



Ministry of Environment

Final Report on In the Hands of the Fishers Program in Cambodia

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I. INTRODUCTION

Peam Krasaop Wildlife Sanctuary (PKWS) is located in Koh Kong province in the south-western part of Cambodia and covers an area of 23,750 hectares. This area is primarily covered by mangroves, and is notably the only prime mangrove area on the Cambodian coast. Although the mangroves are the basis of the fishery ecosystem and therefore the base for the livelihoods of the coastal villagers, the mangroves have been under serious pressures and threats due to mangrove cutting for charcoal production, shrimp farming, and other consumptions in early 1990s. As a result, the livelihoods of the island communities within PKWS were difficult to sustain and gradually have deteriorated.

Having seen such challenges and with assistance from the International Development Research Centre (IDRC) of Canada in cooperation with the Ministry of Environment (MoE), Participatory Management of Mangrove Resources was established in late 1997 with the aim of halting destructive activities of natural resources, restoring the mangrove forests and their ecosystems and eventually improving the livelihoods of the coastal communities.

To reach this goal, Community-Based Natural Resource Management (CBNRM) concepts were introduced to key people from the communities, technical departments within the province, provincial and communal authorities and concerned NGOs and projects (known as concerned stakeholders). In order for the concepts to be accepted among the people, a series of activities have been undertaken through PMMR facilitation and coordination, which has recently changed its name Participatory Management of Coastal Resources (PMCR). These activities include trainings, workshops, visits, study tours, formal and non-formal meetings, campaigns, 'learning by doing' and so on.

With the continuous efforts of all concerned stakeholders and the communities themselves, CBNRM concepts are now recognised and accepted. This has been illustrated by the organization of communities (Koh Sralao, Koh Kopic, Peam Krasaop and Chrouy Pros) into Village Management Committees (VMCs)¹, the involvement of community members in mangrove restoration and management activities, the participation of the community members being recognized and applauded by the technical departments such as fisheries, environments, etc. and local authorities (provincial governors, commune councils, navies), the replanting of many degraded mangrove areas, and the recent improvement seen in the livelihoods of the villagers, especially amongst the poor.

However, the above mentioned activities are not sufficient, especially in the light of mangrove rehabilitation, community work initiatives like waste management, community development, legal enforcement, livelihood improvement, fishery conflict resolutions and many others. Therefore, assistance – financial, technical, legal and encouragement, to the communities is still required.

¹ VMC members are voted for by the community members to run the organized communities with a 3 year term. VMC which is supported by governmental institution on co-management and different from the commune council plays a role as commune council secretariat and focuses mainly on coastal resource conservation and protection and concerned community development.

Among agencies assisting the communities, the McKnight Foundation Southeast Asia through MAP-Asia donated funds have assisted in mangrove restoration, waste management extension, aquaculture extension and training under the facilitation by PMCR. The main outputs of the project include mangrove replanting and conservation activities, waste management, a workshop on Enhancing Community Knowledge and Skill for Sustainable Coastal Resource Management and joint research on coastal and marine fishery conflict resolutions.

However, this final report which covers a period from January 2005 to December 2006 is structured based on project implementation, project impacts, and conclusion followed by appendices.

II. PROJECT IMPLEMENTATION

The major activities which were undertaken within this period of time include mangrove restoration, waste activities, joint research on research on marine and coastal fisheries conflict and creating a potential roadmap to conflict management, community federation development and workshop on building capacity and environmental awareness enhancing. Each of activities is elaborated as following.

1. Mangrove Restoration

Objectives	Outputs
<ul style="list-style-type: none"> • To help the communities become more environmentally conscious • To replant the identified degraded areas with propagules or seedlings • To improve the ecosystem in the degraded areas • To raise awareness of the communities of participatory mangrove protection 	<ul style="list-style-type: none"> • 10 hectares of mangrove degraded areas were replanted with propagules and seedlings • More community members became active in mangrove replanting/planting in the identified areas. • More attention to caretaking and protection has been paid by the fisherfolks. • Mangrove nursery activities were initiated among the community members and environmental rangers

Due to the urgent needs of mangrove rehabilitation with a hope to improve the mangrove forests and then livelihoods of the communities, especially the poor, the proposed budgets were used for replanting²/planting³ mangroves within the degraded areas identified and suggested by the local communities. However, there were only three mangrove species (*Rhizophora Apiculata*, *Rhizophora Mucronata* and *Ceriops tagal*) selected for the replanting/planting due to the area conditions and their high survival rates.

During the implementation of the project, two different types of rehabilitation efforts were initiated – replanting with seeds picked from the mangrove areas and planting seeds from the nursery.

With Seeds or Propagules Collected from the Mangrove Area.

With the full and active participation in the mangrove seed replanting from community members, school staff and students and monks, about 10 hectares of degraded areas were

² Replanting refers to mangrove area where mangrove had been destroyed

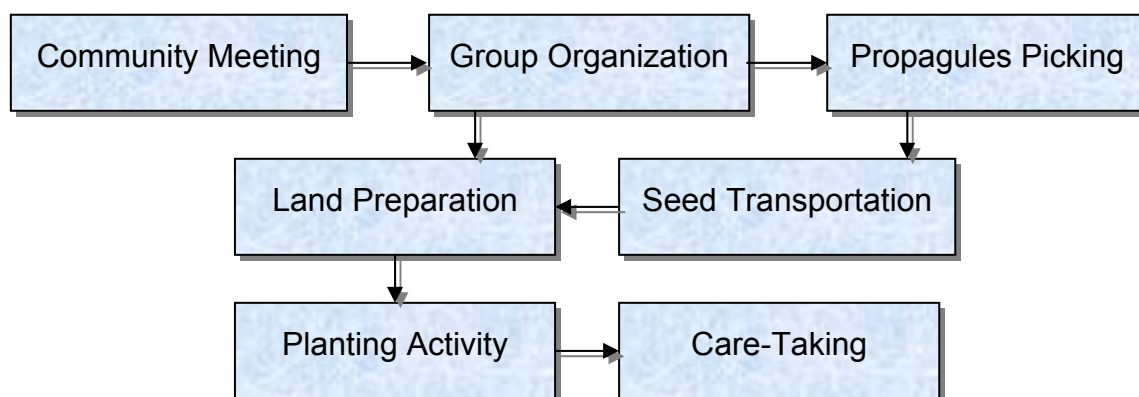
³ Planting refers to area where there is no mangrove forest.

replanted with seeds being collected from the mangrove area. For such replanting activities, time and effort were committed for grouping replanters, picking mangrove seeds (propagules), land preparation, seed transportation to the replanting site, replanting and the delivery of incentives to both the involved adults (incentives were known as the rice-for-labour⁴ initiatives), and schoolchildren and teachers (these incentives included study and teaching materials ie: pencils, rulers, books, marker). The villagers benefited a lot from such replanting activities as one re-planter said,

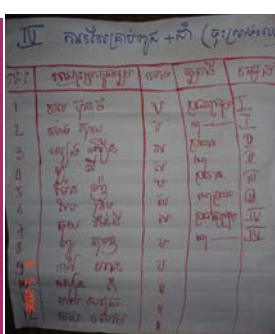
“I am happy to be involved in the project for we not only have the degraded areas replanted with mangroves but also are given rice to support the family while fish catches are not good in this reason ”.

In addition, with coordination and facilitation these two years (2005 to 2006) by PMCR teams under support by IDRC and McKnight Foundation/MAP-Asia, there are around 120 hectares of degraded areas of mangrove have been replanted through the support from other local organizations such as Seila Program and Coastal Zone Management Project, Community Project and OISCA-Cambodia.

DIAGRAM 1: Mangrove Replanting by using seed/propagules



Community meeting for replanting



Group organizing



Propagules collecting by villagers

⁴ Rice-for-labor here refers to the rice donation to those who got involved in the replanting activities, ranging from seed selection to seed replanting. The standard rice donation is one kilogram of rice is exchanged with 300 mangrove seeds and each household is limited to only 1500 seeds. The limitation is imposed to ensure more households have chance to be part of the project, resulting in building sense of ownership.



Land preparation for Replanting



Transportation seed and people for planting



Before Replanting



After Replanting

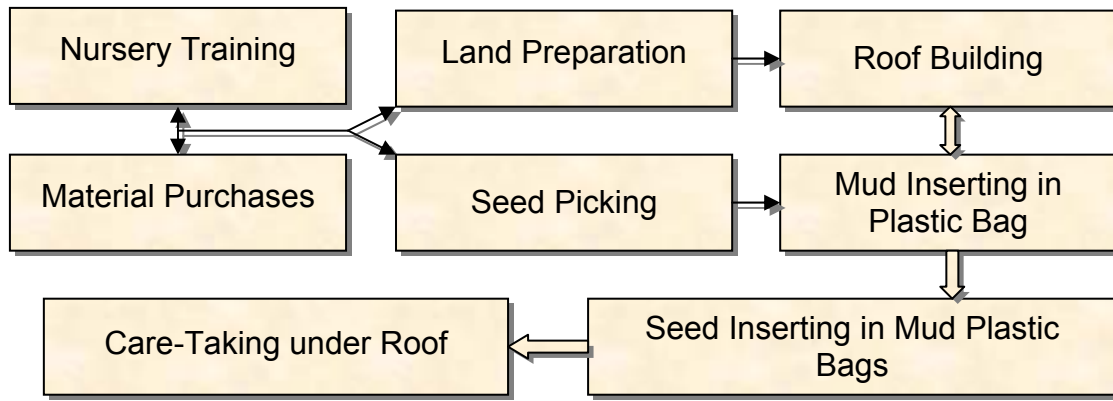
With Seedlings from Mangrove Nurseries.

Mangrove nursery and planting has been initiated under activities supported by McKnight Foundation-MAP-Asia’s fund. The selected method for seed planting was unprecedented and experimental, as it utilized seedlings from the nursery and were being transplanted to a unreceptive area of land. The seeds from the nursery were planted in a non mangrove forest swamp for the replacement of dead or destroyed replanted seeds which had been picked from the mangrove area. 15000 nursery seedlings were planted in an area in Koh Sralao community, where seeds collected from the mangrove area had difficulty surviving due to the degraded soil condition, direct interface with tides from the channel, and that this is an area where historically no single mangroves or inundated forests have grown.

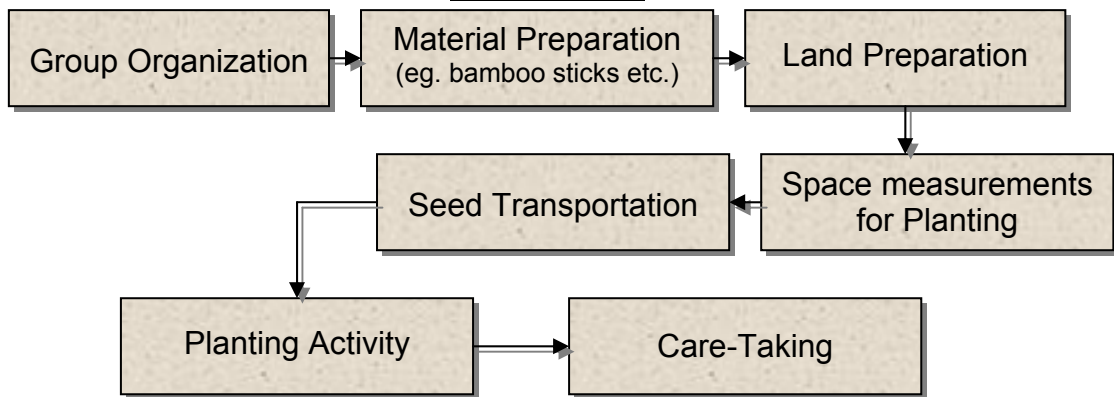
It can be noted that although it is too soon to assess the level of survival, the planted seedlings looked promising in her their adaptation to the soil.

It should be noted that planting with nursery seedlings requires more resources (human and financial) than replanting with seeds gathered from a mangrove area, and that this plan have been supported from other sources such as IDRC, OISCA and McKnight/MAP-Asia. The process of this nursery seedling planting is illustrated by the two stages below:

DIAGRAM 2: Mangrove Planting by Using Seedling
Nursery Stage



Planting Stage



Land preparation for nursery



Mud inserting in the plastic bag



Seed inserting in mud plastic bag



One Month after care-taking



Area situation before planting



Area situation after planting

Conservation of Replanted/Planted Mangroves

To ensure survival of the replanted and planted seeds, groups of community members took turns patrolling and replacing the dead or destroyed seeds in addition to their care-taking activities, when they are on the way to and back from the fishing. Such community participation in conservation is an indication of (i) growth of a sense of stewardship and ownership over their natural resources and (ii) their emerging confidence in the belief that their livelihoods could be improved through improving the health of the mangrove ecosystem.

2. Waste Management Extension

Objectives	Outputs
<ol style="list-style-type: none"> 1. To raise awareness on how waste issues impact both humans and the environment adjacent to the village; 2. Support using education and capacity building techniques with pupils, teachers, and local people to create a stronger understanding of the need for a community solid waste management plan; 3. Minimise the negative impacts caused by solid waste disposal; 4. Develop an improved system for solid and liquid waste disposal such as plastics, glass bottles, old fishing gears and used diesel oil from boat engine etc. 	<ul style="list-style-type: none"> • Successful waste management approaches were shared from one community to nearby communities • Negative issues resulting from solid waste and poor management were understood among the community members • More waste management initiatives and plannings such as regular cleaning up days, waste collection schedules, waste collection fees, waste management competition etc were undertaken by the community. • More waste management materials such as rubbish bins, waste carrying trolleys, etc. were made available in the communities • Building a sense of co-operation among the community members through collective work such as community clean up activities • Waste management systems in Koh Kaptic, Chrouy Pros and Peam Krasoap communities were developed and put into operation

With the financial assistance from McKnight Foundation, local VMCs and community members, and through the facilitation of the PMCR team, we have managed to reach the following accomplishments.

a) ***Sharing Knowledge and Experiences on Waste Management.*** Among the target communities, Koh Sralao is regarded as a model community in waste management practices. The activities they use include; regular collective clean up by the villagers and their children, deployment of trash bins in the villages, fee payment for trash collection service providers, arrangement of disposal sites, and campaigns that selected the best family for ‘clean up’ awards. As observed, these solid waste management initiatives were appreciated, especially the fee collection or payment for the collection service which is an indicator of the sustainability of the initiative.

Upon seeing such efforts and achievements, other neighbouring communities such as Koh Kapic, Chrouy Pros and Peam Krasoap were keen to have waste management systems adopted in their communities. Therefore, waste management extensions from Koh Sralao to those communities were undertaken through (i) the conducting of a series of meetings on waste management, (ii) performing clean up campaigns based on the benefits of clean villages and involvement of all community members, (iii) provision of waste management materials such as cutting knives, brooms, baskets, hoes, trolleys, etc. and (iv) encouraging individual communities to plan and conduct a regular clean up day on a monthly basis.

In addition to collective work activities on waste management, the PMCR team has observed that more households are practicing regular clean activities such as waste collection around their houses, burning or burying, of waste slashing and burning wild growing bushes around their houses, and giving advice to, or encouraging their neighbours to do the cleaning etc.

Although waste management systems in other communities are not as efficient as the Koh Sralao model, due to new efforts and commitments, it is believed that the knowledge and the benefits of the clean environment have been absorbed by the community members.

b) ***Constraints in Waste Management in Island Communities.*** Among the outstanding challenges in each community, including Koh Sralao, is the lack of suitable disposal sites. It is almost impossible to find a sanitary site that is easily accessible to their communities. However, to address the issue, each community household is encouraged to practice the 3 Rs (reusing, recycling and reducing of wastes) and the classification of wastes for either burning or burying in order to reduce the burden of waste gathered by the waste collection providers and brought to the dumping sites.



Children involving in the waste management

Another issue is that although fee collection for waste services has been successfully implemented in Koh Sralao, it takes time to replicate voluntary fee collection due to the overall attitude shift that must occur in a community. Therefore, more time and effort must be expended in educating the community members and further outside assistance will be required.

3. Joint Research on Marine and Coastal Fisheries Conflict and Potential Roadmap to Conflict Management

Objectives	Expected Outputs	Actual Outputs
<ol style="list-style-type: none"> 1. To collect information/ facts on the marine fisheries conflicts and issues faced by the community fisheries (CFi) and stakeholders in Stung Hav-Sihanouk Ville, in Sre Ambel, Chrouy Pros and Koh Kapik, Koh Kong Province, to discern the root cause of the conflicts and traditional or non-traditional means of conflict resolution. 2. To analyze data, publish findings and prepare a national workshop to seek better strategies and more involvement from the public, researchers, and policy makers who are interested in marine conflict resolution. The national marine fisheries management and conflict resolution mechanism would be initiated from the workshop. 	<ul style="list-style-type: none"> • Facts and resolutions will be found out from the research/mission and analysis which can be used for application in conflict management • Strategies will be set up for an educational/advocacy campaign that will increase understanding of the situation in the coastal area • A book from the research/findings will be published in both English and Khmer version • A roadmap for future action for all interested parties/stakeholders 	<ul style="list-style-type: none"> • Surveys were conducted by the joint teams of PMCR, AFSC, and FACT in the identified areas. • Found data was analyzed by the researchers and the advisory committee member from the concerned projects • The analyzed data was compiled into a khmer book, which will be printed and published in the future. • The book is intended to be translated into English.

Much time and efforts was spent by PMCR, and two local NGOs (FACT¹ and AFSC²) to (i) discuss and develop the research outline, (ii) form the research team and advisory boards, (iii) identify the research areas and informants, (iv) conduct the surveys, (v) analyse the findings, (vi) conduct desk research for relevant information, (vii) compile the analyzed data, and (viii) the exchange of the manuscript from one person to another for comments to quantify and qualify the information (See Appendix 2: Brief Information of the Joint Survey).

Although the activities were strictly scheduled and commitments were made by the research and advisory teams, the final expected outputs, namely the promised final versions in Khmer and English, the publications, output distributions and distribution and advocacy workshop have not yet been completed. This was mainly due to lengthy discussions and debating among the teams about the contents, the changes of main responsible team members (Mr. Van Piseth, research leader left FACT for this overseas training, Mr. Duong Vuthy, AFSC ISLP director left the project and became as national coordinator of his organisation etc), and limited ability on data analyses among the research teams.

However, there is now the research results published in Khmer and FACT has said they are currently translating it into English, which is to be followed by the planned workshop in due course.

¹ FACT stands for Fisheries Action Coalition Team

² AFSC stands for American Friendship Service Committee

4. Community Federation Development

As part of project implementation, the communities of Koh Kapic, Koh Sralao and Chrouy Pros were organized into a community federation with an aim at sharing community work experiences such as local waste management systems, helping each other to create solutions to fisheries conflicts, conserve and improve natural resources through joint replanting/planting activities for mangroves and patrolling, sea-grass protecting and the strengthening of relationships so that they can act as one voice when addressing the policy and decision makers on gaining support for community activities.

The three communities have been very active in sharing knowledge and experiences in terms of community management, especially from Koh Sralao to other brotherhood communities. This structure has successfully reduced the illegal fishing activities within Chrouy Pros Bay as well as providing a platform for solution creation for some fisheries conflicts that are emerging in their fishing grounds.

It was hoped by the project teams of PMCR and the technical departments of environment and fisheries, that this community federation which is unique to the coastal areas of Cambodia, is a good community movement that strengthens community cooperation, sustains the community work, builds a sense of ownership and helps to implement decentralization and deconcentration policies of the Royal Government of Cambodia.

In late 2005, this federation under the facilitation of PMCR team, developed a joint proposal for mangrove replanting and conservation in Koh Kapic and Koh Sralao and seagrass conservation in Chrouy Pros Bay to be submitted to UNDP Small Grants Program and has subsequently been approved. This project is currently being implemented by the federation.

5. Drawing Contest

As part of the environmental awareness raising campaigns, a poster contest was conducted among the school children in the selected primary schools along the coastal areas, namely some schools from provinces of Koh Kong and Kampot and municipalities of Sihanoukville municipality and Kep. Under the Title of “Mangroves and Livelihoods”, the school children were encouraged to draw pictures of the topics based on their own initiatives and sent to the assessment committees whose members are from the PMCR and CZM staff and officials of the Ministry of Environment. As a result, 10 best drawings were selected for the awards in form of cashes and study/teaching materials. 3 of winners were from Koh Sralao and Koh Kapic where the CBNRM concepts have been widespread, especially among the school children.

In addition, some best drawings were selected by PMCR team and sent to Mangrove Action Project for 2007 International Children’s Art Calendar.

This drawing contest not only encouraged young generations and their teachers to love the natural forests such as mangroves and their ecosystems but also to link the resources with their daily livelihoods and to raise awareness of the importance of resources in their communities. It was observed that the contest event like this would be the effective environmental and natural resource education campaigns and therefore should be held every year as a part of PRA in light of CBNRM efforts and commitments.

6. Workshop on Building Capacity and Environmental Awareness Enhancing.

Objectives	Outputs
<ol style="list-style-type: none"> 1. To enhance participants' knowledge and skills in coastal resource management; 2. To raise participant awareness on the values and impacts of marine and coastal ecosystems; 3. To identify the importance of the networking and partnership building for sustainable coastal resource management; 4. To improve coastal environment and local livelihoods through knowledge and skill development and 5. To build and refresh stronger relationships among the participants 	<ul style="list-style-type: none"> • Participants will be aware of the concepts and principles of coastal resources management • Participants will have a deeper understanding of the key importance of networking and partnership building • Participants will improve their own management for coastal environment and livelihoods for the future. • Strengthening the relationship and solidarity among the participants, especially the communities and the provincial technical departments

A three day workshop was held at in Koh Kong centre for about 30 participants from the target communities, commune councils, provincial technical department officials, provincial authorities, relevant project/agency representatives. A variety of natural resource and environmental management concepts were delivered for the participants. They included:

- Kinds and values of natural resources,
- Sustainable natural resource use and development
- CBNRM or natural co-management concepts
- Relationships between coastal and marine areas
- Interactions between mangroves, seagrass and coral reef systems
- Roles and functions of mangroves, seagrass and coral reefs
- Advantages and disadvantages of networking
- Experiences of successful waste management systems
- Project management concepts (planning, project cycles, project management steps, etc.)
- Report writing skills and so on.

The participants were encouraged to apply the knowledge and experiences from the workshop in their communities and to share this with other community members whenever it is feasible.

In addition, this workshop gave an opportunity to the local participants, not only to meet the high profile officials from the Ministry of Environment and provincial cabinet but also to share with them the challenges and/or issues faced by the communities. It is hoped that the local voice was scaled up to the central leaders and policy- and decision-makers, by this opportunity.

In addition, with experiences gained from project support, capacity building activities, and field implementation of various initiatives, the local community in PKWS has been empowered to work with other government and non-government institution in national workshops and public forums on policy reform on fisheries sub-degree and law, and protected area management laws , etc.



Senior Government Officials from MoE and Koh Kong Province Participating Community Training



Local Community from KKP, KSL, CHP and PKS attending the training course on ICRM



Interaction Between Trainer and Trainees to Discuss the Concept Idea on Coastal Resource Management

III. PROJECT IMPACTS

1. Mangrove Replanting/Planting and Nursery

Even though this project is supported with a small budget and has been implemented within a short period, participatory monitoring and evaluation by stakeholders (local community, local authority, and technical department at both provincial and national levels) has yielded encouraging reactions on the project outputs and outcomes. Reflections by stakeholders, have pointed to the following positive impacts.

a. Rehabilitation of degraded areas, which were destroyed in the 1990s. Through the replanting/planting activities, it can be observed that the mangrove ecosystem is now improving. It can be assured that the newly planted area contributes to the health of the overall mangrove ecosystem within PKWS in terms of fish stocks, crabs, snails, clams and other non fishery products for the villagers within and outside the communities.

b. Encouraging stronger cooperation between one community to other community (e.g. Koh Sralao Community and Koh Kopic Community). As stated in the section of mangrove replanting and planting, community members, school children and commune councils under the leadership of VMC have worked together to implement the project. Such collective action is building community solidarity, not only for the mangrove replanting and conserving activities but also for other community activities such as waste management, community development, community planning etc. As one VMC member said, *“mangrove replanting brings villagers to do good things for the community. I am so pleased with this work...”*

c. Enhancing skill and knowledge of local communities on technical mangrove replanting both using propagules and nursery. The community usually does replanting with seeds collected from the mangrove area. However, with the OISCA funded project and McKnight Foundation-MAP-Asia some community members and PKWS rangers attained knowledge of nursery and nursery seed planting techniques which had never been practised in their localities. The new skills included land preparation for nursery, required materials, mud selection for nursery seedlings, and planting techniques such as measurements between seeds, seedling planting etc. in addition to the care-taking in both nursery and planting stages.

d. Encouraging local communities through expanding understanding of the benefits of mangrove conservation and protection. PMCR played a role as facilitator for communications between supporters and communities and as the primary trainer in nursery and planting activities, nursery preparation, nursery caretaking, replanting and planting. Conservation of the mangrove areas falls under the responsibility of the community members and PKWS rangers, who are known as field implementers. Such work, not only restores the mangroves and their ecosystem which results in more fish and other non-fishery products, but also strengthens a sense of stewardship which is important for the sustainability of the community work, including mangrove replanting and conservation.

e. Securing the livelihoods of those who are dependent on mangrove resources and contributing to Royal Government Policy on Poverty Reduction through natural resources rehabilitation and conservation. In the future, it is expected that the rehabilitated areas will help the community members, especially the poor, to sustain their livelihoods through increased fish and non-fishery product stocks in the mangrove area. This in turn enables an overall contribution to government policy on poverty reduction among all Cambodian people.

2. Waste Management Extension

a. Clean Environment. As one community member of Koh Kapic said after the clean up days, he was very happy to see the clean environment. He further stated that with such a clean village, fewer ailments would be expected in his communities.

b. Building Sense of Ownership. Similar to mangrove replanting/planting, the waste management efforts made by the community members helped to build a sense of ownership which will be vital to the continuation of the work when external support is retracted. Such activities were also a good model for younger generation to take part in community work which benefits all.

c. Building Good Working Attitudes. Sharing and ‘learning by doing’ attitudes were transferred from one community to another in the field of waste management, this was highlighted by the eagerness for cooperation and the offering of mutual assistance from one community to another. It can be regarded that sharing knowledge and experience in waste management can be a starting point of a model for mutual assistance to be used on bigger, more challenging issues emerging in their communities and province.

d. Further Waste Management Extension. It is believed that the extension does not end with Koh Kapic, Koh Sralao, and Peam Krasoap communities. It is hoped that this sharing of experiences in terms of processes and knowledge can be replicated in other coastal communities in Cambodia in over an extended period.

IV. CONCLUSION

It can be concluded that within the two year project, the In the Hand of Fishers (IHOF) was satisfactorily implemented according to the proposed activities raised in the proposal submitted to McKnight Foundation S.A. Grant Programme.

Although longer impacts are not yet known at this stage, the work such as nursery, and replanting/planting, waste management, joint research on marine and coastal fisheries conflicts and potential roadmap to the conflict management, community federation development and Workshop on Building Capacity and Environmental Awareness Enhancing were satisfactorily and successfully undertaken.

However, the PMCR team observed that more work needs to be done within the coming years since (i) there are more degraded areas and in some places only nursery efforts are possible, (ii) the waste management systems in the extended communities have not fully sustainable and self-reliant, (iii) sharing the knowledge and experience from the workshop among community members require follow up and (iv) more work needs to carried out in relation to the survey outputs, result publication and distributions.

Therefore, more technical and financial assistance is required to ensure that degraded areas in PKWS can be replanted/planted, and that the waste management system in other communities will be strengthened and the research results need to be finalized and distributed.

V. APPENDICES

Appendix 1: Training Course Minute



Project Participatory Management of Coastal Resources

Proceeding of Training Course On

**Enhancing Community Knowledge and Skills for Sustainable
Coastal Resources Management**

**14-16 June 2006
Coastal Resource Centre, CZM, Koh Kong**

**Organized by Participatory Management of Coastal Resources
Under Support from International Development Research Centre
And
McKnight Foundation- MAP-Asia**

1. Introduction

The communities locating in Peam Krasaop Wildlife Sanctuary (PKWS) were organized since early 2000 with facilitation by Participatory Management of Mangrove Resources Project (PMCR) of Ministry of Environment under support from local authorities and relevant institutions. Each community in PKWS was lead by a Village Management Committee, known as VMC whose members are voted for by the community members. After having in place the communities, both VMC and community members have, with partnership organizations and commune councils (CC), been active in protection and conservations of coastal resources and community work. The major involvement of VMC and its members in the community work includes mangrove replanting, patrolling to stop mangrove felling for charcoal production, dealing with illegal fishing practices, community cleaning up, fisheries conflict resolutions among the fisher folks inside and outside the community, many other development work and so on. These activities, however, have been not sufficient to meet the needs of the communities due to limited knowledge and skills from VMCs and CCs as well as community members.

Grasping these challenges, this training course is developed by PMCR for members of VMCs, CCs and communities. This training course is strongly supported by the Ministry of Environment and kindly financed by International Development Research Center of Canada (IDRC) and McKnight Foundation through Mangrove Action Project (MAP)-Asia.

2. Main Objectives

- To enhance participants' knowledge and skills on coastal resource management;
- To raise awareness of the participants on the values and impacts of marine and coastal ecosystems;
- To identify the importance of the networking and partnership building for sustainable coastal resource management;
- To improve coastal environment and local livelihoods based on knowledge and skill development and
- To build and refresh stronger relationships among the participants

3. Expected Outputs

- a) Participants will be aware of the concepts and principles of coastal resources management;
- b) Participants will deeper understand key importance of networking and partnership building; and
- c) Participants will improve their own management for coastal environment and future livelihoods.

4. Methodology

- Lectures
- Slide presentation
- Video playing
- Handout distributions
- Brainstorming and questions

5. Participants

- District authority
- Commune councils
- Village Management Committee members
- Environmental rangers

6. Agenda

Time	Activity	Responsibilities
Day 1 : June 14, 2006		
07:30 - 08:30	Registration	Ms. Daravy and Ms. Theavy
08:30 - 08:35	Welcoming notes and National Anthem	Mr. Chey Pic Rathna
08:35 - 08:45	Welcome remarks by Deputy Governor of Koh Kong	Mr. Em Sim Youn
08:45 - 09:00	Opening Training by Under Secretary of State	H.E. Thuk Kroeun Vutha
09:00 - 09:10	Stating the training objectives	Mr. Kim Nong
09:10 - 09:30	Coffee break	
09:30 - 12:00	Basic concepts of natural resource management	Mr. Soeung Typo
12:00 - 02:00	Lunch	
02:00 - 03:00	Marine and coastal ecology management	Mr. Khy An
03:00 - 03:20	Coffee break	
03:20 – 04:20	Marine and coastal ecology management (continue)	Mr. Khy An
04:20 - 05:20	Importance of certain coastal/marine resources	Mr. Kim Nong
Day 2: June 15, 2006		
08:00 - 09:00	Continuation of Importance of certain coastal/marine resources	Mr. Kim Nong
09:00 - 09:20	Coffee Break	
09:20 - 12:00	Networking and partnership building	Mr. Soeung Typo
12:00 - 02:00		
02:00 - 03:00	Concepts of project management	Mr. Chap Sapanha
03:00 - 03:20	Coffee break	
03:20 - 04:20	Concepts of project management (continued)	Mr. Chap Sapanha
04:00 - 05:30	Basic concepts of report writing	Mr. Kim Nong
06:30 – 09:00	Friendship Dinner	All resource persons and participants
Day3 : June 16, 2006		
08:00 - 10:00	Planning development	Mr. Chap Sapanha
10:00 - 10:20	Coffee break	
10:20 - 11:20	Training evaluation	Mr. Chap Sapanha
11:20 - 11:30	Closing training ceremony	H.E. Thuk Kroeun Vutha Mr. Em Sim Youn

7. Training course activity

7. 1- Opening Ceremony

The opening ceremony of the training course was presided over and participated by the following people:

- H.E Thuk Kroeun Vutha, Under Secretary of State, MoE
- Mr. Em Sim Youn, deputy governor of Koh Kong province
- Mr. Sam Khanndy, deputy technical director general, MoE

The participation from the high profile people from the Ministry of Environment and the provincial authorities not only contributed to the pride of the workshop environment but also expressed their interests and support to rehabilitation and conservation of the coastal and marine resources.

7.2- Workshop Activities

With an emphasis on participatory approaches, the following capacity of the participants were strengthened and built. They are briefed as following:

Topics	Main contents/concepts delivered
Natural Resource Management Principles	<ul style="list-style-type: none"> • Knowledge of natural resources (kinds and values of natural resources) • Necessity of natural resources (sustainable uses of natural resources) • Natural resource management features (centralization, decentralization, and co-management/CBNRM) • Participatory approaches (who involved? what roles and responsibilities of stakeholders?) • Natural resource management plans
Marine and coastal ecology management	<ul style="list-style-type: none"> • Relationships between coastal and marine areas • Interactions between mangroves, seagrass and coral reef systems • Roles and functions of mangroves • Roles and functions of seagrass and coral reefs • Benefits of mangroves, seagrass and coral reefs
Networking and partnerships	<ul style="list-style-type: none"> • Concepts of networking (principles of networking and partnership, advantages and disadvantages of networking and partnership, roles of a person to build a network and partnership) • Attitudes of network and partnership builders
Basic concepts of project management	<ul style="list-style-type: none"> • Project management concepts (planning, project cycles, project management steps, etc.) • 4 steps in project management (information mobilization, long-term or short term planning, project implementation, and report writing)
Basic concepts of report writing	<p>Report contents would be</p> <ul style="list-style-type: none"> • Background of the project • Project activities • Challenges in project implementations • Solutions to challenges • Conclusions and recommendations etc.
Waste Management System	<ul style="list-style-type: none"> • Problems of waste disposals • How to manage waste (solid and liquid wastes) in the coastal areas, especially in the islands) • Benefits of participatory waste management

It was observed that although the workshop was short, the expected outputs, the participatory approaches applied, were achieved. As stated by a participant, 'the workshop not only brings people from different communities to meet and talk, but also build up the knowledge of the participants on different topics, especially coastal resource management such as mangroves, seagrass etc.'. 'This

knowledge, newly gained, will be further expanded to other community members and other communal institutions', added by another participant.

7.3 Workshop Assessment

Each participant was asked to assess against the lesson contents and the resource people. In general, the majority of the participants valued the workshop and appreciated the resource persons.

Appendix 2: Brief Information of the Joint Survey

Joint Research on Marine and Coastal Fisheries Conflict and Potential Roadmap to Conflict Management

Objectives:

1. To collect information/ facts regarding the marine fisheries conflicts and issues facing by communities fisheries (CF) and stakeholders in Stung Hav, Sre Ambel and in Koh Kapik regarding the root cause of the conflicts and traditional or non-traditional ways for conflict resolutions.
2. To analyze data, publish findings and prepare a national workshop to seeking better strategies and involvement from public, researchers, and policy makers who interested in marine conflict resolution. The national marine fisheries management and conflict resolution mechanism would be initiated from the workshop.

Research Areas:

5 communities (4 in Koh Kong province – Chrouy Svay, An Choeurt, Koh Kapic and Chrouy Pros and 1 in Sihanoukville – Village Number 4 in Steung Hav District).

Research Teams:

1. Field Research Team: 1 from PMCR, 2 from FACT and 1 AFSC
2. Advisory Team: 1 from PMCR, 1 from AFSC and 1 from FACT

Research Strategy:

1. Desk research
2. Field survey
3. Finding analyses

Structure of Case Study and Brief Description:

Chapter 1: Introduction

1. Background
 - Two types of fishery catches – fresh water and coastal and marine water
 - Fresh water fisheries are important for country economy and people livelihoods
 - Coastal and marine fisheries are important for coastal communities
 - Coastal and marine resources are under threats
2. Issues and conflicts after Cambodia war

Many conflicts caused by:

- Limited fishing ground, poverty, population growth, illegal fishing practices, decrease of fish stocks, limited law enforcement, violence etc.

Chapter 2: Literature Reviews

1. Fishery Administration Structure
 - Department of Fishery (DoF) which is authorized by the Ministry of Agriculture, Fisheries and Forestry is responsible for development mechanisms to sustain fishery management and provincial/municipal administration is endorsed by the DoF.
 - To implement the fishery work nation wide, DoF, therefore, is developing short term, long term and strategic plans (one year for short term, 5 years for long term and 10 years for strategic plans). In addition, there are a number of priority programs with an objective to raising awareness about fishery management and conservation for the community fisheries, to monitoring the old fisheries law to see if it meets the social and environmental needs.
2. Fishing Backgrounds
 - Fishery management started in 1988 after an enactment of 1987 fishery law. Based on this law, coastal and marine fisheries classify 3 types of fisheries (big scale fishing (31 plus horse power engine), medium scale fishing (below 31 horse power engine) and small scale fishing (no engine boat, fishing for family consumption etc)).
 - Most of fishery catches were imported into Thailand. Only small amounts of the catches are for the local demands and local processes.
 - If compared with the neighbouring countries such as Thailand and Vietnam, marine and coastal products of Cambodia are much smaller. According to the marine fishery statistics by the DoF, the fishery products increased from 36,000 tons in 2000 to 45,850 tons in 2002 and to 54,750 tons in 2003.
3. Assistance from National and International NGOs to Environmental Sector
 - Since 1993, there are 6 national and international projects operating in coastal provinces and municipalities. They are ADB, REGCMEM, ICM, PMMR/PM, AFSC and CZM/DANIDA. From 2002, there are other projects working on the fisheries such as Seila programme, FACT and PEMSEA.
 - The goals and objectives of these projects and programs are to build human capacities for the management and development of fisheries and environment, to encourage communities to involve in sustainable development and usages of fisheries and environment, and especially to provide livelihood options.

Chapter 3: Findings and Analysing

1. Occupations

Main occupations found in the 230 interviews include:

- Fishing, farming, sales and civil servants

2. Coastal fishery conflict situations

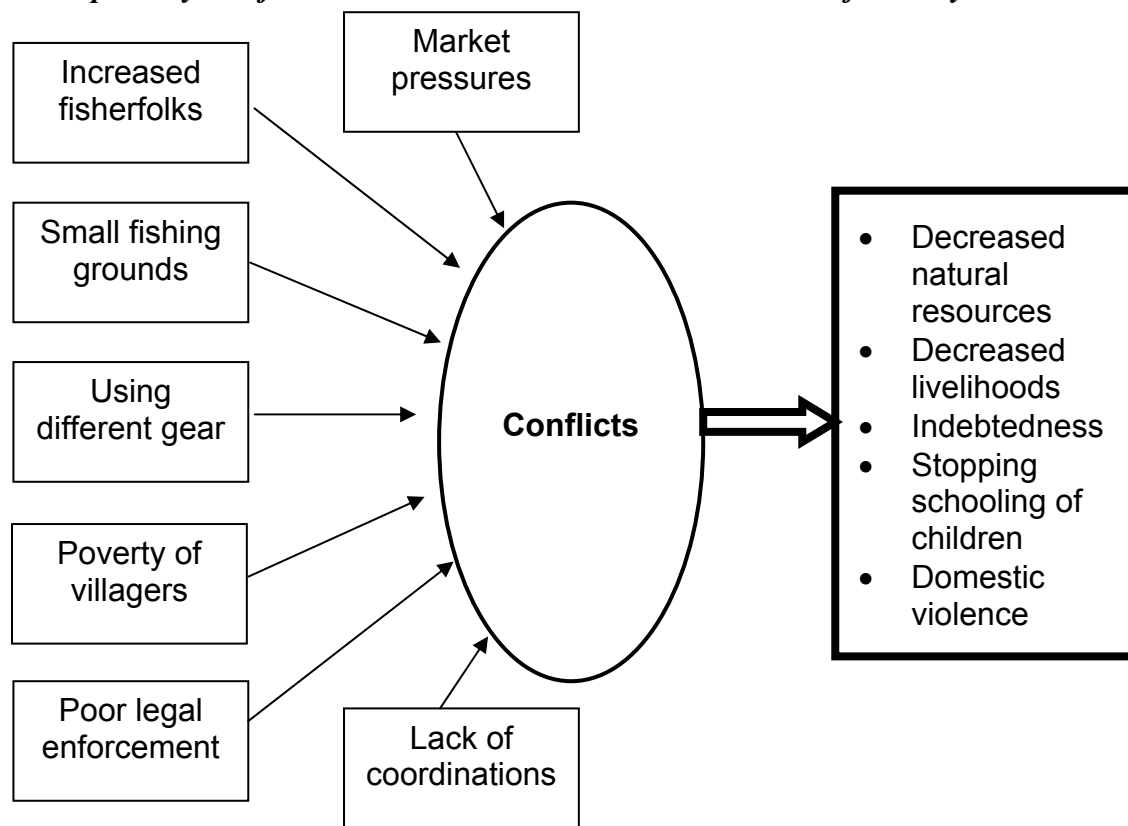
- 5 types of fishery conflicts were identified: (1) community members vs fisherfolks using medium size gear, (2) fisherfolk using small fishing gears vs fisherfolks using illegal fishing gears, (3) fisherfolks using small size gear vs local authority, (4) fisherfolks using medium and large size vs marine competent authorities and (5) local fisherfolks vs foreign fisherfolks. The survey indicated that these conflicts were different from one region to another such as the first conflict (community members vs fisherfolks using medium size gear) more often found in Koh Kong.

3. Institutional Interventions in fishery conflicts

- Concerned laws and regulations: fishery laws
- Effectiveness of interventions by local authorities and fishery officials: the number is equal (50% is effective and 50% is not). However, some interventions, especially

for the conflicts between local fisherfolks and foreign fishing boats are not or cannot be acceptable.

4. *Impacts by Conflicts on Coastal Livelihoods and Decrease of Fishery Resources*



5. *Fishing gear and fishery catches*

- The most fisherfolks interviewed in survey used similar fishing gear such as crab nets, crab traps, shrimp nets, fish nets while some other community such as Koh Kaptic used push net and trawlers. Based on the surveys, 53.33 % of fisherfolks in Village 4, Steung Hav used pull nets and 44.44 % used crab nets. 46.29 % fisherfolks (53 households interviewed) used crab traps and only 11.11 % used pull nets. In On Cha-Eurth, all 41 fishing households interviewed used shrimp nets. 47.27 % of interviewed fisherfolks in Koh Kaptic used push net and 34.54 % used trawling. 90% of fisherfolks in North Chrouy Svay used shimp nets, and 60 % used crab nets.
- The fishery catches such as fish, crabs and shrimps depend on the gear used. For example, shrimp nets can catch 4-7 kilos of shrimps per day while the catches will reach 10 – 20 kilos a day, depending on seasons. For seacrabs, the surveys show that a fisherfolk with crab nets and crab traps can catch up to 8 – 15 kilos of crabs. Fish catches especially “Kamong” fish, the catches can be 100 – 200 kilos.

6. *Conclusion and recommendation*

Based on the surveys, it indicates that most of the interviewees are fisherfolks (230 households) and have no supplementary incomes. As a result, their livelihoods are difficult due to the decreased of natural resources. The livelihood diversifications, therefore, are so important for the coastal fisherfolks.

The surveys also show that the majority of fisherfolks interviewed could identify the illegal fishing practices, especially gears in the shallow water such as push net, trawling and small

mesh nets. The causes of the fishery conflicts were identified such as different uses of fishing gears and limited fishing grounds.

Based on the results of the surveys and the analyses of the findings, 7 recommendations were raised as following:

1. Roles and responsibilities of the fishery officials and local authorities should be rigorously strengthened.
2. The fishing ground boundaries should be clearly marked for small, medium and big scale fishing practices
3. Illegal fishing practices by foreign boats from Thailand and Vietnam in Cambodian water should be prohibited by the Royal Government of Cambodia
4. Fishing practices by medium scale fisherfolks should be reduced in community fisheries
5. Community fisheries should be established in the places where there are no community fisheries.
6. The illegal authorities in the sea should be eliminated by the Royal Government of Cambodia and
7. Development activities should be initiated by the Royal Government of Cambodia in the remote villages to diversify livelihood options.

Chapter 4: Annexes

1. Survey activities
2. Survey questionnaire