

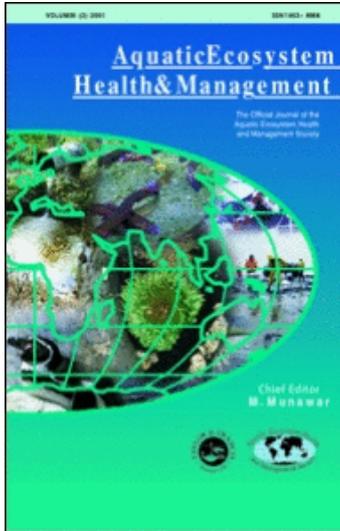
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Some institutional implications of an ecosystems approach to capture fisheries management

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Some institutional implications of an ecosystems approach to capture fisheries management

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An ecosystems approach to capture fisheries management has some practical implications for institutions. The goal should be to achieve, at the local or sub-regional level, an integration of fisheries and habitat management. To succeed, cooperation among the various departments of fisheries, environment, and marine and coastal resources together with those responsible for zoning of activities along the coast and in coastal waters must be fostered. In addition, fishermen and coastal villagers must be involved. Here, an introduction is given to some of the institutional and social aspects that must be addressed, based on experiences in Southeast Asia. The paper includes: a) an overview of institutional implications at various levels; b) participatory and local approaches to fisheries and environmental management; c) the uses of various types of fisheries resources and environmental conservation areas; d) coastal planning activities, that have increasing importance due to the rise in natural hazards in the wake of climate change; and e) the need to manage fishing capacity to reduce conflicts and to provide a balance between fishing effort and ecosystem productivity. Positive actions in these areas should move ecosystems towards sustainability and create a less conflict prone environment.

Keywords: Southeast Asia, participatory approaches, resources conservation, coastal planning, fishing capacity, climate change

Introduction

Conceptually, ecosystems approaches to fisheries are fairly straightforward and well documented by FAO and others (FAO Fisheries Department, 2003; Shepherd, 2004; FAO Fisheries Department 2008). However, practical application requires the involvement of a range of institutions and organizations. Ideally, the fisheries administration will take the lead in the capacity of being the agency responsible for monitoring and control of fisheries. Managing the broader ecosystem services requires the involvement of not only fisheries agencies but also of departments for marine and coastal resources, ministries for environment and others as relevant (FAO Fisheries Department, 2003). Finding ways to share

responsibilities and (financial) resources is a major challenge. Many of the “tools” available to specifically protect certain areas, such as natural parks and MPAs (Marine protected areas) are often held within the mandate of departments of forestry, ministry of environment or specifically designated bodies for park management (Torell and Salamanca, 2002).

The institutional framework should take into account the increased efforts being made to decentralise management and decision-making down to province and district level. The provincial and district authorities need to be aware of and informed on critical management needs. This is even more crucial in countries where also funds are allocated to the provinces as is the case in many South-east Asian Countries (Torell and Salamanca, 2002;

Torell, 1998). The references to institutions to be consulted could be expanded quite dramatically both by widening the circle of government bodies that, from time to time, would need to be involved and by making reference to independent organisations, NGO's, private sector and the civil society. Institutional responsibilities at all levels need to be sorted out from the onset.

Participatory and Local Approaches to Fisheries and Environmental Management

The importance and value of participatory and locally based approaches to planning and management of near shore fisheries and habitats has frequently been referred to and highlighted by participants at workshops and on-site training organised by the Southeast Asian Fisheries Development Centre, SEAFDEC,¹ in Cambodia, Vietnam, Thailand and Indonesia in 2005 and 2006 (SEAFDEC, 2005: 1; 2005: 2; 2005: 3; 2006: 1). Participatory and local approaches need to be emphasised in the context of planning, management and monitoring as well as regulatory control. Management plans could be designed and developed based on local knowledge and traditional practices. Local participants can guide the designation of habitats of special importance for either seasonal or more permanent measures, such as reduced fishing. With local buy-in, the zoned areas will be better recognized with an increased likelihood of protective measures to be followed (SEAFDEC, 2006: 2; 2006: 3; 2006: 4; 2006: 5) (see more below on designation of zones of various types).

Conservation Areas

Earlier a brief reference was made to some of the "tools" available to designate certain areas for specific management measures, such as MPA's and natural parks. The actual implementation of a large number of schemes, set up under different institutional or legal frameworks, could prove to be confusing or difficult to enforce on individual fishermen. The potential number of designated areas is large: MPA's, natural parks, natural heritage areas (UNESCO + ASEAN), wildlife sanctuaries, closed fishing seasons, trawling free zones (measured in

distance from the coast or by depth curve), community fisheries (that often include a conservation area), refugia, "fisheries resources conservation areas" as well as "project demonstration sites" (to be developed into designated management areas). A common problem for implementation is that areas are not sufficiently demarcated. In areas where two or more "zones" areas are overlapping the demarcation becomes even more difficult to delineate in ways that becomes clear (SEAFDEC, 2006: 2; 2007). SEAFDEC have made an attempt to highlight this by making a summary map for coastal Cambodia that would indicate the location and, as far as possible, the size of different management/protection areas based on presentations during an on-site training session in Koh Kong Province, Cambodia, 6 – 9 August 2007 (SEAFDEC, 2007).

Solutions might not be that clear cut, but a suggestion would, again, be to seek coordination among institutions and try to agree on joint boundary setting for areas established for similar purposes (natural heritage, MPA's, etc)

Coastal Planning

Efforts to apply ecosystem approaches to fisheries management need, to become effective in the longer term, to be recognised by those responsible for coastal planning. Sweden is a good example of how environmental and resources utilisation aspects are integrated at various jurisdictional stages of the planning cycle (national, district, municipality, etc) providing a strict but consistent framework for the sector ministries to follow (www.boverket.se). The national and local planning authorities should ensure that requirements to maintain and rehabilitate important ecosystem components become an integrated part of the planning process. MPAs, refugia and other fisheries resources conservation areas should be indicated in the coastal development plans. Environmentally damaging developments should not be allowed in sensitive coastal areas. Where needed, the plans should indicate areas where rehabilitation of geographical features might be needed in coastal areas to restore important ecosystems and to mitigate effects that could be caused by natural hazards. In the planning process the potential effects caused by climate change should also be considered (see below).

Having emphasised the importance of planners to recognise ecosystems requirements to maintain a healthy fishery it is equally important that in the national and local planning dialogue is maintained

¹SEAFDEC is an intergovernmental fisheries organisation and all ASEAN Countries plus Japan are members

with the fisheries agencies and other stakeholders to pave the way for a socially and environmentally balanced fishing sector – taking into account both the smaller and large scale fishing operations. With whatever approach planning processes are driven it is important that the rights of coastal villagers to remain on the coast and continue, in regulated form, their traditional practises, such as fishing, in coastal waters are secured (ICSF Siem Reap, 2007). All too often they are relocated to pave the way for other “developments”. To ensure responses from and transparency for coastal villagers, it is important that they become part of the planning process.

The Management of Fishing Capacity

Imperative to any attempt to manage fisheries there is a need to address the management of fishing capacity (SEAFDEC, 2004; 2006: 6). If there is too much active fishing capacity (boats, nets, combined efforts) relative to the amount of available resources fishing effort needs to be controlled. Approaches would vary from country to country depending on the specific conditions. “Blanket solutions” or measures will rarely be sufficient rather, in an ecosystems perspective efforts need to be more area specific. A number of different “tools” to manage or conserve important habitats and to maintain ecosystem integrity has been mentioned earlier, such as MPA’s and refugias. The establishment of different conservation or management areas implies that the fishing effort has to be further reduced – or stopped – either seasonally or permanently. Other schemes might imply total ban on certain types of gear in designated areas or provide an exclusive right for certain groups, or members of a community (SEAFDEC, 2004).

Seen generically, it is critical to manage fishing capacity in a socially acceptable way to reduce conflicts among groups of people involved in fishing and to seek a balance between fishing effort and ecosystem productivity (SEAFDEC, 2006: 6).

Adapting To Climate Change

Climate change and changes in the monsoon pattern can have far-reaching effects on coastal livelihoods and availability of fisheries resources in Southeast Asia. Ecological factors, such as fe-

cundity of fishes, replenishment, migration or productivity, are in tropical waters very different from those in temperate waters. The monsoon pattern combined with geographical features such as coral reefs, mangrove areas, sea-grass beds and other critical habitats are unique to the region and provide the basis of the ecological specificity as well some protection against natural hazards and the effects of climate change (Torell and Chamchang, 2008).

Poor coastal villagers are also under pressure from expansions of urban, industrial and tourism development. This often results in a push to move families and whole villages, leading to increased competition for fish with other villagers. This together with increased clearance of mangroves for urban and industrial development, shrimp farming and other uses leaves the coastal villages more exposed to natural hazards and climate change. As a consequence traditional knowledge on how to “live with the sea” and how to manage and maintain coastal habitats is rapidly being lost.

Furthermore, some of the developments in coastal areas are, if not properly controlled, contributing to climate change as well as for changes in the local climate and environment. A reversal of present trends of coastal environmental degradation could, in fact, be important in order to reduce effects caused by natural hazards. The rehabilitation of important coastal habitats (such as mangroves) and geographical coastal features (such as sandy beaches) to be able to maintain critical areas for various fish species during their lifecycle should, ideally, be done incorporating plans to restore protective features as well as to mitigate potential effects caused by climate change (Torell and Chamchang, 2008).

Conclusions

To protect fisheries resources and the environment, there is a need for fisheries and environmental authorities to come together to integrate fisheries management with habitat management to ensure that developments in coastal (and inland) areas are ensuring due concern to the aquatic resources and the marine environment. As part of this process, it is important to assess potential impacts of climate change and how that will affect availability of natural resources and aquatic products. Without action, fishing pressure, fishing conflicts and conflicts with other uses are likely to increase, and will lead to resource depletion through environmental

degradation and/or through heavy fishing. Strong collaborative efforts, at different jurisdictional levels, using ecosystems approach will lead to effective management and curb the escalation of environmental degradation.

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