerships established during the Symposium are maintained for continued collaboration and sharing on ecosystem management approaches for fisheries and marine biodiversity conservation. In particular, the symposium noted that

    - regional programmes and projects (such as MFF, BOBLME, SEAFDEC, FAO/ APFIC, UNEP and BOBP- IGO) have demonstrated potential for promoting regional good practices, information sharing and capacity development to support coastal and marine ecosystems management and should be continued,
    - the many agencies, programmes and projects working in ecosystems based fisheries management and coastal conservation should collaborate to the extent possible to improve regional understanding of ecosystem based management practices in order to optimize results and benefits, and avoid duplication of work.

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MFF Secretariat

[i] The term "**overcapacity**" can be described in two ways. In input terms, "overcapacity" means there is more than the minimum fleet and effort required to produce a given TAC or given output (harvested catch) level. In output terms, overcapacity means that the maximum harvest level that a fisher could produce with given levels of inputs, such as fuel, amount of fishing gear, ice, bait, engine horsepower and vessel size would exceed the desired level of harvesting or TAC.

Fisheries and Aquaculture topics. Assessing fishing capacity and overcapacity. Topics Fact Sheets. **Text by Rebecca Metzner.** In: *FAO Fisheries and Aquaculture Department* [online]. Rome. Updated 27 May 2005. [Cited 20 November 2013]. http://www.fao.org/fishery/topic/14858/en