

SEAFDEC through its Training Department has initiated the Integrated Coastal Resources Management project in Thailand, Malaysia and Cambodia under the auspices of the Japanese Trust Fund Program following the collaborative project operational mode. The community-based fishery resources management model with an integrated approach to encompass total community development in the SEAFDEC Member Countries served as the guiding principle in the implementation of the project. The lessons learned and experiences gained from the project in these three countries are being shared with the other ASEAN countries through the SEAFDEC training and information dissemination mechanism.

Fostering the Integrated Coastal Resources Management Approach in Southeast Asia

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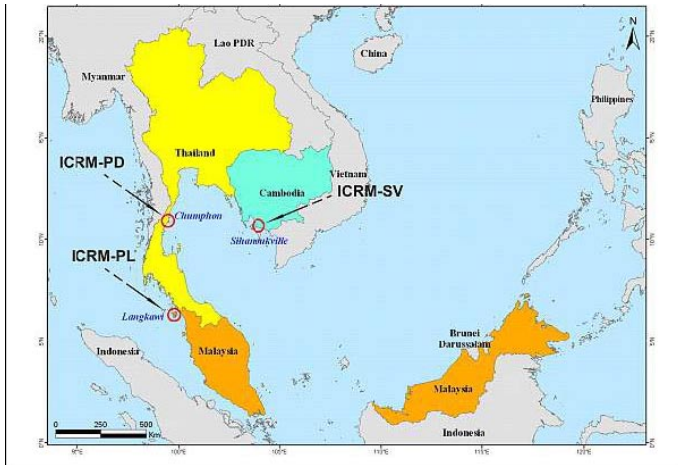
The deterioration of livelihood in coastal fishing communities resulting from the over-exploitation of fishery resources and degradation of the coastal environments has been a pivotal issue among fisheries policy makers in the Southeast Asian countries since the late 1990s. Discussions have therefore been centered on this theme in order to seek for applicable measures to improve and overcome the situation.

SEAFDEC has implemented the regionalization of the Code of Conduct for Responsible Fisheries (CCRF) and came up with regional guidelines on four major aspects, namely: responsible fishing operations, aquaculture development, fisheries post-harvest, and fisheries management. In another scenario, under the ASEAN-SEAFDEC Fisheries Consultative Group (FCG) collaborative mechanism, Thailand has been designated the ASEAN Lead Country and the SEAFDEC Training Department (TD) as the Lead Department for the implementation of FCG activities related to fisheries management. Thus, in accordance with the efforts of SEAFDEC to promote the adoption in the ASEAN region of the Regional Guidelines for Responsible Fisheries in Southeast Asia: Responsible Fisheries Management, TD collaborated with the Department of Fisheries (DOF) of Thailand for the implementation of an integrated coastal resource management pilot project in Thailand.

The Integrated Coastal Resources Management Project

Guided by the framework of the comprehensive development project of the Thai Royal Project Council and the community-based fishery resources management (CBRM) concept, the project on “Integrated Coastal Resources Management in Pathew District, Thailand (ICRM-PD)” was implemented in Pathew District, Chumphon Province. The successful implementation of the project in Thailand has been replicated in Malaysia and Cambodia, while the knowledge learned and experiences gained from the project implementation have been disseminated to the other ASEAN countries.

Following the CBRM concept and adopting it in the ASEAN setting, the Integrated Coastal Resources Management (ICRM) was implemented as pilot project by SEAFDEC/TD in Thailand, Malaysia, and Cambodia, from 2001 to 2008. The main objectives



Adoption of the CBRM approach is promoted for the sustainable development of the coastal resources. The approach to be adopted, which could differ from place to place based on the outcomes of the baseline surveys, would then depend on the socio-economic level, the surroundings and the resources available in the communities. Encouraging the local people to participate in community development activities would increase their awareness of the benefits that can be derived from their involvement in the CBRM activities, and more particularly, inculcating in them that their maximized voluntary participation in the protection and conservation of the resources would improve their livelihoods.

of the ICRM project are to: (1) establish sustainable coastal resources management at the local level; (2) rehabilitate the coastal fishery resources; and (3) alleviate poverty in coastal fishing communities. Specifically under the ICRM approach, developing the capacity of local human resource will empower the local people in community development enabling them to manage the coastal resources and sustain development efforts, while the systematic voluntary participation by the local people in a local body will proactively strengthen community development and resource management. Moreover, the people's participation in creating job opportunities and in establishing local businesses will increase their source of accessible income thus, alleviating poverty and developing the economic base of the community.

Establishment of a community organization by the local people is another core activity promoted by the ICRM project, as the organization would be responsible in managing the project activities when the assistance of the agencies involved in the initial and organizational phase of the collaborative project is phased out. It is in this aspect that HRD is necessary to prepare the capacity of the local people in the management of the resources. Training the local people including the local authorities and community representatives in the management of the project activities will provide them a sense of ownership of the project enhancing collective efforts in striving for the sustainability of the activities and ensuring continued protection and conservation of the resources. HRD, which should be a continuing process in the fishing communities, comes not only in the form of training courses, workshops, seminars or study tours but also in the form of continuous hands-on practice in the everyday operations of the project.

Based on the CBRM concept, and in order to achieve the project objectives, various activities are conducted under the ICRM project, such as monitoring surveys and data collection; adoption of the CBRM concept in the fishing communities; development of local business ventures; continuing HRD and improvement of fishing and fish handling technologies; and resource conservation and enhancement.

The implementation of the ICRM pilot projects starts with profiling of the project area through the conduct of baseline and monitoring surveys. This is aimed at monitoring the coastal fisheries dynamics as well as the socio-economic aspects of the target communities. Surveys are conducted to identify the needs and problems in concerned fishing communities, assess the environmental conditions of the fishing communities, identify employment opportunities for the local people, determine how the local people would utilize locally available resources, and identify the capacity building needs of the local people particularly in terms of research, training and extension. In the course of the project implementation, results of the surveys are presented to the stakeholders through local seminars and fishers' workshops to keep them abreast of the updated information.

Why do we need an integrated approach?

In the orthodox or conventional project execution, single oriented approach was usually applied. However, lessons were learned through field activities that various components are compounded in the development needs of the targeted societies so that a multi-faceted approach would produce more effective and tangible outputs. Sometimes, these factors are essentially inter-linked with each other, such as the case of the CBRM approach. Actions on awareness building on CBRM have been conducted predominantly through human resource development (HRD) activities like training, fishers' workshop, etc. However, if a society lives below the subsistence level, no one would care about the sustainable management of fishery resources for the future because their main focus is today and the immediate tomorrow. They can not afford to think of matters in the future. In the Southeast Asian region, although some fishing communities have already attained certain degrees of development over this level still there are some that live beyond. In such cases, an integrated approach combined with total community development aiming at poverty alleviation is considered more effective and practical.

Box 1. Timeframe of the ICRM Project Implementation										
No.	Component	2001	2002	2003	2004	2005	2006	2007	2008	
1	Thailand (ICRM-PD)	←-----→								
2	Malaysia (ICRM-PL)			←-----→						
3	Cambodia (ICRM-SV)					←-----→				

Another approach being promoted under the ICRM project is the development of alternative livelihoods by the local people that would provide them additional and accessible sources of income. In the pilot project sites, the local people have been encouraged to identify alternative livelihoods and other business ventures that they are capable of implementing using locally available resources. With this approach, the local people also instigate cooperation among the members of the community specifically as regards the development of certain products including development of marketing channels for their products to ensure the sustainability of the income-producing activities in the community.

An equally very important aspect of ICRM is the rehabilitation and enhancement of the coastal resources. Under this approach, the local people are involved in resource enhancement activities to make them aware of responsible coastal resources management, and specifically on the need to protect the environment and conserve the natural resources of their communities. Promoting responsible and sustainable fishing and fish handling methods is also essential for the sustainability of the CBRM efforts in the fishing communities. This will help the local fishers understand the need to adopt responsible fishing operations as these would assure them of stable fish harvests and increased incomes.

Following the aforementioned approaches, the SEAFDEC ICRM project was initially implemented in Pathew District, Chumphon Province of Thailand (ICRM-PD)

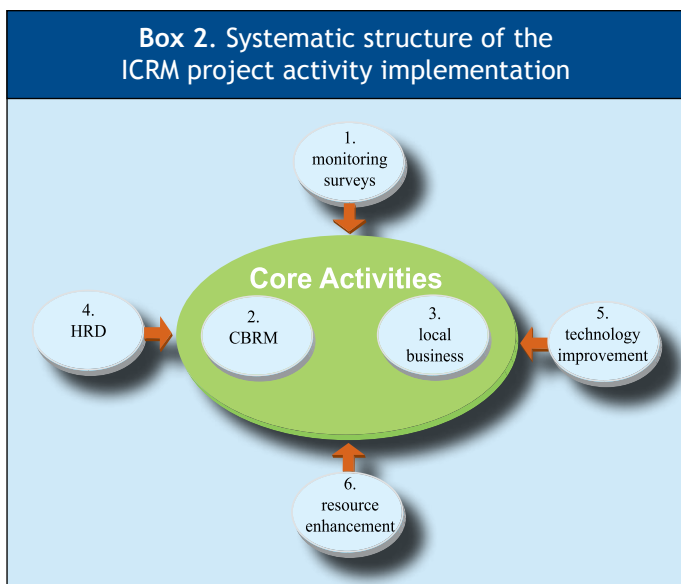
from 2001 to 2006. Then later this was replicated in Pulau Langkawi, Malaysia (ICRM-PL) from 2003 to 2007 and in Sihanoukville, Cambodia (ICRM-SV) from 2005 to 2008. The timeframe of the project implementation in the aforementioned countries is shown in **Box 1**, while the systematic implementation structure of the project activities is shown in **Box 2**.

The ICRM Project in Pathew District, Chumphon Province, Thailand

The ICRM project in Pathew District, Chumphon Province, Thailand (ICRM-PD) has served as an avenue whereby the visions of the Government of Thailand are put into action specifically its goal of poverty alleviation and sustainable development. The involvement of the local people in the project management increased their awareness of the importance of protecting the environment and managing the coastal resources that they have been exploiting. This has also encouraged the local people to take mitigating actions on the damages that are being done to the resources thereby decreasing any further damages on such resources. The project has also provided the local people certain means of alternative livelihood that helped them sustain their daily needs while optimizing the use of the resources that are available in their communities.

Towards the termination of the project, the final project evaluation was conducted by an outsourced consultant, the results of which was published and disseminated (**Box 3**) in the region. In addition, the Regional Seminar in Integrated Coastal Fisheries Management in Southeast Asia which aimed to disseminate the impacts and outcomes of the project in the Southeast Asian region, was conducted on 10–12 July 2007 in Chumphon, Thailand.

The most significant outcomes of ICRM-PD include: (1) the successful establishment by the local people of a locally-based coastal resource management body, the Pakklong Fisheries Group (PFG); (2) improvement in the people’s production and living conditions; (3) enhancement of the local people’s and organization’s capability in resource management and community development; and (4) incorporation of the practices and lessons learned from the implementation of the project in the DOF policies on coastal resource management.



Box 3. Summary of the final project evaluation of the ICRM-PD project

“The activities of this project are well planned that every aspect of the issues are resolved. Baseline survey is assessed as very good because it provides all the important details needed to identify and prioritize the issues in the area. The CBRM activities are very significant in the understanding and learning process of the local people regarding the protection and conservation of the environment and the coastal resources. The local businesses of the villagers are very significant as well because these provided them with alternative and/or additional sources of income to sustain their daily needs. More importantly, the dissemination of information materials to local people is a great way to keep them updated with and informed about recent developments and enables them to identify ways where they can participate and extend help. Lastly, the resource enhancement activities are very important in engaging the interest and participation of the local people rather than just giving them theoretical knowledge which is difficult for them to visualize and understand” (SEAFDEC, 2007).

Role of the Pakklong Fisheries Group

While the involvement of SEAFDEC in the project was phased out at the end of 2006, and the involvement of DOF and other local agencies tapering down from 2006 onwards, the Pakklong Fisheries Group (PFG) took over the responsibilities of the project starting in 2007. It was therefore very necessary to prepare the PFG and enhance its capacity for the management of the project during the phasing out process. The extent of involvement and initiatives of the cooperating agencies as exemplified in the ICRM-PD, are shown in Fig. 1.

Since the PFG has been officially registered with the provincial administrative office, it has been endowed with a legal entity as a fishermen’s cooperative with 105 members. After the termination of the involvement of SEAFDEC in the ICRM-PD project in 2006, the PCG has implemented a number of activities under the general guidance of the DOF Thailand. More specifically, the Local Enforcement Unit was established within the PFG to pursue the local MCS activities in the demarcated zone of the project area.

Adoption of the CBRM Concept by Local Fishers

In line with the basic concept of the CBRM, the demarcated zone to regulate exploitation of fishery resources in the ICRM-PD project area was publicly proclaimed in October 2002 after its approval by the Thai Cabinet. Within the demarcated zone, various fisheries management plans have therefore been implemented. The demarcation, which includes a zone for aquaculture and zone for fishing vessels sheltering during inclement weather conditions, was

proclaimed after it has been agreed upon by the relevant stakeholders through a consensus. Another zone was also proclaimed for the fishing ground of swimming crab as agreed by the crab trap fishers’ group and the crab gill-netters’ group.

Since swimming crab is a very important species harvested in the project area, the fishers became concerned about the dwindling crab catches and reduced sizes occurring year by year. To address the problem, a crab bank scheme was initiated in 2002, where under the scheme gravid crabs are deposited in cages until they spawn. Another measure taken was the introduction in 2003 of enlarged mesh size crab trap from 1.2 in to 2.5 in to reduce the incidence of catching juvenile crabs in crab trap fishing operations. Such mitigations have resulted in improved total catch and increased size of crabs caught.

In the ICRM-PD demarcated zone for aquaculture, an experiment of the culture of *Babylonia* shells was carried out to test the practical and commercial application of the culture technology. Other culture strategies have also been tried such as cage culture using natural and artificial feeds of sea bass and swimming crab. However, the results although quite feasible gave marginal or low economic returns due to the inadequate background of the local fishers on such culture technologies.

In an attempt to promote resource enhancement in the demarcated fishing zone of the ICRM-PD, artificial reefs (ARs) were installed by DOF Thailand in 2004, while Fish Enhancement Devices (FEDs) developed by TD were also installed in 2005 and 2006. However, the FEDs were removed or relocated by trawlers that continue to encroach in the project area, making it imperative to install the FEDs again in deeper areas adjacent to the existing ARs to protect them from being removed by trawler operators.

While the project also aimed to educate the children of the local fishers, fish releasing ceremonies were initiated in 2006. In the ICRM-PD project area, about 7.3 million post-larvae of shrimps, 154,000 sea bass fingerlings, 44,000

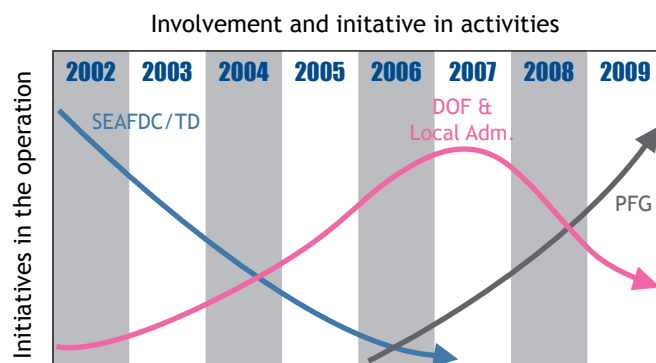


Fig. 1. Extent of the involvement and initiatives of the cooperating agencies in ICRM-PD

The Integrated Coastal Resources Management in Pulau Langkawi, Malaysia

Since the ICRM-PD project had produced tangible impacts as acknowledged by the SEAFDEC Member Countries during the 4th ASEAN-SEAFDEC FCG Meeting in March 2002, SEAFDEC decided to impart the technologies including the experience and knowledge gained, to the other Member Countries. In this regard, Pulau Langkawi, as offered by Malaysia became a pilot site for the implementation of a similar approach on a cost-sharing basis. TD subsequently set up the project on “Integrated Coastal Resources Management in Pulau Langkawi, Malaysia (ICRM-PL)” in 2003.

The activities of the ICRM project in Pulau Langkawi, Malaysia (ICRM-PL) was however, temporarily put on hold during the wake of the December 2004 Tsunami which had also affected the project area. Most fishing boats and fishing gears were destroyed or lost during the calamity including the fish landing facilities which was also completely destroyed. The project activities have been restored later in 2005 after some rehabilitation works. Since then, the project activities have been pursued by the Department of Fisheries (DOF) Malaysia after the involvement of SEAFDEC had been phased out in 2007.

The Fishery Resources Management Community

Unlike in the ICRM-PD, a core fishing group known as the Fishermen’s Economic Group or KEN, which was reorganized later into the Fishery Resources Management Community (KPSP), already existed in the project area and was responsible for the implementation of the CBRM concept under the ICRM-PL. Under the general guidance of the DOF Malaysia, the KPSP eventually took over the operations of the project area independently when the involvement of TD was terminated. At the course of the implementation of the ICRM-PL project, the fishermen expressed their views on many occasions that the volume of fish landing had evidently increased since the previous years. They attributed such increase to the effectiveness of the local enforcement activity organized by the KPSP following the CBRM concept.

One of the major accomplishments of the ICRM-PL was the drafting by the local people of the Fishery Resources Management Plan (FRMP) which was submitted to the Department of Fisheries Malaysia for approval. Although a long time and tenacious efforts were spent in building up a consensus for the demarcation of the coastal fishing zone among the stakeholders including the fishers from neighboring fishing villages and industrial fisheries, after a



juvenile and mature size swimming crabs, and 300 adult mud crabs have been released by the school children.

As one of the major activities in the adoption of the CBRM, mangrove rehabilitation was also organized by the PFG in coordination with the Ao.Bo.To. and the nearby schools. In 2006, more than 2,000 mangrove seedlings have been planted in the demarcated zone. In addition, tree planting was also carried out along the District’s roadside by the village groups.

In addition to the Royal Project Council, the DOF and the Department of Marine and Coastal Resources (DMCR) of Thailand, other local agencies and offices have also been involved in the implementation of the ICRM-PD project. These included the Chumphon Marine Development Center (CMDEC) Fisheries Technological Development Division, Chumphon Fisheries Provincial Office Enforcement Unit and Aquaculture Center, Chumphon Provincial Administration Office including the Pathew District Administration Office and the Cooperative Promotion Office, the Chumphon Marine and Coastal Resources Research Center, and the Pakklong Sub-district Administrative Organization (Ao. Bo.To).

series of repeated meetings, the draft FRMP was formulated, and the demarcated zone for the CBRM in the ICRM-PL project area was considered.

After the 2004 Tsunami and in an effort to rehabilitate the livelihood of the local fishers in the project area, a mechanical workshop was built under the auspices of the Japanese Grassroots Tsunami Fund (JGRTF). The workshop facility, which is being managed by the KPSP, has been leased out to one of its members for marine engine repair and maintenance. In addition, the Local Enforcement Unit (LEU) established mainly to coordinate the MCS functions in the project area, has succeeded in acquiring a patrol boat from the local government authorities in early 2008. The LEU has since then been strengthening their MCS functions, and their presence has led to reduced encroachment by illegal fishing boats in the project area. The KPSP has been endowed with competent leadership with fairly high morale for self-development and self-management. This is a great asset for the adoption of the CBRM concept and community development.

The successful outcome of the crab bank scheme carried out by the ICRM-PD project has challenged the KEN after their study tour to Chumphon, Thailand in April 2005. The experience they gained led to the organization of a Crab Bank sub-group under the ICRM-PL, and in order to upgrade the lessons they learned, a training course on crab bank scheme operation was conducted on site.

The women's group called the Women's Economic Group or KEW was also organized in the ICRM-PL project area. Production of seasoned/dried anchovy called "ikan bilis" was started by the KEW following the technique which they learned during their study tour to Chumphon Province, Thailand. A cottage scale processing yard was constructed for the group under the auspices of DOF Malaysia. Since the KEW has further diversified their production line to another major fish-based product called "maruku", the need to construct a new large-scale processing yard was considered.

Making funds available under the JGRTF, the new processing plant was constructed that could accommodate the production of value-added fish products by the KEW. Moreover, a user-friendly bookkeeping and accounting system was introduced to the KEW through repeated trainings in order to maintain transparency in business transaction within the group.

Results of the resource surveys have shown that the fishing ground of the ICRM-PL project area is relatively low in fishery resources because of its flat bottom. This situation

demanding the need for the installation of ARs and FADs. Thus, a number of ARs and FADs have been installed by the LKIM and DOF Malaysia, while SEAFDEC also installed FEDs in several sites but unfortunately these were removed by trawlers that have been encroaching in the demarcated coastal fishing zone. Further strengthening of the local enforcement group is therefore vital before installing another set of FEDs in the project area.

Mangrove reforestation is also one of the activities under the ICRM-PL. In December 2006, more than 1500 mangrove saplings have been planted in front of the bay of the project area in Kuala Teriang by volunteer fishers from the KEN in collaboration with the Drainage and Irrigation Department (JPS) of Pulau Langkawi. In nearby Kuala Melaka, a volunteer fisherman who has learned about the CBRM concept and more specifically the importance of mangrove reforestation planted 2100 mangrove seedlings in March 2007. The promotion of coastal resource conservation and enhancement under the ICRM-PL has primarily motivated a series of movements on mangrove reforestation in Kuala Teriang and nearby villages.

The ICRM-PL has availed of the assistance from agencies in the Kedah State and the Central Government by promoting a harmonized working coordination among local and national components including the Lembaga Kamajuan Ikan (LKIM) or the Fisheries Development Authority of Malaysia, Kedah State Fisheries Office, District Fisheries Office in Langkawi, the Langkawi Development Authority (LADA), Fish Technology Institute of Malaysia (IPM) in Terengganu, Fisheries Research Institute (FRI) in Penang, Fishermen Association in Langkawi, Village Level Security Committee (JKKK) of Kuala Teriang, etc.

The Integrated Coastal Resources Management in Sihanoukville, Cambodia

In the wake of the implementation of the pilot ICRM projects in Thailand and Malaysia, a third ICRM project was initiated in Cambodia (ICRM-SV) in collaboration with its Fisheries Administration (FiA) in 2005, taking into account the geographical advantage and the prioritized need of a CBRM approach in the country. The project site is located in Prey Nup II in Sihanoukville comprising four major villages, where a core body to implement the CBRM concept has been established prior to the implementation of the project. Cambodia is the only country in Southeast Asia where a fishery-resources co-management regime is legitimately established. The Royal Decree on Establishment of Community Fisheries and the Sub-Decree on Community Fisheries Management were promulgated in May 2005 and June 2005, respectively.

Foreseeing termination of the involvement of SEAFDEC in the project operation towards the end of 2008, a step-by-step phasing out process of the project operation has been promoted to ensure a smooth handing-over of the project to the FiA. However, TD will continue to take part in the project activities in its capacity as observer and to provide technical inputs in the project activities specifically during the evaluation of the impacts and outcomes of the project which will be undertaken by an outsourced consultant.

Among the major achievements of the ICRM-SV is the preparation by the local people of the Community Fisheries Area Management Plan (CFAMP). Developed by the local fishers group, the CFAMP and other related documents such as Internal Law (I/L), By-Laws (B/L) and the Community Fisheries Zoning Map (CFZM) were endorsed by the local administration offices and sent to the Governor of Sihanoukville together with the Community Fishing Area Agreement (CFAA) for approval. The approved Guidelines for the Community Fisheries govern the implementation of the CBRM concept in Sihanoukville, Cambodia under the ICRM-SV project.

The Community Fisheries in Prey Nup II

After the organization of the Community Fisheries (CF) in 2002, the Local Enforcement Unit (LEU) was established with voluntary participation of the CF members and has been in-charge of patrolling the coastal area for illegal fishing operations. In 2005, the FiA provided patrol boats with engine to the LEU and with support of the ICRM-SV project, the voluntary activity of patrolling the project area by the LEU has led to increased number of arrests on various charges such as use of illegal fishing gear, sea turtles hunting, mangrove felling, charcoal production, and harvesting juveniles of shells and crabs. Cases of encroachment in the project area by illegal fishers and violations against fisheries regulations have been evidently reduced.

Within the CBRM concept, the ICRM-SV will also establish fish refugia in the project operational area. The preliminary survey conducted to investigate the social and practical impacts of fish refugia recommended the establishment of two fish refugia, one for blood cockle and another for sea grass in Khos Angkor and Khos Krous, respectively. The establishment of fish refugia under the ICRM-SV would support a regional movement being promoted in Southeast Asia where several fish refugias would be established in the coastal zones from Cambodia to Vietnam.

Immediately after the commencement of the project, the women's groups were organized under the framework of the Community Fisheries Prey Nup II. As one of the feasible lucrative cottage-scale business ventures, mushroom

production was proposed to be carried out by the women's groups. The result of a feasibility study conducted by the project staff indicated that mushroom culture could be implemented considering the practical and economic points of view including its marketing aspects. With technical assistance from a former JICA-funded project, a training course in production of oyster mushroom following the Japanese mushroom production technology was conducted under the ICRM-SV at the Vocational Training Center in Battambang with 20 participants.

After returning to their villages, the women's groups carried out the construction of necessary facilities and equipment by themselves. Production of mushrooms has been successfully continued and it has been turned perfectly into a commercialized venture. It is commendable that all groups have put the venture on commercial basis within the period of one year. Upon the initiation of the mushroom production, an intensive training course in simple bookkeeping and accounting system was conducted for all members of the mushroom production group to promote transparency in their transactions.

In a related development, the ICRM-SV project negotiated with the Embassy of Japan (EOJ) in Phnom Penh, Cambodia for possible collaboration in the project's mud crab fattening activity. As a result, EOJ agreed to provide funds for the construction of the culture ponds and for the procurement of necessary equipment for mud crab fattening through the Japanese Grassroots Fund. The Mud Crab Culture Group was formed and the first trial of mud crab fattening was conducted from February to May 2007. However, due to inadequate background on mud crab culture techniques, the result gave negative net profits. Considering the lessons learned from the first experiment, which failed because of very high temperature and salinity in the culture area, the second experiment commenced in November 2007 after deepening the culture ponds to attain lower temperature. In the second trial, a JICA expert stationed in Phnom Penh has been tapped to provide technical supervision. So far, the progress has indicated some promising results. Commercial mud crab fattening will be started as soon as convincing outcome from the experimental production is attained. Another experiment in fish culture of sea bass was also conducted in parallel with mud-crab fattening.

During the group study tour to Siem Reap Province in August 2007 participated by 10 leading fishermen from Prey Nup II Community Fisheries, a Sangkat (Commune) chief, a fisheries officer from Sihanoukville Municipality, national and TD project staff, to observe other approaches to local business development within the community fisheries, the group observed that the application of eco-tourism venture in Prey Nup II may not be very successful

since only few tourists visit the area unlike in the Siem Reap Province. In their visit to the Community Fisheries Chi Kraeng, known for organic agriculture production and small-scale aquaculture, the group considered such approach as applicable for the ICRM-SV provided that a competent extension worker would be made available to assist them in the technical aspects of an integrated agri-aqua operation.

In the project implementation, the ICRM-SV project has availed of the support and assistance from various concerned local authorities like the District (Khan) Office in Prey Nup, Sub-District (Sangkat) Office in Prey Nup II and the Fisheries Office of Sihanoukville Municipality which have been involved in the regular project operations. In addition, the Fisheries Administration of Cambodia has been in charge of the over-all administration of the project while the Embassy of Japan in Phnom Penh has extended financial support to the project through the Japanese Grassroots Fund.

Way Forward

As described above, the ICRM project has been implemented in three different countries as pilot projects to demonstrate the practical applicability of the community-based resource management (CBRM) concept that has been developed and successfully adopted in other countries such as Japan, in local fishing communities in Southeast Asia. While the project intends to apply the process of decentralization where ownership of the resources is handed over to the local authorities, it was also envisaged to snowball a model for the dissemination of the CBRM concept in the region. Specifically, the rationale of implementing such concept lies in testing the applicability of such an approach in each country and anticipating further expansion or dissemination of the modus operandi to other areas in the country by responsible authorities.

The ICRM project was also envisioned to come up with significant results that would lead to rehabilitated and enhanced coastal resources as well as poverty alleviation in the coastal fishing communities. Specifically, the total embodiment of the CBRM approach not only by the resource users but also by all stakeholders would ensure that the resources are being utilized in a sustainable way. With all stakeholders participating in the decision-making process of the coastal resource management, they share the responsibility with concerned authorities in the management and in the elimination of destructive and illegal fishing operations thus, conserving the resources.

Under the CBRM concept, one of the major objectives is to deliver improvements in terms of increased fish production and subsequently the living conditions of the stakeholders.

Solutions to overfishing and over-capitalization will definitely lead to improved socio-economic conditions of the resource users and their families. With the fishers' involvement in the organized groups, they become capable of pursuing resource management and community development activities on their own initiative. The improved institutional capacity of the local organizations and local governments would lead to strengthened cooperation among the people and the institutions involved in self-help economic and social activities.

In case of ICRM-PD, it has been taken over by DOF of Thailand under the financial auspices of the Royal Project Council after the termination of the involvement of SEAFDEC in December 2006. Although the ICRM-PD has attained significant results, TD within its capacity still needs to continue providing assistance in terms of guidance and provision of certain technologies as necessary, and in supporting the project in terms of follow-up activities.

For the ICRM-PL project, the DOF Malaysia has continued implementing the activities and formulated the Project Implementation Committee within the DOF to manage the project. Similarly for the ICRM-SV, management of the project activities has been pursued by the Fisheries Administration of Cambodia. In the case of the ICRM-PL and ICRM-SV, assessment of the impacts and outcomes on the communities still needs to be carried out. Therefore, the assistance of TD would still be necessary in terms of monitoring and evaluating the outputs of these projects. TD would therefore continue its support to the project within a limited budget in the form of follow-up actions to ensure that all attempts exerted in the pilot stage would be pursued further with their practical applications.

From the initial outcomes of the project implemented in Thailand, Malaysia and Cambodia, the lead government authorities have been provided with models for the possible dissemination of the CBRM concept to other areas in their respective countries. Government authorities are therefore encouraged to take the opportunity of implementing similar projects for the sustainable management of their coastal areas. As envisaged during the planning of the project, the knowledge and experience gained through the project operations would also be disseminated to the other SEAFDEC Member Countries when and where possible, through the technology transfer mechanism being promoted by SEAFDEC.

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