

Strengthening the Capacity of Local Communities for Fostering Community-based Resources Management/Co-management: a case study in Khammouane Province, Lao PDR

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In the Southeast Asian region, it has been recognized that fishery statistics in coastal and inland fisheries are under-reported due to the multi-species nature of the fisheries and the large number of small-scale fishers. In order to address such concern, the ASEAN-SEAFDEC Resolution and Plan of Action on Sustainable Fisheries for Food Security Towards 2020 “Fish for the People 2020: Adaptation to a Change Environment,” which was adopted in 2011, includes provisions encouraging the ASEAN Member States (AMSs) and SEAFDEC to: (Resolution No. 11) *Enhance the awareness of the contribution that inland fisheries makes to food security and sustainable livelihoods, and include consideration of fisheries stakeholders when undertaking development projects that may impact inland fisheries;* (Plan of Action No. 11) *Adopt co-management at all levels and with all relevant stakeholders in the process of planning and policy formulation for management, conservation and rehabilitation of habitats and protective geographical features, as well as policy formulation on the use and management of natural and human resources to ensure that climate change responses are integrated into fisheries policy frameworks;* (Plan of Action No. 13) *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. Taking

into consideration such provisions, the SEAFDEC Training Department (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” in 2013-2019 with funding support from the Japanese Trust Fund. The Project was meant to: improve the compilation of fisheries and socio-economic information on small-scale coastal and inland fisheries in the Southeast Asia; support the AMSs in applying CBRM/Co-management; and facilitate better understanding and enhance the knowledge of stakeholders on the condition of small-scale coastal and inland fisheries at national and local levels. Several activities were therefore implemented at pilot sites in selected AMSs, e.g. Lao PDR where training courses on CBRM/Co-management were conducted in the northern, central, and southern part of the country in order to support the fishery officers of the Department of Livestock and Fisheries (DLF). In this article, the activities in an inland fishing community as one of the Project’s pilot sites, which is in Mai Nam Pakan Village in Hinboun District, Khammouane Province, Lao PDR, is discussed, especially on how the enhanced capacity of local people in managing the fishery resources has improved their incomes through the adoption of alternative livelihoods.

The inland waters in Lao PDR cover an area of more than 1.2 million ha and categorized into: 1) Mekong River and main tributaries and five north-eastern rivers; 2) large reservoirs or hydropower plants; 3) shallow lakes, natural pools, peat swamps, and wetlands; 4) irrigation reservoirs and irrigation weirs; and 5) rice-fields, small streams, and floodplains. These inland water ecosystems serve as capture fisheries resource for the people in local communities who consume fishery products as source of animal protein (Singkham, 2013).

Mai Nam Pakan Village in Hinboun District of Khammouane Province (Figure 1), as one of the Project’s pilot sites, is located along the Nam Pakan River (Figure 2) which directly discharges into the Mekong River and inhabited by many important aquatic species. The village was established in 1992 and currently has a population of 435 people (234 females and 201 males) including 93 families who are mainly engaged in inland fisheries and agriculture. Baseline information were collected in the pilot site in December 2016 to gain better understanding of the condition and identify the main problems and needs of Mai Nam Pakan Village for the development of



Figure 1. Mai Nam Pakan Village in Hinboun District, Khammouane Province, Lao PDR

Source: Google maps



Figure 2. Nam Pakan River, Khammouane Province, Lao PDR

the appropriate activities and work plan that are suitable to the local conditions. One of the findings from the information compiled is that most of the local people had low income while alternative livelihoods to augment such income had been very limited.

Establishment of the Fisheries Management Committee

In the Fisheries Law of Lao PDR, Fisheries Management Committee (FMC) serve as local fisheries management organization at the community level with corresponding roles and responsibilities established for specific water bodies such as rivers, reservoirs, community ponds, and wetlands. FMC indicates the need to enhance the participation of fishers to



Figure 3. Fisheries Management Committee of Mai Nam Pakan Village (*top*) and Security and Patrolling Unit (*bottom*)

Box. Steps and processes in the establishment of Fisheries Management Committee (FMC) in accordance with the Fisheries Law of Lao PDR

1. Consultation meeting involving the local people and situation analysis on the roles, responsibilities, and benefits of FMC including the establishment of the fishery conservation zone (FCZ)
2. Election of Committee members assigned to three units: A) guidance and advice; B) regulation, control, and mediation; and C) security and patrolling
3. Drafting of the regulation and FCZ demarcation/mapping
4. Submission of the draft regulation and FCZ demarcation/mapping to District Office for approval
5. Public announcement of FMC establishment to all stakeholders through meetings and consultations (Figure 3)

ensure that effective management of the fishery resources is promoted with the involvement of government authorities. The FMC in Mai Nam Pakan Village was therefore established taking into consideration the prescribed steps and processes (Box).

Fisheries Conservation Zone

The fisheries conservation zone (FCZ), established concurrently with the FMC, is located at the Nam Pakan River with an area of about 50,000 m² and length of around 1,000 m. Sign board (Figure 4) which indicates the regulation, prohibited fishing gears, penalty for illegal fishing, and map was installed at the Nam Pakan River as well as the marking signs that indicate the demarcation area of the FCZ. The FMC implemented surveillance activities by establishing the Security and Patrolling Unit consisting of four groups with 5-6 members in each group to monitor the illegal fishing activities in the FCZ, on rotational basis within 24 hours. The Project provided the equipment needed by the Security and Patrolling Unit such as boat with engine, binoculars, life jacket, camera, and torch.



Figure 4. The sign board for the fisheries conservation zone in Nam Pakan River

Fish releasing

The FMC members of Mai Nam Pakan Village, in collaboration with SEAFDEC, organized the fish releasing activity during the National Fish Releasing Day on 13 July 2018 to build the awareness of the community members on the need to conserve the fishery resources. The activity was attended by government officers, community members, fishers from neighboring villages, and students. Around 10,000 fingerlings of silver barb (*Barbonymus gonionotus*) were released into the FCZ in Nam Pakan River (**Figure 5**).



Figure 5. Fish releasing activity at the fisheries conservation zone in Nam Pakan River

Study tour for FMC members

Study tour was organized to strengthen the capacity of the FMC members of Mai Nam Pakan Village on the management of the FCZ (**Figure 6**). They visited Bolikhamsai Province to discuss fisheries management in FCZ with the FMC members of the Ban Don Xay Village and observe the FCZ in Pak Ka Ding River. The members of both FMCs shared and exchanged their knowledge and experiences on the management of FCZ. In addition, the FMC members of Nam Pakan Village also visited Nam Lo Village to observe the fish processing activities including the production of fermented fish, dried fish, and smoked fish.



Figure 6. Study tour of Fisheries Management Committee of Mai Nam Pakan Village in Bolikhamsai Province

Statistical, market, and fish species surveys

Statistical surveys were conducted to collect the data on fisheries catch from Nam Pakan River and to understand the status of the fishery resources in the River. The survey team, comprising the provincial and district fisheries officers and FMC members, interviewed the full-time and part-time fishers in 2017-2019. Fish market surveys were also conducted to understand the current fish marketing system and trend of fish prices in Khammouane Province. The provincial and district fisheries officers collected the data by interviewing the retail sellers of fresh fish and processed products in markets in Hinboon District and Thakhaek District, Khammouane Province in 2017-2019. Analysis of the data collected from both surveys is still ongoing.

In addition, survey on commercial fish species was conducted to identify the fish species caught from Nam Pakan River (**Figure 7**). The data which were collected from the local fish market near the village indicated that there are 49 fish species belonging to 15 families found in the River. The most diverse species belongs to the Family Cyprinidae (carps) with 22 species followed by the Family Bagridae (catfishes) with 9 species (Pattarapongpan, 2018).



Figure 7. Identification of commercial fish species at local fish market in Mai Nam Pakan Village

Promotion of fish processing techniques

In promoting alternative livelihoods to generate additional income for fishers, the FMC of Mai Nam Pakan Village established the women's fish processing group (**Figure 8**) in July 2018. The study tour for the group which was supported by the Project, took the women's fish processing group to Nakhon Phanom Province in Thailand to visit the Chaiburi women's group to learn various fish processing techniques. In return, representatives from the Chaiburi women's group were invited to Mai Nam Pakan Village to serve as resource persons for the training course on fish processing organized later. The training course covered lectures on the safe use of processing equipment (meat grinder machine and mix machine), raw materials, packaging, and group management (allocation of profit and recording of detailed information on the accounting logbook). The women's fish processing group started fish



Figure 8. Women's fish processing group established by the Fisheries Management Committee of Mai Nam Pakan Village

processing in December 2018 but encountered problems on teamwork and recording because of lack of experience, so the local fisheries officers and head of the village provided interventions and advice as well as assistance in the detailed recording of the operating costs and expenses, as well as income in the accounting book. The group had produced various products (e.g. dried fish, fish sauce, fermented fish in rice bran) sold in nearby markets. The group agreed to allocate their profit to FMC, group funds, and group members.

Promotion of aquaculture techniques

The FMC of Mai Nam Pakan Village established the men's aquaculture group (Figure 9) in July 2018. The training course on fish aquaculture technique was organized in May 2019 attended by the men's aquaculture group and community



Figure 9. Men's aquaculture group established by the Fisheries Management Committee of Mai Nam Pakan Village (above) and concrete ponds for catfish culture (right)

members. The resource person was from the Nam Xouang Aquaculture Center, Vientiane, Lao PDR who lectured on catfish culture including culture system, types of culture, fish feed, pond cleaning, and marketing. Moreover, culture of other species such as silver barb, Indian carp, common carp, as well as frogs was also introduced during the training. In November 2019, four cement ponds were constructed at the community center, with about 1,000 catfish fingerlings cultured in each pond. The group members share the responsibilities in feeding and cleaning the pond and agreed to allocate their profit to FMC, group fund, and group members.

Way Forward

In order to promote the CBRM/Co-management concept in fisheries, the AMSs could apply the lessons learned from Mai Nam Pakan Village. For future CBRM/Co-management projects, the ecosystem approach to fisheries management (EAFM) and gender concepts would be integrated. Furthermore, SEAFDEC would emphasize on the importance of CBRM/Co-management in the development of regional fisheries policy frameworks, e.g. RES&POA 2030.

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