6.1.2 Management Concepts and Approaches

(2) Community-based and Co-management

(Contributors: Ms. Rattana Tiaye, SEAFDEC/TD; Dr. Dina Muthmainnah, SEAFDEC/IFRDMMD)

The primary purpose of fisheries management is to establish an appropriate system of management rules based on defined objectives, as well as a mix of management means to implement the regulations, which are put in place by a system of monitoring, control, and surveillance (Wilson et al., 2003). SEAFDEC (2017) added that many types of management measures are applicable for the inland resources in Southeast Asia, taking into account the various ways that water bodies are being utilized, i.e., for domestic consumption; industrial production; agricultural production; water barrier construction; and recreational uses. Such measures include co-management, community-based fisheries management, integrated management, and government-based management among others (Muthmainnah et al., 2019).

A system of community-based management, which protects the rights of access by fishing communities, including indigenous peoples, is likely to be the best pro-poor arrangement in many indigenous fishing communities. This could mean restriction of access to the resources to a well-identified group, which helps community property rights reduce the risks of overfishing, thus preventing the fishers from falling into the downward spiral case of poverty and resource overexploitation associated with open access regimes. At the same time, the fact that these property rights are granted to groups rather than individuals ensure a certain level of equity within the community by allowing all members (including the poorest) to access the fishing grounds and therefore rely on fishing to sustain their livelihoods. Therefore, the concept of community property rights is central to indigenous peoples and implies the recognition and enforcement of preferential access rights of (indigenous) fishing communities (FAO, 2009).

As for co-management, which is another approach, the focus is to uphold property rights or rights to access and limit other users from the resource. Co-management addresses the issue of ownership of resources and mechanisms to allocate use rights through rules and regulations. However, to date, literatures on mangrove utilization in many countries had limited documentation on informal or customary use-rights appropriation – in terms of their construction, logic, and historical transformation. It is therefore necessary to look into the social circumstances of the management actors because as their circumstances change, so does the community’s organizational structure (Aghayani, 2007).

The definitions of community-based management and co-management, as well as other approaches that aim to enhance the participation of local communities in fisheries management are shown in Box 1.

| Box 1: Co-management, Community-based management, Community-based co-management, and Right-based fisheries defined |
| Community-based management (CBM) is a central element of co-management and focuses on the community. The government plays a minor role or external player or adviser while community is the major player in the management (Robert, 1995). |
| Co-management (CM) is a partnership/participative arrangement between local resource users, government, other stakeholders and external agents, sharing the responsibility and authority for fishery management. Co-management focuses on an agreement among partners/users to share power and right to manage. Fisheries co-management can be classified according to the power sharing of the government and fishers. Moreover, co-management is not only for fisheries management but is also a mechanism for fishers and community participation in addressing the problems and needs in terms of community, economic, and social development (Robert, 1995). |
| Community-based co-management includes the characteristics of CBM and CM, and focuses on the need for people and the community to be involved in resources management, economic development, |
social empowerment coupled with sharing power and responsibility among the community, external organizations, and relevant institutions (Robert, 1995).

**Rights-based fisheries** promote the right of fishers to fish or utilize the fisheries resources provided they are licensed or permitted by the competent government authorities that give the licensed fishers’ access and use rights to the fishing grounds. Such rights are accompanied by obligations to comply with the rules and regulations of the right-based regime (SEAFDEC/Secretariat, 2006).

In order to enhance the promotion of the community-based management and co-management, the Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region 2030 adopted by the ASEAN and SEAFDEC Member Countries specified the priority actions to “Enhance and promote the participation of local communities, fisheries associations and other stakeholders in fisheries management and co-management. In addition, communities should take part in fisheries and stock assessments by providing data, local ecological knowledge, and status of the stocks.”

Many Southeast Asian countries have recognized the important potential role of community-based management and co-management systems in contemporary fisheries management. Community-based management systems have been the most long-enduring fisheries management system in the region. Although each country is taking different approaches toward the revitalization of these systems, for example, the approaches being undertaken in Indonesia has a long history, where such systems are by-and-large localized practices in geographical pockets throughout the country. The traditional fishing rights and community-based management systems are based on ‘restriction,’ which is closely parallel with the modern management concepts of closed areas and seasons. Like other such traditional systems practiced worldwide, the community-based management and co-management systems promoted in Indonesia have adapted to the change over time (Pomeroy, 1995).

Several countries, particularly the AMSs have adopted these common approaches by applying combinations of many approaches, which have also been merged with other management approaches, such as the Ecosystem Approach (EA), Integrated Coastal Management (ICM), and Rights-based Management, and adapted in their respective countries for more effective and efficient results.

**Promotion of co-management and community-based management at the regional level**

At the regional level, SEAFDEC/TD promoted these approaches and especially in the Southeast Asian countries during the past decade through its HRD program, training, and workshops, with particular emphasis on the co-management (CM) and community-based management (CBM) approaches through its Project “Promotion of Rights-based Fisheries and Co-management towards Institutional Building and Participatory Mechanism for Coastal Fisheries Management” and the Project “Enhancing the Compilation and Utilization of Fishery Statistics and Information for Sustainable Development and Management of Fisheries in Southeast Asian Region: Facilitating fisheries activity information gathering through introduction of Community-based Resources Management/Co-management”.

Implemented through regional and national workshops including on-site training of trainers (TOT), SEAFDEC/TD utilized the CM, CBM, and Right-based Management in carrying out capacity building activities of relevant officers in the SEAFDEC Member Countries (e.g., Cambodia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, and Viet Nam) during 2012 - 2016) as shown in Box 2.

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<th>Box 2: SEAFDEC activities in promoting co-management and community-based management in the SEAFDEC Member Countries</th>
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<td><strong>1999</strong>: The concepts of co-management, community-based fisheries management, and rights-based management were launched in Bang Saphan Bay, Prachuap Khiri Khan Province, Thailand as pilot project site</td>
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| **2005**: SEAFDEC cooperated with the ASEAN and the Coastal Habitats and Resources Management (CHARM) Project to publish “Regional Guidelines for Co-management Using Group user Rights for
Small-scale Fisheries in Southeast Asia

2008-2012: SEAFDEC/TD implemented the Project “Promotion of Rights-based Fisheries and Co-management towards Institutional Building and Participatory Mechanism for Coastal Fisheries Management,” and organized the Regional Workshop on Co-management and Rights-based Management in Thailand in 2012 attended by representatives from the SEAFDEC Member Countries.

2013: The Regional Workshop on Promotion of Alternative Livelihoods Business through the Establishment of Autonomous Fisheries Community-based Resource Co-management System was organized in Thailand with the participation of representatives from the SEAFDEC Member Countries.

2014: The ASEAN Regional Workshop for Facilitating Community-Based Resource Management in Coastal and Inland Fisheries was organized in Cambodia, and the ASEAN Regional Workshop for Enhancement of National Support Officer System for Improvement of Autonomous Resources Management and Fisheries Communities was conducted in Lao PDR.

2013-2018: SEAFDEC/TD implemented the Project “Enhancing the Compilation and Utilization of Fishery Statistics and Information for Sustainable Development and Management of Fisheries in Southeast Asian Region: Facilitating fisheries activity information gathering through introduction of community-based resources management/co-management”.

Project sites for Promotion of CM and CBM

Prior to the promotion of the CM and CBM approaches, it is important to know exactly the situation and condition of the management areas, as well as the participation capability of the community people and government, especially the local officers. Therefore, TOT courses on the CM, CBM, and Rights-based management were promoted to officers from the SEAFDEC Member Countries to enable them to apply the CM and CBM concepts.

As part of such activity in 2014-2019, SEAFDEC/TD supported the Mobile On-site Training (MOT) on CM and CBM Implementation in Thailand, Lao PDR, and Cambodia. The results of such activities are shown in Box 3; while the key achievements/improvements from the application of community-based and co-management by the communities are summarized as shown in Box 4.

Box 3. Implementation of CM and CBM in pilot sites in Thailand, Lao PDR, and Cambodia

**Thailand**

- **Nam Oon Reservoir, Sakon Nakhon**
  
  A training course on CM and CBM was organized for the local fishers around Nam Oon Dam, after which several activities were carried out using CM and CBM approaches in order to address the problems of illegal fishing and the decline of fishery resources in the reservoir. Demarcation of the identified conservation zone and promotion of seasonal closures in the reservoir were undertaken with the active cooperation of the concerned community officers and fishers.

  Moreover, awareness building and declaration of the community rules, zone demarcations, management actions, and resources enhancement/conservation were enforced. Meanwhile, the enhanced participation and involvement of the local communities around Nam Oon Reservoir in the fisheries co-management, was encouraged. As a result, the fishers and local officers noted that illegal fishing had been reduced which could be because of two (2) key success factors, *i.e.*, enhanced understanding of the local people on resources conservation, and participation of fishers in the decision making regarding the management actions to be undertaken.

**Lao PDR**

- **Nam Xouang Reservoir, Vientiane Prefecture and Vientiane Province**
  
  The CM and CBM approaches were applied for improving the abundance of fishery resources as well as the livelihoods of fishers. Two (2) Fisheries Management Committees (FMC) were established, one each in Phone Hong and Naxaythong Districts in Nam Xouang Reservoir, for the effective management of the resources in the Reservoir. Several activities were subsequently carried out such as establishment of the rules and regulations, demarcation of the conservation zone, and capacity building on fish restocking and fish processing. As a result, illegal fishing had been reduced and the products from the women’s groups
had been selling well that led to improvements in the fishers’ household incomes.

- **Khammouane Province**

SEAFDEC/TD also supported the fishers in Mai Nampakan Village in Khammouane Province by facilitating the setting up of the FMC and establishment of conservation zones in Nampakan River which is the main river in the Village to be managed by the FMC. The fishers had been empowered to be able to monitor and undertake surveillance of the fishing activities in the River by themselves. Moreover, the fishers also learned about fish processing techniques and fish culture. The FMC had been promoting the consumption of fish produced from aquaculture so that fishers could minimize capture fishing operations, a good strategy to reduce the fishing pressure in the River. The women are also able to earn alternative incomes from fish processing.

**Cambodia**

- **Chong Khneas Community Fisheries in Tonle Sap Lake of Siem Reap Province**

SEAFDEC/TD selected the Chong Khneas Community Fisheries (CFi) in Tonle Sap Lake as pilot site for promoting the CBM and CM, and provided the technical support for the development of the conservation zone management plan (fisheries management, rehabilitation, and livelihood), introduction of technology on fiber glass boat construction, and promotion of eco-tourism. The Chong Khneas CFi also collaborated with the government officers to improve the internal rules, and promote awareness building, especially on the MCS system.

According to the new fishing rights, which paved the way for the promotion of fisheries co-management to Cambodia, the local communities are now participating more actively in the fisheries management of their respective areas while the involvement of government officers and other agencies has also been improved. This provides a good sign towards attaining sustainable fishery resources management.

- **Crab bank in Angkaol Village, Kep Province**

With the collaboration of the Fisheries Administration (FiA) of Cambodia, SEAFDEC/TD technically supported and assisted FiA in its efforts to undertake capacity building for the Angkaol CFi. Crab bank was promoted as means of enhancing the stocks of blue swimming crabs in the Village. The regulations for operating the crab bank including the demarcation of the conservation zone to ensure that the fishery resources are protected, were developed through the participation of the Angkaol CFi. The crab bank is operated by voluntarily giving gravid blue swimming crabs to the CFi for spawning and proper releasing of the eggs. The CFi had learned lessons from such approach and become aware of the importance of conserving the resources especially the blue swimming crabs.

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<th>Box 4. Key Achievements/Improvements in the Application of Community-based and Co-management by the Communities</th>
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<td><strong>Development of management and conservation plan</strong></td>
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<td>The development of fisheries management and conservation plan or the rules and regulations had been carried out effectively through participatory approach among the stakeholders concerned, leading to the recognition of the community management plan by the government officers and the community. Moreover, the technical support provided by the SEAFDEC/TD Project and the local government offices had increased the confidence of the fishers in developing and implementing the fisheries management plan by themselves.</td>
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<tr>
<td><strong>Improvement of stocks</strong></td>
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<td>Demarcation of the conservation area and enforcement of closed season including MCS had been effectively undertaken through the collaborative efforts between the fishers and government officers, especially in the pilot sites in Lao PDR and Thailand. As a result, the fishers could catch more fish after the project implementation. As for Cambodia, the promotion of crab bank in the pilot site had increased the awareness of local fishers on resources conservation especially the blue swimming crab, which is economically important for the country.</td>
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<td><strong>Reduction of conflicts in communities</strong></td>
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The cooperation among fishers within communities for the establishment FMCs, formulation of the community rules and regulations, and the collaborative work to address the problems together had facilitated the reduction of conflicts among the stakeholders in the communities. These had also led to reduced practice of illegal fishing by the community fishers.

Enhancement of the roles of women in fisheries (related) activities

Specifically in Lao PDR, the skills of women in fish processing and marketing have been improved. The women’s groups have been able to develop their products and find more marketing channels. As a result, the women could generate additional incomes for their households instead of depending only on the fishing activities of their respective husbands. In the pilot sites in Thailand and Lao PDR, the women also play the important role of providing advice during negotiations when problems occur.

Way Forward

The experience of SEAFDEC in the implementation of CM and CBM in the pilot sites in some ASEAN Member States indicated that such approaches could be used and adapted by the other countries in Southeast Asia. However, there are various factors of successes and failures that could be present which differ from area to area, such as the cooperation and technical inputs from governments and/or other agencies, access to microfinance services, cooperative mechanism whether functional or not, types of ownership of common properties, conflict-resolution among the various resource users, and poverty in the communities. Moreover, the establishment of fishers’ groups or community organizations is a very important factor that determines the success of the implementation of fisheries management activities in their own areas, as well as the support extended by the government and/or other agencies to such groups or organizations. It has been observed that communities where leaders of groups are strong and powerful are able to bring about more effective fishery management.

It is therefore important to consider learning lessons from the factors that led to successes and failures for better fishery resources management in the future. Furthermore, the COVID-19 pandemic has impacted on the promotion of sustainable fisheries management in the region. It would be crucial therefore for fisheries managers to think about the adaptation measures for the promotion of the fisheries management action plans, which should be in line with mitigating the impacts of the COVID-19 situation on the sustainability of fisheries in the Southeast Asian region.

References:


Yamao M. and Suanrattanachai P. Background and Project Proposal of Locally Based Coastal Resources Management in Pathew District, Chumphorn Province (LBCRM-PD). TD/RES/55. 2002