

Improving Community-based Fisheries Management in Coastal Areas: Policy Recommendations

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In recent years, fishers in most Southeast Asian countries have continuously experienced diminishing volume and value of fish catch greatly affecting their livelihoods. Although this has generated anxiety among the fishers, it has also provoked them to undergo positive change. The fishers have resolved that a solution to such problem does not lie on the central government alone but on the need for proactive engagement in the management of the fishery resources.

Thailand is one of the top producers of fish and fishery products in the world, but its marine sub-sector has exhibited decreasing catch rate due to numerous issues such as overfishing and use of destructive fishing methods. To address such issues, the Government of Thailand implements a Marine Management Strategy that focuses on fish conservation and management plans, by increasing conservation areas, rehabilitating the aquatic environment, assisting the fishers to increase their daily incomes, and focusing the implementation of these plans on the provincial level. Cambodia on the other hand, boasts of a productive freshwater fisheries sector due to the presence of large floodplains, but its marine fisheries production pales compared with that of inland fisheries probably due to limited fishing area. Cambodia is also confronted with issues on degradation of its marine aquatic resources including its rich mangrove forests. Thus, the Cambodian Government has utilized several management tools to protect these resources, such as the use of permits and licenses for local and foreign fishing boats/gears, establishment of fish sanctuaries, and protection and enhancement of existing mangrove areas, among others.

The concept of Community-Based Fisheries Management (CBFM) is widely adopted in many Southeast Asian countries, *i.e.* Philippines, Indonesia, Thailand, and other. CBFM provides the coastal communities with the principal obligation to administer their own resources, with emphasis on localized participative approach involving constant coordination among the fishers in terms of planning, monitoring and managing these resources. The CBFM approaches implemented in the coastal areas of Chanthaburi and Trat in Thailand, and Koh Kong in Cambodia differed but the result could be seen from the highly successful projects in their respective communities.

Chanthaburi Province in the eastern part of Thailand has a total area of 6,338 km² and population of 516,855 in 2011. It is rich in natural water resources along the eastern coastline, where the total area of 4,695 ha is devoted to fish culture with an annual yield of approximately 67,000 metric tons. Fish and fisheries products account for 60% of province's production while the total number of fishing vessels is 2,124 comprising of 1,039 registered and 1,085 non-registered with 16,517 fishers. The fishing gears used are mostly gillnets and traps (DOF Thailand, 2012). Two significant local institutions working on fisheries development include the Chanthaburi Campus of Burapha University and Kung Krabaen Bay Royal Development Study Center. The faculty of Marine Technology at the Chanthaburi Campus is conducting various research activities on marine technology as well as aquaculture development utilizing environment-friendly and natural resources management techniques.

Researches involve Geo-informatics and Remote Sensing Program (GIS-RP) and Ocean Atmosphere System Research Program (OASIS), where the GIS-RP provides the useful tool for environmental and natural resources management, while the OASIS is meant for collecting data on the atmosphere and the sea surface water such as temperature, pressure, wind direction and speed, humidity and other parameters to be used in monitoring oceanographic status, managing the natural environment, and adapting to climate change. Aquaculture development research focuses on domestication of shrimp broodstock and disease surveillance.

The Kung Krabaen Royal Development Study Center was established in 1981 and as conceptualized by His Majesty



SEAFDEC officials with representatives from Burapha University, Chanthaburi Campus, Thailand



Discussion between SEAFDEC officials and officers from the Provincial Fisheries Office of Trat, Thailand

the King Bhumibol, it has two objectives: “to consider a suitable area for development of fisheries and agricultural activities and to select deforested area or public land where a Royal Development Study Center could be established”. The main purpose of the Center is to promote the dissemination of knowledge, skills and appropriate techniques on aquaculture, coastal environmental protection and conservation, and agriculture and animal husbandry through the use of “demonstration projects”.

Trat province is located in the easternmost part of Thailand and borders with Koh Kong Province of Cambodia. With total area is 2,819 km², its coastline is 165 km with 52 large and small islands, which is rich in natural marine resources. This province has much potential for fisheries development both in capture fisheries and coastal aquaculture. Swimming crab is one of the main target species in Trat because of its high market demand and is usually caught by crab gillnet and crab trap. However, its crab resources had been decreasing due to increased number of fishers, and use of destructive fishing gears and illegal fishing activities. Recognizing the importance of the crab resources, the Trat Provincial Fishery Office promotes various programs on effective fisheries management to enhance the existing crab resources in the area, such as the Crab Bank which aims to increase the swimming crab population in the coastal area of the province and is managed by the fisheries communities of Trat.



Sorting fish catch at Chalalai Fishing Port, Klong Yai District, Trat Province, Thailand

Koh Kong Province is in the southwestern part of Cambodia on the coast of the Gulf of Thailand. The area of the province is 11,160 km² and its coastline is about 237 km long. It is one of four coastal provinces of Cambodia, and has the biggest mangrove area, where approximately 73% of the total mangrove area in the country is found (SEAFDEC, 2007). A total of 68,409 ha of community fisheries are under the protection and management of 26 villages that have been organized into 10 fisheries community organizations. Specifically, CBFM is practiced in Peam Krasob and Chroy Pras.

The Peam Krasob Wildlife Sanctuary was established and is home to several small communes, where livelihoods rely on the natural resources of the surrounding mangrove forest, especially dependent highly on green mussel cultivation, fishing and aquaculture. Currently, around 341 households are involved in fishing activities using trawls, push nets, gillnets (mackerel net), crab traps, among others. Other occupations are general labour, motorbike driving and animal husbandry. Numerous fishing boats (about 1,000) from other provinces such as Kampot, Kep and Preh Sihanouk provinces, and neighboring countries are operating in Peam Krasob resulting in conflicts between large- and small-scale fishing (Sun Kong *et al*, 2013).

The Chroy Pras commune has 197 households relying on small-scale fisheries activities, such as catching swimming crab and mud crab using crab traps and gillnets with long-tail motorized boats. Due to the presence of many illegal fishing activities, several programs on fisheries management has been implemented by various groups. Established since 2002, the community fisheries had been responsible for the management of 11,085 ha, of which 1,052 ha is mangrove area and 2,198 ha of seagrass beds. The United Nations Development Program (UNDP) supported the communities by deploying artificial reefs and demarcating the community fisheries management areas. Two types of artificial reefs had been installed, concrete reef boxes and poles covering 1,103 ha, and based on their experiences, pole artificial reefs should be used because of the characteristics of the seagrass bed and the muddy bottom. Catching swimming crab is also one of their main sources of livelihoods in Chroy Pras. Since its crab resources have been declining for the past years, the commune established in January of 2008, a Crab Bank to arrest the decreasing crab population. Moreover, in order to improve the livelihood and augment the incomes of villagers, the commune council of Chroy Pras has encouraged the women to form Women’s Saving Groups. Presently, there are three Women’s Saving Groups in the commune with their established corresponding internal regulations with assistance from a Non Government Organization (NGO).



Dialogue between SEAFDEC officials and members of local community of Peam Krasob, Cambodia

Way Forward

Considering that the coastal fisheries resources in these selected areas have declined substantially, and the coastal fishing community suffers from overfishing, there is a strong need to implement a sustainable approach to manage the fisheries resources using several tools, which could include establishment of Marine Protected Areas (MPA), National Marine Park, and Wildlife Sanctuary, as well as CBFM schemes which have proved to be the most effective tool to improve livelihoods and manage the fisheries resources.

However, the implementation of the CBFM requires addressing some concerns such as the conflict among the small-scale and large-scale fisheries, the use of destructive fishing gear and practices such as trawls and push nets, and the illegal operation of fishing boats from other provinces and neighboring countries. Although the responsibility of managing CBFM is primarily shouldered upon the local communities, it is important to note that the implementation of CBFM should be unique to each area and situation, and should incorporate awareness, willingness, cooperation, involvement and flexibility among the community members to work together for the collective good and long-term benefits. It is also important for these communities to

Box 1. Ways on how to sustain and improve the current practice of CBFM

- Increase the awareness among the local communities on fisheries management
- Capacitate local communities and government officers to develop, agree upon, monitor, and enforce regulations
- Strengthen technological, legal and financial ability to control and manage fishing grounds or fishery resources
- Develop strong social capacity, including effective organization, trust within the community, community rules and networks
- Seek sustainable financing for longer-term program and at the same time make the local community self-sufficient to be able to manage and augment their financial condition
- Seek government support, including a legal framework that legitimizes local rules
- Enhance the participation of various institutions including local government fisheries agencies, donors, NGOs, local universities, and community organizations

have a common understanding on the importance of self-governance dictated not by financial gains but by promoting stewardship and conservation practices.

The suggested ways in sustaining and improving the current practices of CBFM are shown in **Box 1**. Considering that CBFM is an effective approach to manage fisheries in the long-term, based on several key performance indicators such as fish production, resource sustainability and the fishers well-being, community-based fisheries management, it should be promoted for adoption in other countries, by fully involving local communities, the government and other stakeholders in the process to build up true fisheries management.

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