

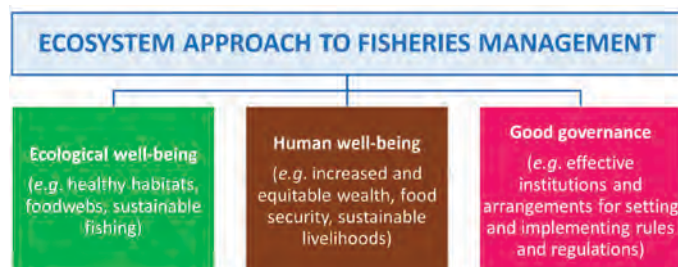
# Continued Promotion of the EAFM Concept in Southeast Asia: Case in Myanmar

Supin Wongbusarakum, Myat Khine Mar, and Panitnard Weerawat

The FAO Code of Conduct for Responsible Fisheries (CCRF) indicates that “the purpose of the ecosystem approach to fisheries is to plan, develop, and manage fisheries in a manner that addresses the multiple needs and desires of societies without jeopardizing the options for future generations to benefit from the full range of goods and services provided by marine ecosystems.” The CCRF sets the principles and international standards of behavior and practices to ensure effective conservation, management, and development of living aquatic resources, with due respect for the ecosystem and biodiversity. These include the ecosystem approach to fisheries management (EAFM) that focuses on the relationship between fishing activities and the ecosystem as a whole, including the socioeconomic implications as well as management requirements. EAFM encompasses the management of target species as well as non-target species, endangered species, aquatic waste and pollution, biodiversity, and welfare of coastal communities, small-scale fisheries, and subsistence fishers.

SEAFDEC has been promoting the EAFM concept in the Southeast Asian region in line with the priority actions stipulated in the ASEAN-SEAFDEC Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2020. More particularly, with support from the Japanese Trust Fund (JTF), the SEAFDEC Training Department (SEAFDEC/TD) implemented the project “Human Resource Development for Sustainable Fisheries” in 2013–2019, under which the concept of an EAFM has been promoted in pilot sites in the ASEAN Member States (AMSs), namely: Cambodia, Lao PDR, Myanmar, and Thailand. In this article, the lessons learned from the pilot site in Myanmar are summarized including the impacts of the adoption of the EAFM concept in the country.

The EAFM concept strives to balance diverse societal objectives, by considering the knowledge and uncertainties about biotic and human components of ecosystems and their interactions, and applying an integrated approach to fisheries within meaningful boundaries (FAO, 1995). It is a practical, participatory way to manage fisheries by continually striving to achieve a balance between ecological well-being and human well-being through good governance.



EAFM is a platform that promotes the concept of planning, developing, and managing fisheries in a manner that addresses the multiple needs and desires of diverse stakeholders and the broader societies, without jeopardizing the options for future generations to benefit from the full range of goods and services provided by the marine ecosystems (Garcia *et al.*, 2003; FAO, 2003; FAO, 2012; Heenan *et al.*, 2015).

## SEAFDEC EAFM Pilot Sites in Southeast Asia

Under the JTF-funded project “Human Resource Development for Sustainable Fisheries” (2013–2019), the EAFM concept had been piloted in selected sites in Cambodia, Lao PDR, Myanmar, and Thailand. The lessons learned from the pilot site in Thailand (Weerawat & Worranut, 2019) as well as those in Cambodia (Panitnard *et al.*, 2020) had been compiled and analyzed to serve as input for the activity at the pilot site in Myanmar.

The EAFM pilot site of SEAFDEC in Myanmar was at the Aung Kan Thar Village in Thahton Township, Mon State (Figure 1). The results of the survey conducted in 2017 showed that there were 168 households or 1,032 villagers, all of whom were small-scale fishers and some run a grocery shop at home for daily income. Moreover, the people in the village also produced fish and shrimp paste. The estimated monthly income of the fishers in the Aung Kan Thar village was approximately USD 100.



Figure 1. EAFM pilot site in Myanmar: Aung Kan Thar Village, Thahton Township, Mon State

The common fishing gears used for fishing to catch the target species, *i.e.* flathead grey mullet (*Mugil cephalus*), barramundi or Asian sea bass (*Lates calcarifer*), brushtooth lizardfish (*Saurida undosquamis*), river catfish (*Mystus cavasius*), croaker (*Otolithes* sp.), Indian threadfin (*Polynemus indicus*), and mangrove crab (*Scylla serrata*), include hook and line, small cast nets, eel traps, surrounding nets, gill nets, drift nets, and crab traps. The village has nine traders who provide loans to fishers at a high-interest rate of 20 %, including three who trade mangrove crabs and six who trade fish and other marine harvests.

The pilot site was chosen considering the several issues and concerns, especially in terms of the ecological aspect, as the fishery resources had been declining due to overfishing. Moreover, in the human well-being aspect, the fishers earn low income not only because of the decreasing fish catch, but also due to the low market price, while the technical know-how of the fishers when it comes to adding value to fish and fishery products, was found to be limited. In the governance aspect, enforcement of fisheries regulations was seen as weak and ineffective, especially that the awareness among fishers of the fisheries regulations has been insufficient, and there was also weak collaboration among the fisheries stakeholders.

## Promotion of the EAFM Concept

In order to address the aforementioned issues and concerns, the EAFM concept was introduced to the pilot site through the conduct of a training course on EAFM organized by SEAFDEC/TD in 2015. This led to the establishment of the EAFM core team to facilitate the development of the Fisheries Management Plan. Specifically, the major activities on the promotion of the EAFM concept in Myanmar are shown in the **Box**.

## Accomplishments

### Establishment of the fisheries management area

The fisheries management area was established to: 1) ensure food security, food safety, and sustainable development of the fisheries sector by conserving the fishery resources following the fisheries laws; 2) increase the level of compliance with fisheries laws, and at the same time amend the rules and regulations to align with international provisions; and 3) support the establishment of an accurate operational framework for systematically improving and implementing fisheries co-management and ecosystem approaches to



Figure 2. Key stakeholders workshop in April 2017

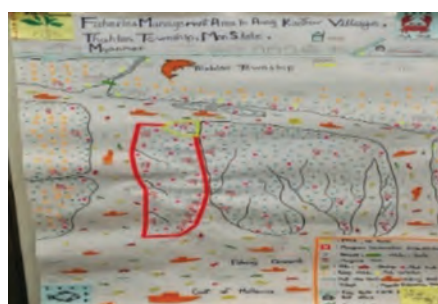


Figure 3. Map of fisheries management area established by key stakeholders

#### Box. Major activities on promoting the EAFM concept in Myanmar

December 2015: E-EAFM training was conducted in Yangon, Myanmar to introduce the EAFM concept, from which the participants had acquired the skills and knowledge to develop, implement, and monitor an EAFM Plan
June–July 2016: National EAFM Training of Trainers (ToT) was conducted in Nay Pyi Taw, Myanmar to build a pool of EAFM trainers in Myanmar
December 2016: Inception meeting was organized in Myanmar to strengthen the knowledge and skills of key national officers in all aspects of sustainable fisheries development with a focus on human well-being ( <i>i.e.</i> improving income through value-adding of catch adopting applicable and suitable methods)
April 2017: Workshop “Key Stakeholders’ Engagement and Investigation of the Current Situation which Leads to Low Income of the Fishers” was conducted to identify the issues that impede the improvement of fishers’ income by adding value to their catch (Figure 2), and subsequently, Aung Kan Thar Village was selected as the pilot site of the Project (Figure 3)
July 2017: Survey was conducted in Aung Kan Thar Village (Figure 4) to identify the appropriate activities that could increase the income of the fishing community and enhance the habitats, after which it was decided that the activities should focus on mangrove crabs and plantation of mangroves
November 2017: Workshop was conducted to develop the EAFM plan focusing on increasing the income of the fishing community (Figure 5), followed by a study visit to observe the relevant activities in Surat Thani, Thailand, especially those related to mangrove crab fisheries, <i>e.g.</i> using responsible traps, fattening, fish and seafood processing and production, packaging and marketing, among others
May 2017: Workshop was held to revisit the existing fisheries management plan, which was finalized by the Department of Fisheries (DOF), Myanmar, while mangrove plantation was started at the pilot site
September 2017: Follow-up activities were carried out to support the finalized fisheries management plan at the pilot site including the field survey at the mangrove crab conservation zone in the mangrove plantation area of the pilot site



Figure 4. Field survey of the mangrove crab conservation zone and mangrove plantation area



Figure 5. Workshop in November 2017 to develop the EAFM Plan

fisheries management. When the EAFM concept was promoted in the pilot site, mangrove plantation was initiated by the fishers with support from SEAFDEC. Mangrove conservation has been considered an important tool to enhance fishery resources and support both the fishers and ecosystems.

Mangrove forest is critical for sustainable and enriched fishery resources in Aung Kan Thar Village. For successful mangrove restoration, sea level, salinity, and suitable mangrove species were considered. Approximately 50 acres of the 500-acre mangrove forest area was designated by the DOF Myanmar for mangrove forest and crab conservation. The DOF staff, members of the Fisheries Community Group, and villagers



Mangrove farm at Aung Kan Thar Village supported by SEAFDEC and mangrove planting activity spearheaded by the Prime Minister of Mon State

planted 1,200 mangrove seedlings per acre. The planted mangrove species include *Avicennia alba*, *A. officinalis*, and *Rhizophora mucronata*. The mangrove trees of the replantation activity, had 90 % survival rate of the seedlings.

### Engagement of women in building supplementary livelihoods

The EAFM concept has contributed to improving gender equality and building the capacity of women in the pilot site. In 2018, the women's group was established as means of promoting supplementary livelihoods in the area (Figure 6). With 71 members, seven of whom were core women leaders, the women had undergone skills training for value-added products, especially producing fish crackers and dried fish from mullets and brushtooth lizardfish. The women also learned to process and package chili paste, dried shrimp, tamarind paste, and tomato paste with quality ingredients. SEAFDEC supported the installation of fish drying racks (Figure 7) and trained the women on fish processing including high-quality value-added products and hygienic packaging that would be attractive to consumers.

Moreover, the technical assistance from the DOF of Myanmar had led the Project to become successful in supporting sustainable fisheries development and livelihood opportunities. Since then, the incomes of fishers have improved and fishers have become more aware of responsible fisheries management concepts.

### Improved governance

The EAFM Core Team in Myanmar was strengthened to enable them to apply the EAFM concept in the pilot site. Also, the Fisheries Community Group was established at Aung Kan Thar Village with 120 members including the core members of four women and 48 men. The Mon State Fisheries Committee, which is composed of the DOF fishery officers, government staff, Fisheries Community Group leaders, and officers from relevant departments, had set the fisheries rules and regulations.

The fisheries rules and regulations include the prohibition of fishing gear with a mesh size smaller than 2.54 cm and restriction of the use of surrounding nets. As a result, IUU fishing incidents dropped to three cases in 2017 and became rare in 2018. Furthermore, awareness has been raised among the members of the Fisheries Community Group as well as traders, villagers, fishers, and other relevant stakeholders about the importance of sustainable resources, and the local people have become better informed about fisheries regulations. The DOF Myanmar and officers from relevant ministries started to cooperate with the fisheries committee to monitor and control illegal fishing, and it was agreed that monitoring would take place once a month by official inspection boat and 20 times a month by local fishers. Meanwhile, the EAFM Handbook was



Figure 6. Women's group at Aung Kan Thar Village

translated into the Myanmar language and disseminated to all stakeholders for increased understanding of the stakeholders of the EAFM concept.

## Way Forward

Myanmar had adopted the new version of Essential EAFM (E-EAFM) course materials for the Southeast Asian region. These materials would be useful for both fisheries managers and extension officers in their continued efforts of conducting EAFM activities in the coastal areas of the country. After the implementation of the Project at the pilot site in Myanmar, SEAFDEC had sustained the conduct of EAFM training courses throughout the country until 2019.

The five-year project “Small-scale Fisheries Management for Better Livelihood and Fisheries Resources” of SEAFDEC/TD which commenced in 2020 and supported by JTF, includes an expansion of the EAFM concept to other areas through



Figure 7. Fish drying rack constructed in Aung Kan Thar Village with support from SEAFDEC



EAFM Core Team in Myanmar

building and strengthening human resources and further promoting the EAFM concept among the fisheries officers of SEAFDEC Member Countries. This Project has therefore been used to support another EAFM pilot site in Kawthaung, Tanintharyi Region, Myanmar where the EAFM plan would be developed considering the apparent issues that also occur in the area.

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