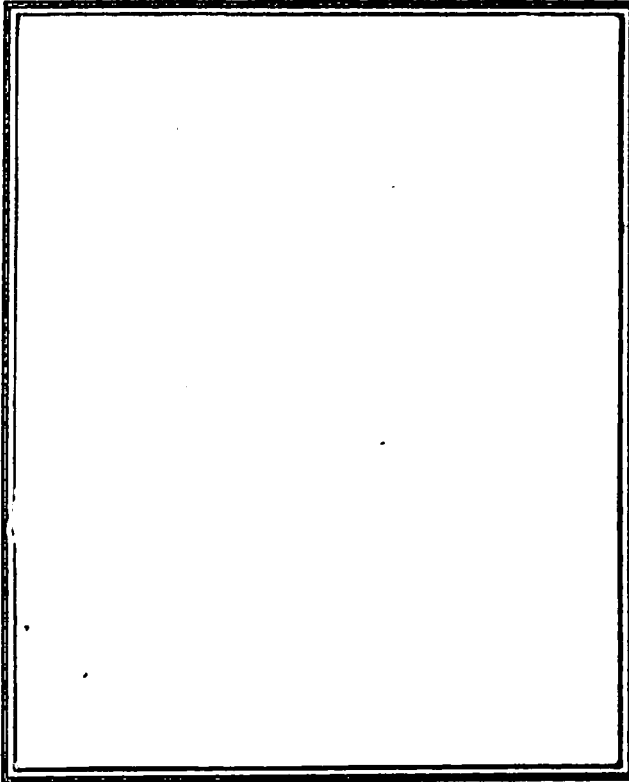


SH
206
P27IW67
#24
c.2



WORKING PAPER

2



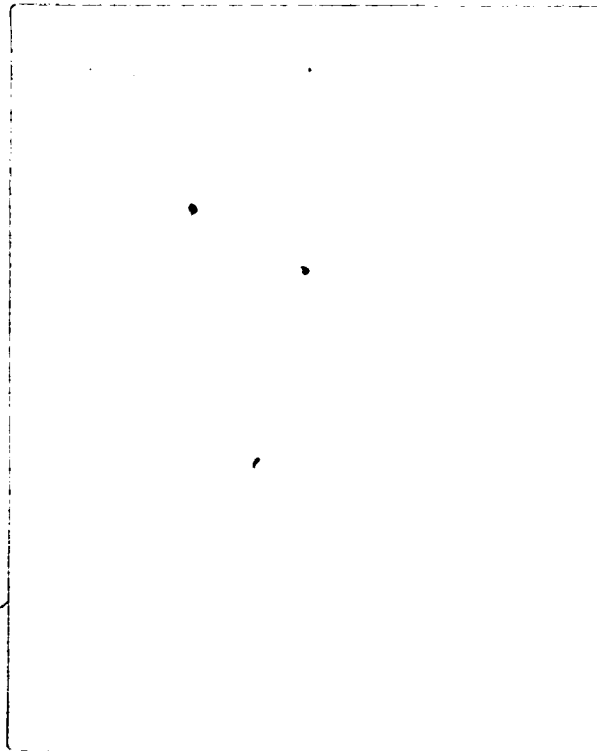
Fisheries

Co-management

Research

Project





With funding from the Danish International Development Agency (DANIDA), a five-year collaborative research project was initiated in 1994 involving the International Center for Living Aquatic Resources Management (ICLARM), North Sea Centre (NSC), Hirtshals, Denmark, and National Aquatic Research Systems (NARS). The collaboration is based on a mutual interest to gain practical experience in research in fisheries co-management, to demonstrate its applicability as a sustainable, equitable and efficient management strategy, and develop models for use and adoption by governments, fisheries communities, NGOs and others.

The Fisheries Co-management Research Project conducts research in coastal, coral reef, lake and river/floodplain aquatic resource systems in Asia and Africa. The overall purpose of the project is to determine the prospects for successful implementation of fisheries co-management strategies. General principles and propositions which facilitate successful implementation of fisheries co-management strategies are being identified.

For more information, please contact:

*The Project Leader, Fisheries Co-management Project, ICLARM, MCPO Box 2631
Makati City, Philippines. Tels. (632) 818-0466, 818-9283; Fax (632) 816-3183; E-mail:
RSPomeroy@cgnnet.com*

*The Project Leader, Fisheries Co-management Project, The North Sea Centre, IFM,
PO Box 104, DK-9850 Hirtshals, Denmark. Tel. (45) 98944188; Fax (45) 98944833;
E-mail: ifmnscc@inet.uni-c.dk*

Fisheries Co-management Research Project publications include Research Reports, Working Papers, Project Documents and Reprints.



269

✓
**Co-Management of Living Coastal
Resources in ASEAN: Theory,
Practice, and Implications for
Vietnam**

**(Report from Training Course #1:
"Principles and Practices of Co-
Management")**

Vincent Verlaan
Vietnam-Canada Ocean and Coastal Cooperation
Program (VCOP)

WP No. 24

1995

SH
206
P271W67
#24
C.2

DEC 09 1997

Co-Management of Living Coastal
Resources in ASEAN: Theory,
Practice, and Implications for
Vietnam

(Report from Training Course #1:
"Principles and Practices of Co-
Management")

United Nations
University
United Nations Centre for
Human Development

1997

WPN 21

13990

Co-Management of Living Coastal Resources in ASEAN: Theory, Practice, and Implications for Viet Nam

Report from Training Course #1:
"Principles and Practices of Co-Management"

Held at the Headquarters of the
Ministry of Fisheries of Viet Nam
(Ha Noi; May 15-17, 1995)

Funding provided by:

1. "Management For Change Programme of CIDA"
through the "Oceans Institute of Canada"
2. "International Centre for Living Aquatic Resource Management" (ICLARM)

Organized by:

"Institute of Fisheries Economics and Planning" (MoF)
"Viet Nam - Canada Ocean and Coastal Cooperation Program" (VCOP)
"International Centre for Living Aquatic Resource Management"

Report Prepared by:

Vincent Verlaan
VCOP Secretariat
Centre for Asian Legal Studies, UBC

Vincent Verlaan
VCOP Secretariat
Centre for Asian Legal Studies
University of British Columbia
1822 East Mall
Vancouver, BC
Canada V6T 1Z1

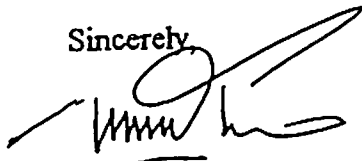
May 20, 1995

Dear Sir,

I accept with pleasure the draft report from the first training course under the VCOP sub-project, "Co-Management of Living Coastal Resources in ASEAN :Theory, Practice, and Implications for Viet Nam".

The Ministry of Fisheries wishes to thank the course organizers and all resource persons and participants for their efforts in the course, and we look forward to further collaboration with VCOP and ICLARM under this project and in future.

Sincerely,

A handwritten signature in black ink, appearing to read 'Vo Van Trac', with a large, sweeping flourish above the name.

Dr. Vo Van Trac
Vice Minister
Ministry of Fisheries of Viet Nam

CONTENTS

1. INTRODUCTION	
1.1 SUMMARY	1
1.2 BACKGROUND TO THE COURSE CO-ORGANIZERS	1
2. OVERVIEW OF TRAINING COURSE	
2.1 TOPIC OF THE TRAINING COURSE	4
2.2 OBJECTIVE OF THE TRAINING COURSE	4
2.3 INTRODUCTORY COMMENTS (DAY ONE)	5
2.4 PROCESS OF THE TRAINING COURSE	8
3. OUTPUTS AND FINDINGS	
3.1 SUMMARY OF MAIN FINDINGS	9
3.2 REPORT OF "COASTAL FISHERIES" GROUP	10
3.3 REPORT OF "MARINE PROTECTED AREAS" GROUP	11
3.4 REPORT OF "AQUACULTURE" GROUP	13
4. RECOMMENDATIONS	
4.1 FINAL COMMENTS, VICE-MINISTER VO VAN TRAC	17
4.2 FURTHER ACTIVITIES	18
5. ANNEXES	
5.1 COURSE AGENDA	
5.2 LIST OF RESOURCE PERSONS AND PARTICIPANTS	
5.3 PAPERS PRESENTED	

Training Course #1 (May 15-17, 1995)
"Principles and Practices of Co-Management"

1. INTRODUCTION

1.1 Summary

A training course focusing upon the policy implications of the participation of resource users in fisheries management regimes was held at the headquarters of the Ministry of Fisheries of Viet Nam (57 Ngoc Khanh, Ba Dinh, Ha Noi) between May 15-17, 1995.

Organized jointly by the Ministry of Fisheries, the Oceans Institute of Canada, the International Centre for Living Aquatic Resource Management, and the "Viet Nam - Canada Ocean and Coastal Cooperation Program", the course brought together more than thirty Viet Nameese participants from throughout the country.

Regional experience in forms of co-management or community-based management for living coastal resource use was described in detail by a contingent of 12 resource persons from Southeast Asia, Hong Kong, Holland, Canada and Viet Nam. Discussion periods followed each presentation, and were continued at the end of each day.

Viet Nameese coastal environmental issues and trends of relevance were examined by the participants in three working groups (focusing on the co-management model as applied to 1. coastal fisheries, 2. marine protected areas, and 3. aquaculture). Recommendations for next steps in the development of co-management activities in Viet Nam were drawn up jointly by participants and resource persons at the end of the training course. These were accepted by the MoF, and the next course will support some of these recommendations.

1.2 Background to the Course Co-Organizers

The "Viet Nam - Canada Ocean and Coastal Cooperation Program" (VCOP) is a policy assistance project undertaken since 1991 by Canadian and Viet Nameese marine policy experts and policy makers. VCOP is funded by Asia Branch of the Canadian International Development Agency (CIDA) as part of its "Asia-Pacific Ocean Cooperation Programme"; the Centre for Asian Legal Studies (CALS) at the University of British Columbia provides a VCOP secretariat and administers many of the project activities. The main Viet Nameese partner in developing and executing the various project activities across the five components of VCOP is the "Continental Shelf Committee of the Government of Viet Nam" (CSC). Six other Viet Nameese ministries and government departments also participate in VCOP activities.

VCOP provides policy development assistance to Viet Nam in three major sectors: integrated ocean use planning, marine and coastal environmental protection, and sustainable natural resource development. The project more specifically encompasses technical assistance and training activities for the development of policy and law in ocean affairs, marine environmental and coastal protection, marine resource conservation and development (including a fisheries component), and maritime transport.

In the activities of the Fisheries component, VCOP has developed close cooperation with certain programs and projects of the "International Centre for Living Aquatic Resource Management" (ICLARM). In particular, VCOP has actively supported further dialogues between the leadership of the Ministry of Fisheries of Viet Nam (MoF) and the fisheries policy research projects of Dr. Robert S. Pomeroy of ICLARM. In return, Dr. Pomeroy has supported close coordination of overlapping activities with the Ministry of Fisheries between ICLARM and the VCOP fisheries component.

These common activities focus mainly upon the utility of co-management arrangements for the sustainable utilization of coastal fisheries in Viet Nam. Clearly, this is a key topic for the partners in VCOP, because VCOP is an effort to assist the relevant government agencies to upgrade and renovate law and policy in ocean and coastal affairs, including natural resource management, to support and respond to economic renovation (Doi Moi).

In the VCOP Fisheries component, both the Canadian and Viet Nameese sides sought to relate the activities regarding sustainability in Viet Nam to fisheries development trends and resource health issues worldwide. Reflecting this objective, discussions with the MoF and the CSC on the specific activities of the VCOP component were launched in 1993.

At the start, it was agreed that its activities would contribute to the role of the MoF as lead policy maker for the fisheries sector, and would support the Ministry's goal of achieving a rational exploitation of Viet Nam's fisheries resources in the future. It was thus formally agreed that the component's activities would be designed to: "Contribute to the management of fisheries activities in Viet Nam such that they would reap economic benefit without irreversible degradation of natural resources and environments."

Since VCOP is a law and policy project, the contribution was to be made at the policy level, as the MoF sought to develop its policy framework and legal tools to influence the sector in its new form and new activities. "Policy" was defined at the start of our work: "Policy relates to the articulation of an overarching set of objectives for the use and development of the fisheries resources in the national interest". This decided, it was agreed that VCOP activities would focus upon "policy" and "management" issues only, as efforts at high levels towards sustainable use now would affect later "development" activities.

To learn about current efforts to achieve sustainable development in the fisheries sector in the Southeast Asian context, the MoF proposed a study tour of neighbouring nations, reviewing the mechanisms for and content of fisheries policy development in those countries, with a particular focus upon resource conservation efforts. The primary

objective of the proposed tour was to sustain the MoF's analysis of living marine resource utilization trends in Viet Nam and in the region.

Exposure to the problems and successes of neighbours in sustainable development of fisheries would allow MoF staff to assess their previous stated policy objectives, and development trends in their own country, and to refine their policy development activities. High-level dialogues and exchanges of information between nations would be other beneficial outputs of such a tour. To design the tour with appropriate foci and materials, VCOP organized a "Component Scoping Mission" to Ha Noi and eight provinces in northern and southern Viet Nam in May, 1994, and interviewed representatives of central government, provincial and municipal government, and the marine research community, as well as primary producers, processors, exporters, and academics/NGO's.

This broad survey, with logistical and content support by the MoF, provided a valuable opportunity to analyze the evolving directions and dynamics of the fisheries sector in Viet Nam, and to identify critical policy needs for effective management. The Canadian team examined current fisheries resource use dynamics in Viet Nam, reported on its findings to the MoF, and developed a joint summary of the most pressing problems facing the sector.

From the findings of the scoping mission, both sides developed a set of "priority themes" to be examined in the countries to be visited (Thailand, Indonesia, and the Philippines) on the study tour: resource management, resource assessment, offshore fisheries development, fisheries statistics, mariculture, co-management. Two themes were selected for each of three countries. Lead by Vice-Minister Dr. Vo Van Trac, and hosted by the national fisheries department or ministry in each country, the "VCOP Regional Fisheries Policy Study Tour" was executed from Nov. 8 to Dec. 8, 1994.

The tour studied co-management efforts in Thailand, Indonesia and the Philippines. Following the tour, Vice Minister Trac supported further activities on this topic by the MoF and Dr. Ha Xuan Thong (Vice-Director, Institute of Fisheries Economics and Planning, MoF) has written a paper stating that co-management is now one of eight policy priorities for the MoF.

Further, it has been agreed that a fisheries component in the second phase of VCOP must address the conditions for effective coordination of effort between central, regional and local governments, with "Fisheries Services" offices, and with resource users (individuals and producers) to achieve the policy objectives of the MoF. It must thus focus upon the identification of legal, administrative and organizational conditions contributing to effective management, supporting a new and healthier relationship between the public (resource users) and the government agencies charged with fisheries management responsibilities. Emphases will include agency roles and capabilities at the provincial level, integrated local management, co-management models, etc. Links between coastal area management and MCS activities (monitoring, control, surveillance) will be another focus.

Further collaboration between MoF, ICLARM and VCOP II in fisheries component activities is also planned.

2. OVERVIEW OF TRAINING COURSE

2.1 Topic of the Training Course

Fisheries management regimes throughout the world are increasingly based upon a recognition that resource stability is directly linked to the social, economic, and environmental stability of coastal regions and communities. It is further accepted that resource stability can only be achieved by the development and adoption of more collaborative management approaches which involve resource users in efforts to limit resource extraction rates to sustainable levels.

Critically, both the state and individual resource users have an interest in maintaining the long-term viability of the available resources. These interests need not conflict and can often be mutually supportive. However, there must be a mutually beneficial and functional link between the state agencies with management responsibilities for that resource, and the local-level resource users. The challenge facing state-level managers of fishery resources in many jurisdictions is thus to develop their management and regulatory tools to work collaboratively with resource users.

Co-management regimes are now being developed which support this collaboration. Co-management is defined as "...the sharing of responsibility and authority between the government and local fishers/community to manage a fishery or other natural resource;...(where) a recognized group of fishers or an organization establishes and enforces community rules, norms and regulations for catching fish or using the resource, with support from the government..." (p. iv; Pomeroy, ICLARM Policy Brief, 1994).

The Ministry of Fisheries of Viet Nam, in reviewing its fisheries development policies and strategies, has accepted that co-management arrangements could contribute to the sustainable utilization of Viet Nam's living coastal resources.

2.2 Objective of the Training Course

The stated policy of the MoF is now that co-management arrangements may assist the MoF in its efforts to maintain the equilibrium between production, conservation and distribution objectives in its policy framework and activities; this equilibrium is seen as crucial to the future sustainable utilization of fisheries resources in Viet Nam. The activities of the training course, and its outputs, are expressly designed to assist the MoF to develop the co-management model as a strategy for its resource management responsibilities.

Following the recent completion of its fisheries component, the "VCOP" secretariat developed a sub-project entitled "Co-Management of Living Coastal Resources in ASEAN : Theory, Practice, and Implications for Viet Nam". The main objective of this

sub-project is to hold two training courses in Viet Nam to examine emerging models for increased public participation in living coastal resource management in the ASEAN region.

Intended to bridge the gap between fisheries component activities in VCOP I and II, these courses focus upon the potential utility of "co-management" arrangements (where resource users and government agencies collaborate and cooperate to manage resources) for living coastal resource management in Viet Nam. The first course was designed to introduce the concepts and practices of co-management, and to draw out the implications of this model and these practices for fisheries policy development in Viet Nam. The second will be designed to reflect the process and outcomes of the first and will be more applied.

2.3 Introductory Comments (Day One)

2.3.1. *Dr. Vo Tiem, Director, Institute for Fisheries Economics and Planning.*

A warm welcome is given to all course participants, resource persons and organizers by the organizing institute of the Ministry of Fisheries of Viet Nam. Vice Minister of Fisheries Dr. Vo Van Trac, General Director of the "Viet Nam Fishery Development Program", actively supports the concept and objectives of the training course.

The Ministry of Fisheries is very interested in the concept and practices of co-management of fisheries and other living coastal resources. Our greatest hope is for a full and useful exchange of information and experience on this concept and practices with regional experts through this training course, as well as the development of future relationships and joint work in this area for sustainable utilization of our resources. The Ministry of Fisheries would like to request further assistance of this sort on this topic in the future.

2.3.2 *Mr. Stephen Sandiford, Development Cooperation Advisor, Canadian International Development Agency (CIDA), Canadian Embassy.*

On behalf of the government of Canada, Mr. Bill Young of CIDA, and Ambassador Desloge, I wish you a warm welcome and thank you for allowing me to speak today. This training course focuses on issues which are of key importance to CIDA, both globally and in its Viet Nam country program. Environmental protection and conservation is a major activity for CIDA throughout the world. In Viet Nam, CIDA is providing "reform support" by working to strengthen Viet Nam's capacity to implement sound and environmentally sustainable policies. This course will contribute to the sustainable utilization of living coastal resources, as the participation of user communities in environmental management is key to sustainability both in Viet Nam and the world over.

Other Canadian initiatives in these areas include the "Viet Nam - Canada Ocean and Coastal Cooperation Program", the "Viet Nam Sustainable Development Program" (the environmental component of which supports a number of research projects including one on coastal resource management in Hue), and the "Viet Nam - Canada Environment Program" (which will assist at least two coastal provinces with pollution control).

The course also addresses other CIDA program priorities, including:

- assisting developing countries to meet their basic needs (i.e. food supply)
- good governance
- women in development (because women play a critical role in the fisheries sector)
- support for the private sector

In conclusion, this training course provides a valuable opportunity for thorough discussion of the concept and practices of co-management in the fisheries sector. It will assist Viet Nameese managers, researchers, and fisher communities to sustainably manage the living resources of the sea. Thank you to the organizers of the training course and good luck.

2.3.3 Dr. Ha Xuan Thong, Vice Director, Institute of Fisheries Economics and Planning; co-organizer of training course.

Introduction of attendees, resource persons, and organizing agencies. Overview of current conditions and trends in Viet Nameese fisheries, and review of his co-management research.

2.3.4 Vice-Minister of Fisheries, Dr. Vo Van Trac.

The Ministry of Fisheries (MoF) has reviewed its development strategies and policy objectives, and is trying to link its development strategies with issues of sustainability and resource protection. The priority for the MoF is thus to answer the following questions:

- How to manage resources for harmony between resource exploitation and resource conservation?
- What are the best methods, and how can MoF effectively manage resource exploitation and use its facilities and resources efficiently for the achievement of its more balanced development objectives?
- What kind of management arrangements and practices should the MoF use to adapt its policy and administrative practices to the idea of collaborative fisheries management or co-management or a "people's fishery" in these changing economic conditions?

The MoF urgently requests international friends and national fisheries experts to collaborate to answer these questions in the shortest time possible! The efficiency of MoF management is currently very low, and so we are seeking improved models for effective management. Better cooperation between the state and the local level actor or manager is the new model for fisheries management regionally, and this is one of our main interests.

This idea of close and effective collaboration between state and people is not totally new to us in Viet Nam. In fact, the motto of the Viet Nameese state is that of Ho Chi Minh, "for anything to be truly successful, it must be for and with the people"! Thus, it is and has been state policy that the state and the people will work together to achieve shared goals.

Co-management as a set of management practices to be supported by policy is recognized by the MoF as a progressive form of management with much utility in the Viet Nameese

context. It should be studied and then applied to the Viet Nameese fisheries in appropriate stages. The MoF now needs to more fully and practically understand what the appropriate stages and practices are to do this.

We have many questions to answer before we finally accept co-management as the answer to our current problems regarding over-exploitation of resources. We request the resource persons and the course attendees to please use the opportunity of the training course to ask and answer some of these questions. Think through the steps necessary for the application of the model in Viet Nameese context.

In summary, the assistance of Canadian experts through the VCOP process has lead to action and substantive analysis at the policy level over the past year. Now we want to achieve the objective of the VCOP process, which is to balance our policy objectives and decide how to begin to achieve those objectives. Please study and discuss the topic and material regarding co-management in this training course. The next step must be to start to do the work, including pilot sites, to develop co-management arrangements.

2.3.5 Mr. Hoang Ngoc Giao, Director, Centre for Oceans Research and Information (CORI), Continental Shelf Committee of Viet Nam (CSC).

Provided an overview of the objectives and structure of the Viet Nam - Canada Ocean and Coastal Cooperation Project (VCOP), and reviewed its various activities, partners, achievements, and future plans. Described the role and function of the CSC and CORI.

2.3.6 Mr. Ashley Bansgrove, ESSA Technologies, Hanoi.

Provided an overview of the work that ESSA has performed with the National Environment Agency under the terms of VCOP's "Marine Environment" component. Related quality of the marine environment to fisheries development as a whole, with a specific focus upon inshore fisheries and aquaculture. Contextualized the choices facing fisheries managers and coastal communities regarding resource use within national and regional economic development strategies with marine environmental impacts.

2.3.7 Mr. Vincent Verlaan, VCOP Fisheries Component; co-organizer of training course.

Provided a history of the VCOP Fisheries Component, detailing the dialogues between Canadian and Viet Nameese experts regarding sustainability in fisheries policy development. Reviewed the activities and objectives of the component "Scoping Mission" and "Regional Fisheries Policy Study Tour". Summarized the contribution that co-management arrangements could potentially make to MoF efforts to balance production, conservation, and distribution objectives. Framed the key questions that the training course should attempt to answer and provided a summary of the structure and objectives of the course.

2.3.8 *Dr. Robert S. Pomeroy; International Centre for Living Aquatic Resource Management; co-organizer of training course.*

Provided a thorough overview of the theory of co-management of natural resources, with a focus upon fisheries. Summarized the conditions existing in the Viet Nameese fisheries which make co-management an attractive and useful model. Formulated some questions for the participants to consider as they reviewed the experience of neighbouring countries in developing and implementing the co-management model. Summarized the activities of the "Worldwide Fisheries Co-management Research Project", and detailed proposed future activities at the local/community level and at the governmental/national level.

2.4 Process of the Training Course

Day one provided an overview of the theory of co-management of natural resources, with a focus upon living coastal resources, and with examples from Thailand and the Philippines. The topic was discussed in relation to the MoF's efforts to balance its policy objectives. At the end of day one, four leaders for each of the three working groups (coastal fisheries, aquaculture, marine protected areas) were elected, with two resource persons (one Southeast Asian, one Viet Nameese) and two Viet Nameese attendees per group of leaders.

Day two had resource persons making presentations during panels on the three topics, followed by open discussion periods. Leaders of the working groups then produced brief summaries of the theoretical and practical information provided, and summarized the discussions from days one and two.

Day three began with a plenary discussion (2 hours), followed by a breakup into working groups (4 hours), followed by a final plenary to discuss findings and to summarize recommendations for "next steps" (1.5 hours). The final meeting produced three issue papers with brief outlines of the relevant issues, needs, conditions, and next steps for each area of fisheries policy. These were summarized by the organizers, and the course closed.

The four documents produced at the training course were then presented by the organizers to Vice-Minister Vo Van Trac, and were discussed at some length. His closing comments are provided in section 4.1 of this report. Please see the annexes for a list of course attendees and resource persons, the full agenda of the training course, and collected papers.

3. OUTPUTS AND FINDINGS

3.1 Summary of Main Findings (of Three Working Groups and Plenaries)

- 1. All groups agree that co-management is a useful model for the achievement of balanced fisheries policy objectives and can make a substantial contribution to the goal of sustainable development of Viet Nam's fisheries sector.**
- 2. In particular, all groups agree that co-management can assist in achieving the sustainable utilization and extraction of fisheries resources. In particular, co-management offers a model for the reversal of the decline in the productivity of coastal and nearshore areas in Viet Nam.**
- 3. All groups agree that conditions, practices, attitudes and problems make the development of a co-management model and practices very attractive and appropriate.**
- 4. All agree that the MoF should support further research (and other activities) into the co-management model for the potential future development and utilization of co-management arrangements to achieve fisheries policy objectives.**
- 5. All agree that co-management arrangements and actions can substantially reduce government efforts and expenses in their resource management responsibilities and can achieve greater effectiveness.**
- 6. All find that it is now time to launch and support further activities to support the achievement of the above goals.**
- 7. Co management research and development must involve the joint participation of state managers, scientists, local government, community oriented groups, and fishers.**
- 8. Such research must focus upon a.) the relevant contributions and interactions between scientists, policy makers, local people, as well as b.) the evolution and construction of legal and administrative regimes to develop and sustain co-management arrangements.**
- 9. Must now formalize this consensus and take it to action studies; this requires a policy statement by policymakers to support the development of such research and action into co-management models and practices.**
- 10. Organize study tour to other countries to further study the model.**
- 11. Identify local sites appropriate for pilot sites/studies; these to exhibit various relevant socio-economic and environmental conditions within the country for co-management.**
- 12. Must develop an initial law and policy study for the application of co-management.**
- 13. Must develop a Master Plan at the national level for the application of co-management.**

3.2 Report of the "Coastal Fisheries" Group

1. Summarize discussions

- a. After three days of the training course the participants have very good information about the methods and principles of co-management from Thailand, Philippines and other countries. The participants can understand the new concept of co-management.
- b. Almost all the participants have observed that the coastal resources are degraded and in decline and there is an urgent need for a new approach to management.
- c. Exploitation & development of aquaculture in coastal areas is very high and unplanned.
- d. Co-management is the appropriate method to be applied to Vietnam and should be applied as soon as possible.

2. Conditions, needs and issues in Vietnam

- a. In Vietnam there are some procedures in the law and policy and in traditional aspects of life and fishing for applying co-management in fisheries.
- b. Vietnam has varying economic, social and environmental characteristics and conditions so there is a need to thoroughly study and apply co-management under the different regions and fisheries in the country.
- c. There is a law for land use in Vietnam but no clear law for use of coastal waters. This needs to be clarified and specified.
- d. The people need to know and to follow the co-management model because they need practical and effective methods for sustainable fisheries management and development. The practical side of co-management is very important.
- e. The implementation of co-management must be step-by-step from a local and specific focus to a wide and general focus. Need to select pilot sites for research and study.

3/4. Policy implications and recommendations

- a. Provide education, information, training to managers, researchers, fishers on co-mgmt.
- b. Identify the location appropriate for pilot sites based in the three regions - north, central and south - and on ecological and socio-economic conditions.
- c. Organize study tour in other countries on co-management for managers, researchers and fishers.
- d. Develop a law and policy study and master plan for applying co-management.

3.3 Report of the "Marine Protected Areas" Group

Conditions, Needs and Issues re: Co-Management and MPA's

- There is little consensus between government agencies and between users and communities regarding the utilization of coastal and marine environment and resources, both at high and local levels.
- Regulations for protection of marine resources such as protection during spawning seasons and at spawning ground already exist but cannot be enforced. So the selection of specific sites for concentration of enforcement to protect ecosystems and rare and endangered species will be beneficial.
- Although there are proposals from local scientists and provinces to establish MPAs, there is little capacity and understanding on how to implement the proposals.
- Knowledge and incentives on MPAs weak and are not standardized. Often the main objectives of MPAs seem to be economic benefit and relatively little focus has been placed on protection.
- Information basis on both natural and social sciences, especially on carrying capacity of resources, is insufficient for planning and management of MPAs.
- There is not yet any national document and policy on MPAs.
- There is not sufficient Master Plans that incorporate and support MPAs.
- There are government departments such as the Bureau for Protection of Marine Resources and other departments for fisheries extension which can be used as support and vehicle for development community based management of MPAs.
- Often employment opportunities during development is given to outsiders. This contradicts with the basis of Co-Management.

Implications of Co-Management

Co-Management is suitable and agreeable to the government to manage inshore resources providing that it does not contradict with governmental rights and land and marine tenure.

Co-Management can reduce government efforts in management of marine resources and MPAs.

Co-Management implementation has to take into consideration of local culture and practices which are extremely diverse along the coast.

Recommendations

Develop national policy on MPAs which is able to solve conflicts among government agencies and users through interdisciplinary exchange and consensus. Such policy should be developed in three lines: science, legal framework and community participation.

Activities and planning of MPAs should be incorporated into existing Master Plans. Future Master Plans should consider MPAs development.

Pilot projects need to be launched for convincing government and local communities the importance and benefits from MPAs in order to gain support for further development of a system of MPAs.

The role of scientists include further inventory and studies, monitoring of resources and management effectiveness in MPAs, and staff training. One major research direction should be focused on carrying capacity of resources within MPAs.

Ensure equal distribution of benefits among local communities involved in MPAs.

Organise training courses with emphasis on MPA management and interdisciplinary approach, both at central and local levels. Teaching materials to be translated into Vietnamese and distributed to attendee before the training course.

Organize training courses on eco-tourism, non-destructive fisheries and mariculture as alternative livelihood for fishermen dependent on MPAs. Teaching materials to be translated into Vietnamese and distributed to attendee before the training course.

Organize study tours to existing MPAs in neighbouring countries where Co-Management is practiced.

3.4 Report of the "Aquaculture" Group

Aquaculture workgroup

Principles and practices of Co-management

dr. Ngueng Hong Tri
Mr. Stefan Flos
dr. Khuong (RIMP)
dr. Nguyen Anh Tuan

Purpose is to contribute to the process of answering the question:

Can co-management assist to maintain the balance between production, conservation and distribution (...) which is crucial to sustainable utilization of resources:

HOW ??

How can policy support this.

Function of the working group is to focus the discussion.

Points raised and discussed and brainstorm

1. Co-management and fisheries in general context of overall policy/development;
2. What can the ministry of fisheries do (steps);
3. What can be done by the MoF related to aquaculture;

General question is WHAT IS CO-MANAGEMENT.

From the Philippine experience, NGO activity is very well established, but there are many problems. An overview was presented related to the process of Empowerment (among others). The issue of empowerment was explained and is an important aspect related to co-management.

Policy issues and policy INTENTION: the people who design the policy are not the people who have experience with or have to solve the problems in reality (in the area). Many projects fail because they do not take into account the consultation of the local communities concerned.

Hands on experience is essential and several pilot projects are undertaken to help develop policy guidelines. Multi-disciplinary team has been formed to provide contributions to the problems in the field: development oriented research: quality of life and the gap between rich and poor.

From the Thailand experience

Differences in Background of CRM and CoMan. Grass roots development needs to be sustained at the grassroots

Discussion with the working group

Comments for Co-management

1. It is thought that aquaculture in general would benefit from a co-management approach;
2. At the moment the communities do not have the right to decide on their own activities because a legal body and framework has not been established. Therefore it is difficult to share power with government organizations;
3. It is important and necessary to define/select a right (suitable, applicable) foundation related to the communities' livelihood (i.e. to define what a community is in legal, institutional context) so that power can be transferred more easily
4. The concept of co-management is quite new in Vietnam, but a traditional way of co-management used to be in existence. It is thought that training will be important to allow people to become aware again about their traditional concepts;
5. A trial is necessary to obtain to obtain experience from (both) parties concerned, i.e. government and people (communities) as a basis for a national plan.
6. Research is still needed in order to know clearly what kinds of living resources are available before choosing a program for co-management.

We have discussed about 4 major topics:

1. general (overall) Co-management aspects related to livelihood and fisheries;
2. Specific Aquaculture aspects of co-management;
3. The current basis of community development (how big are the communities at the moment (1 - 3 families small area of about 2-3 ha.)
4. How to make a first practical step in the direction of co-management.

Discussion of the working group on Aquaculture

Points discussed (this list may not be complete and might need to be reviewed by the working group or adjusted by the MoF for further use):

(this report is written by Stefan Flos (resource person) and reflect the discussion as it was perceived through translation and as written down at that moment. it does not intend to be complete and any mis-understandings are a result of this process ...)

1. Jef Hainsworth (Uni of Brit. Col), raised two points:
 - a. Model of Co-Management in Vietnam will be a model specific to Vietnam, and it will take time for it to develop. It would probably not be feasible to go directly to NGO's (example from Indonesia and the effective, single task NGO approach);
 - b. The importance of integration of Social Sciences with the Governmental and science

oriented research. The cultural diversity within Vietnam is typically very large and research should reflect the cultural and People diversity (holistic approach)

Moreover the projects boundaries are not limited to the coast or the coastal zone only and certain elements of the catchment area's (upper area's should be incorporated (pond aquaculture of hill minorities)

2. Percy Sajise: All ACTORS or stakeholders should be identified who are involved in the planning process, like different ministries, NGO's etc. The key actors should come together and It should be determined what the input is that should be directed to the local communities;

Exchange between upland and low land experiences could benefit the overall process

(Philippine experience);

3. (Vietnam Mr Dien RIA-3 Nhatrang) Good aquaculture management is important otherwise we put ourselves in a disadvantage. Three points:
 1. eco-system should be protected;
 2. Resources should be use sustainable;
 3. Pollution in the area should be prevented;

The past years the aquaculture activities have developed very rapidly. Problems arise over shrimpfeed production (fresh feed will lead to problems, processed food better).

The method of co-management would benefit the aquaculture. The scale of the community is not clear, 1, 3 or 10 households, it will depend on many factors.

A problem is that there is no clear plan for the direct future, but a clear policy from the government is needed, to guide community building and aquaculture practices.

An example is the planning of irrigation system (ex. project 372) this is more easy to implement when there are no people yet and after completion allocate the land, difficult if they are there already.

Unplanned development in the coastal zone is very fast and unplanned.

4. (Vietnam Mr. Tiem (IFEP, MoF)) Related to models for Co-Management should relate to 6 models according to 6 types of ecosystem:
 1. Bays - Island;
 2. Lagoon area (14 lagoons; over exploited);
 3. Estuaries and tidal streams (12 estuaries);
 4. Mangrove forest;
 5. Reservoir areas in highlands;
 6. Flood plain area's and delta.

This might be difficult at first but is important in the long run.

Related to the households, 2 or 3 is probably too small but family factors should be taken into account.

5. (dr. Jef) Local research capacity should be considered to allow for growing local problem solving capacity. In this way when new problems arise they can be solved locally. National research does not have the capacity to focus on specific local problems.

6. (...)

- prevent collapse of shrimpfarming / aquaculture;
- what is the objective of aquaculture; local or international market.

For minority people self sufficiency is very important. (example of VAC system and the IDRC system in Thailand (collapse by over utilisation).

7. (Vietnam Mr. KHUONG (RIMP)): The co-man approach is similar to the co-operation approach from the past. Now there are different objectives. The communities who work under a co-management system, together with the government could be based on the traditional (existing communities, maybe small) and a new system of Cooperative. The people should enjoy more benefits in the new cooperative.

It is important to design a new planning system and scientist and technical people should assist in advise to the people so they can have the benefits (based on a homogenous basis).

The policy process should be aimed to establish a new set of rights and responsibilities of the people and the government (key issues).

8. (Vietnam dr Tri) Integration of Social Scientists and other scientists is important to link University with Government. Several research steps are important:

1. Research on regulations and policies (policy frame work);
2. Resources utilization and users (rights), and levels of policy (higher levels and lower levels, area of attention);
3. Pilot models and projects;
4. Draw lessons and feedback to (1).

Lessons should be learned from each step and not only at the END. Social sciences should be integrated related to Gender issues, religion, culture and other matters.

9. (Thailand Niti): Aquaculture not only influences the fysical environment (pollution) but also the social environment (income distribution). What is shrimpfarming for, if it will not benefit the poor people (they have to buy drinking water now).

10. (stefan) comment on the question if Co-Management can solve the pollution problems:

Co-management should be regarded as a system that is designed to PREVENT large problems to develop and to have a short line between problem and cause and so more local solutions can be found to solve small problems.

Related to the size of the community we discussed in the morning the Natural community vs a designed community. The natural community might still be very small in Vietnam (2 - 3 families/households) but it can grow naturally. Policy can help to grow and strengthen community and assist in stranger links between communities (usually it is a group of communities (villages) that share a common resources like a bay, coastal strip, lake or estuarine).

11. A short summary was presented.

4. RECOMMENDATIONS

4.1 Final Comments, Vice-Minister Vo Van Trac

Quote: "Ministry participants attentively followed the activities of the three day "fisheries co-management" training course. Very positive that there were very lively discussions following all of the lectures and presentations by resource persons.

In the Ministry's opinion, the most important question discussed is what model should be developed and applied in Viet Nam. The draft report you have given the Ministry at the end of the training course, and its recommendations, represents a useful concentration of the knowledge, thoughts, and discussions of the various resource persons and attendees.

It is crucial that the partners in these discussions on policy now have further discussions of the findings and outputs of this training course, and that we develop a plan of action to develop useful co-management activities. We have many questions as co-management is something of a new model, but the model is not completely new to Viet Nam.

After having reviewed the experience of our country and that of others, we can say that we should and can have government policies to support co-management and/or community-based resource management in our country. This is fundamentally because the objective of these models is the sustainable and healthy use of our living marine and coastal resources and this is the goal of our Ministry.

However, while we are now accepting of the model, we do not have specific policies or mechanisms to implement activities under the model. We need to quickly develop and implement policies, decisions, and action programs on these topics which are well suited to the prevailing conditions and factors in our country. We must now work together with our foreign colleagues to develop a step-by-step action plan from this point forward which will help us to achieve the goal of sustainability.

The main goal at the beginning of our work on this topic must be to improve the knowledge of our staff and the people regarding the objectives and practices of co-management. There are various ways to improve this knowledge:

- develop better materials to improve conceptual understanding
- relate the concept more fully to Viet Nameese conditions
- execute the second training course
- develop a staged program to choose and develop three pilot sites
- study the lessons from the pilot sites, making some conclusions and recommendations
- integrate these into new policies following discussions in a seminar
- extend the sites for the use of co-management and continue studies
- recommend to the MoF and the state as to the new form policies and laws with regard to the implementation of co-management should take

In launching these activities, there should be cooperation and coordination between donors and neighbouring countries who have this topic as one of their interests in partnership with Viet Nam. The "Institute for Fisheries Economics and Planning" will be the Ministry of Fisheries body serving as point of contact for these efforts and will build upon its work on this topic with ICLARM and VCOP to date.

The Institute will assist the Ministry on this topic by gathering some specialists to implement the co-management pilot sites. We will also have some of the training course participants involved so as to make use of their learning. This will be the best way to ensure that our long-term collaboration on this topic will be sustained and successful.

The Ministry of Fisheries wishes to thank the training course organizers, the resource persons, and the course attendees for their efforts on this important topic. The Ministry looks forward to accepting the final report from the first training course, and to the development of a plan of action following the recommendations as above and as otherwise contained in the final report."

4.2 Further Activities

With the active support of the MoF, design activities for the second training course are now underway. Materials for this more focused and applied course will be developed through a partnership between selected Viet Nameese and regional resource persons over the next few months. The second training course will be given twice in late 1995, once in northern Viet Nam and once in southern Viet Nam.

The organizers of the course agree with the MoF that further activities on this topic should follow the recommendations of the working groups. Therefore, the organizers will work with the MoF to develop the following activities over the next six to twelve months:

1. Selection of, Formal Recognition of, and Funding for Pilot Sites for the Establishment of Co-Management Activities in Coastal Fisheries (including Marine Protected Areas) and Aquaculture
2. Training Course Planning Workshop and Material Preparation Mission
3. Second Training Course
4. Initial Law and Policy Project
5. Study Tour of Regional Activities in Co-Management
6. Workshop to Examine Possibilities for Further Development of Co-Management Arrangements in Viet Nam's Fisheries Sector

It is hoped that further activities can also be developed on this topic, growing out of the recommendations of the working groups from the first training course. Course organizers will actively seek support from various sources for funds to support such activities.

5. ANNEXES

5.1 Agenda for Training Course #1 (May 15-17, 1995) *"Principles and Practices of Co-Management"*

Location: Headquarters, "Ministry of Fisheries of Viet Nam", Ha Noi
Organizers: Ministry of Fisheries S.R.V., VCOP, ICLARM.

DAY ONE (08:00 - 09:00) Registration Period

(09:00 - 12:00) "Introduction; Theory of Co-Management"

1. Dr. Vo Tiem
Mr. Stephen Sandiford
Dr. Ha Xuan Thong
Vice Minister Vo Van Trac
Mr. Hoang Ngoc Giao
Mr. Ashley Bangrove
Mr. Vincent Verlaan
Welcome address from organizing Institute of MoF
Address re: CIDA environmental goals in Viet Nam
Introduction of attendees, resource persons
Discussion of co-management model for Viet Nam
Overview of VCOP project
Review of marine environmental issues in Viet Nam
VCOP Fisheries Component; training course goals
2. Dr. Bob Pomeroy
Overview of theory of co-management of natural resources (with focus on fisheries)

****Coffee Break (15 minutes)****

3. Dr. Ha Xuan Thong
Participation in ICLARM worldwide research project, results of socio-economic studies in coastal communities in Viet Nam

****Lunch (12:00 - 1:30)****

(13:30 - 15:45) "Southeast Asian experience with concept of Co-Management"

1. Lecture A: Dr. Percy Sajise, SEARCA, Los Banos, the Philippines
"The Evolution of National Policies Towards Resource Management at the Local Level in the Philippines"
2. Lecture B: Dr. Kungwan Juntarashote, Fac.of Fisheries, Kasetsart University, Thailand
"Development of Community-Based Fishery Management in Thailand with the Advent of a National Fishing Rights System"

****Coffee Break (15 minutes)****

(16:00 - 17:00) Open Discussion; Selection of Three Working Groups

"Trends Towards Co-Management in Southeast Asia and Implications for Viet Nam"

"Principles and Practices of Co-Management"

DAY TWO

(09:00 - 12:00) "Practices of Co-Management in Southeast Asia"

1. Lecture D: Renato Agbayani, SEAFDEC, Ilo-Ilo, Philippines
"Coastal Resource Management at the Local Level"

****Coffee Break (15 minutes)****

2. Lecture E: Niti Ritibhonbhun, Stefan Flos, Dr. Nguyen Anh Tuan
*"Aquaculture Development : National Policies, Extension Services
and Community Organization for Sustainable Development"*

****Lunch (12:00-1:30)****

(13:30-15:00) "Practices of Co-Management in Southeast Asia - Continued"

1. Lecture F: Dr. Nguyen Chu Hoi, Ms. Catherine Cheung, Dr. Vo Si Tuan
"Marine Protected Areas : Co-Management in Service of Conservation"

****Coffee Break (15 minutes)****

(15:15 -17:00) Open Discussion; Meeting of Working Groups

*"Implications of Co-Management Models For Coastal Fisheries,
Aquaculture, and Marine Protected Areas in Viet Nam"*

"Principles and Practices of Co-Management"

DAY THREE

(09:00 - 12:00) **"Implications for Viet Nam, and Recommended Actions"**

1. Plenary A: Dr. Bob Pomeroy, Hoang Ngoc Giao, Dr. Ha Xuan Thong
"The Role and Responsibilities of Government in Co-Management"

2. Discussion: *"Towards Co-Management in Viet Nam's Fisheries Policy?"*

****Coffee Break (15 minutes)****

3. Working Groups: *Attendees and Resource Persons in three groups to continue discussion and begin to summarize theory, practice and implications of co-management model for Viet Nam's fisheries sector; prepare summary and recommended next steps for afternoon report to Vice-Minister of Fisheries*

****Lunch (12:00 - 1:30)****

(13:30 - 17:00) **"Implications for Viet Nam; Recommended Actions - Cont."**

1. Working Groups: *"Working Session to Produce Three Working Group Reports and Prepare Recommendations List"*

2. Final Plenary: *"Report Presentation and Recommendations; Produce Summary"*

3. Final Session: *"Closing Ceremony: present Summary Report, Working Group Reports, and proposed Action Plan to Vice-Minister Vo Van Trac"*

5.2 LIST OF RESOURCE PERSONS AND PARTICIPANTS

Training Course Resource Persons:

1. Renato Agbayani, Associate Scientist
Southeast Asian Fisheries Development
Center (SEAFDEC)
Aquaculture Department
5021 Tigbauan, Iloilo
Philippines
Tel: (63-33) 271-009
Fax: (63-33) 271-008
2. Ashley Bangrove, Viet Nam Manager
ESSA Technologies Ltd.
Viet Nam Project Office
12B4 Ngo Ba Trieu
Ha Noi, Viet Nam
Tel: (84 4) 227704
Fax: (84 4) 228329
E-mail: essa@netnam.org.vn
3. Catherine Cheung
Marine Specialist
Asian Bureau of Conservation
18E Capital Building
175-191 Lockhart Road
Wanchai, Hong Kong
Tel/Fax: (852) 2598 6960
Tel/Fax: (852) 2834-2189
E-mail: cath@hk.super.net
4. Stefan Flos
P.O. Box 27 Dindaeng
Bangkok, Thailand 10407
Tel/Fax: (66-2) 642-8971
E-mail: flosterfn@ksc.net.th
5. Hoang Ngoc Giao
Continental Shelf Committee
103 Quan Thanh Street
Ha Noi, Viet Nam
Tel: (84 4) 258241, ext. 3879
Fax: (84-4) 236920
6. Dr. Nguyen Chu Hoi
Director
National Centre for Natural Science and
Technology of Viet Nam
Haiphong Institute of Oceanology
246 Da Nang Street
Haiphong City, Viet Nam
Tel: (84-31) 46523
Fax: (84-31) 46521
7. Kungwan Juntarashote, Associate
Professor
Department Chairman
Department of Fisheries Management
Faculty of Fisheries
Kasetsart University
Bangkok 10900, Thailand
Tel: (66-2) 5611947
Fax: (66-2) 5795579
8. Robert Pomeroy,
Research Scientist, Fisheries Economics
Coordinator, Asian Fisheries Social
Science Research Network
International Centre for Living Aquatic
Resources Management (ICLARM)
3rd Floor, Bloomingdale Building
205 Salcedo Street, Legaspi Village
Makati, Metro Manila 1200
Philippines
Tel: (63-2) 818-5255, 818-9283,
817-5255, 817-3183
Fax: (63-2) 816-3183
E-mail: iclarm@cgnet.com
(CGNET) ICLARM;
(SCIENENET) ICLARM.MANILA
9. Niti Rittibhonbun
Department of Aquatic Science
Faculty of Natural Resources
P.S.U. hat Yai 90112
Songkhai, Thailand
Tel: (6674) 211030; 212845
Fax: (6674) 212823

10. Percy Sajise, Director
SEAMEO Regional Centre for
Graduate Study
and Research in Agriculture (SEARCA)
College, Laguna 4031
Philippines
Tel: (63-2) 2576, 2290, 2380 (Los
Banos Line)
Fax: (63-2) 8170598
E-mail: 5305740
11. Dr. Ha Xuan Thong, Deputy Director
Institute of Fisheries Economics and
Planning
57 Ngoc Khanh
Ba Dinh, Ha Noi, Viet Nam
Tel: (84-4) 345674; 325303
Fax: (84-4) 254702; 325303
12. Vo Si Tuan
Deputy Head
Dept. of Marine Living Resources
Institute of Oceanography
01 Cau Da Street
Nha Trang, Viet Nam
Tel: (84-58) 81153
Fax: (84-58) 81152
13. Nguyen Anh Tuan
Head, Department of Aquaculture
Cantho University, Viet Nam
Tel: (84-71) 30961; 20237
Fax: (84-71) 22101
Liaison Office
03 Cong truong Quoc Te
Dist. 1, Ho Chi Minh City
Tel: (84-8) 291244
14. Vincent Verlaan, Research Associate
Centre for Asian Legal Studies
Faculty of Law
1822 East Mall
Vancouver, B.C. Canada V6T 1Z1
Tel: (604) 822 9319
Fax: (604) 822 9317
E-mail: verlaan@unixg.ubc.ca

Training Course Attendees:

1. Dr. Vo Van Trac
Vice Minister, General Director of
Viet Nam Fishery Development
Programme
Ministry of Fisheries
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 254714
Fax: (84-4) 254702
2. Dr. Ta Quang Ngoc
Vice-Minister
Ministry of Fisheries
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 354513
Fax: (84-4) 254702
3. Dr. Ho Van Hoanh
Director, International Cooperation
Ministry of Fisheries
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 256396-75; 254709
Fax: (84-4) 254702
4. Dinh Trong Thai
Deputy Director
Department of Science & Technology
Ministry of Fisheries
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 346270
Fax: (84-4) 254702
5. Nguyen Van Chau
Deputy Director, Department of Fisheries
Management
Ministry of Fisheries
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 54714(24), 351663
Fax: (84-4) 254702

6. To Viet Chau
Ministry of Fisheries
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 254714
Fax: (84-4) 254702
7. Le Nguyen Can
Deputy Director
Institute of Fisheries Economics and
Planning
Ministry of Fisheries
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 345674
Fax: (84-4) 254702
8. Nguyen Trong Binh
Deputy-Chief of Cabinet
Ministry of Fisheries
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 256344
Fax: (84-4) 254702
9. Dao Van Thien
Deputy Director
Fisheries Resources & Environmental
Conservation Department
Ministry of Fisheries
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 351759
Fax: (84-4) 254702
10. Bui Ding Chung
Research Institute of Marine Products
Ministry of Fisheries
170 Pho Le Lai
35000 Hai Phong, S.R. Viet Nam
Tel: (84-31) 46664
Fax: (84-31) 45153
11. Dr. Vo Tiem, Director
Institute of Fisheries Economics and
Planning
57 Ngoc Khanh
Ba Dinh, Ha Noi, Viet Nam
Tel: (84-4) 345674; 325303
Fax: (84-4) 254702; 325303
12. Dr. Doan Canh, Director
Institute of Ecology and Biological
Resources
85 Tran Quoc Toan
Dist. 3, Ho Chi Minh City
Viet Nam
Tel: (84-8) 298540
Fax: (84-8) 298546
13. Dr. Tran Quoc Tri
Historian
Institute for Southeast Asian Studies
National Center for Social Sciences and
the Humanities (NCSSH)
27 Tran Xuan Soan
Ha Noi, Viet Nam
Tel: (84-4) 261628; 261629
Fax: (84-4) 259071
14. Dr. Nguyen Hoang Tri
Deputy Director
Viet Nam National University, Hanoi
Mangrove Ecosystem Research Centre
91 Nguyen Khuyen Street
Ha Noi, Viet Nam
Tel: (84-4) 269044
Fax: (84-4) 256562
15. Dr. Ton That Phap
Head of Botanical Section
The University of Hue
Department of Biology
27 Nguyen Hue Street
Hue, Viet Nam
Tel: (84-54) 22934
Fax: (84-54) 24901

16. Nguyen Hung Dien
Vice Director
Institute for Aquatic Products Research
No3
33 Dang Tat Street
Nhatrang, Viet Nam
Tel: (84-?) 31136
17. Nguyen Thi Phi Yen
Director
Haiphong Export Seaproducts Processing
Company
13 Vo Thi Sau Street
Haiphong City, S.R. Viet Nam
Tel: (84-31) 46732
Fax: (84-31) 45121
18. Tran Duy Diep (NCSSH)
Human Ecology Geographical Engineer
Ministry of Transport
Highway No. 1 Project Management
Unit
187b Tay Son Street
Dong Da, Ha Noi, Viet Nam
Tel: (84-4) 511601
Fax: (84-4) 521013
19. Nguyen Duy Thieu (NCSSH)
Doctor of Ethnology
Institute for Southeast Asian Studies
27 Tran Xuan Soan
Ha Noi, Viet Nam
Tel: (84-4) 261629
Fax: (84-4) 259071
20. Ngo Van Tien
Investment Adviser
Viet Nam Fisheries Association
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 254714 (66)
Fax: (84-4) 254702
21. Nguyen Huu Ninh
Chairman
Center for Environment Research
Education & Development (CERED)
A01, K40 Giang Vo
Ha Noi, Viet Nam
Tel: (84-4) 514842
Fax: (84-4) 515213
22. Nguyen Thi Hai
Director
Center for Environment Research
Education & Development (CERED)
A01, K40 Giang Vo
Ha Noi, Viet Nam
Tel: (84-4) 351842
Tel/Fax: (84-4) 345213
23. Luu Van Huan
Head of Information - Publication
Institute of Ecological Economy
Van Mieu - Quoc Tu Giam
Ha Noi, Viet Nam
Tel: (84-4) 264560; 252592
24. Pham Gia Truc
National Professional Officer
FAO Representative
Food and Agriculture Organization of the
United Nations
3 Nguyen Gia Thieu Street
Ha Noi, Viet Nam
Tel: (84-4) 57208/57239
Fax: (84-4) 259257
25. Nguyen Thanh Tung
National Programme Officer
United Nations Development Program
(UNDP)
25 - 29 Phan Boi Chau
Ha Noi, Viet Nam
Tel: (84-4) 257495
Fax: (84-4) 259267

26. Tran Huu Cuong
Director, Department of Planning and
Investment
Ministry of Fisheries
57 Ngoc Khanh - Badinh
Ha Noi, S.R. Viet Nam
Tel: (84-4) 254711
Fax: (84-4) 254702

27. Nguyen Van Ngan

28. Nguyen Tan Trinh

29. Pham Nhat Thanh

30. Cao Tuy

31. Nguyen Hong Viet

Training Course Observers:

1. Gary A. Vigers
CEA Project Director
ASEAN-Canada Cooperative Programme
on Marine Science - Phase II
EVS Consultants
195 Pemberton Avenue
North Vancouver, B.C.
Canada, V7P 2R4
Tel: (604) 986-4331
Fax: (604) 662-8548

2. Geoffrey B. Hainsworth
Professor of Economics
Associate, Centre for Human Settlements
Associate, Institute for Asian Research
Department of Economics
University of British Columbia
997-1873 East Mall
Vancouver, British Columbia
Canada V6T 1Z3
Tel: (604) 822-3222
Fax: (604) 822-5915

3. Niels Richter
Counsellor
19 Dien Bien Phu
Ba Dinh, Ha Noi
Viet Nam
Tel: (84-4) 234148
Fax: (84-4) 231999

4. Per-Anders Eriksson
First Secretary
Programme Officer Forestry,
Environment Development Cooperation
Embassy of Sweden
So 2 Pho 358
Van Phue, Ba Dinh
Ha Noi, Viet Nam
Tel: (84-4) 254824
Fax: (84-4) 232195
E-mail: periksson.dcovie@sida.se

Fisheries Co-management and Small-scale Fisheries: A Policy Brief.

ROBERT S. POMEROY
AND
MERYL J. WILLIAMS

1994

Published by the International Center for Living Aquatic
Resources Management, MCPO Box 2631, 0718
Makati, Metro Manila, Philippines.

Printed in Manila, Philippines.

Pomeroy, R.S. and M.J. Williams. 1994. Fisheries co-
management and small-scale fisheries: a policy
brief. International Center for Living Aquatic
Resources Management, Manila. 15 p.

Contents

Executive Summary	iv
Introduction	1
The Search for Better Management Methods	2
Managing the Commons	4
Fisheries Co-management	6
Key Conditions for Successful Fisheries Co-management	11
Conclusion	13
References	14
Acknowledgements	15

Executive Summary

Co-management is defined as the sharing of responsibility and authority between the government and local fishers/community to manage a fishery or other natural resource. Co-management covers various partnership arrangements and degrees of power-sharing and integration of local- and government-level management systems. It may involve recognition and legitimization of traditional local-level management systems. It involves some degree of communal management of the resource. That is, a recognized group of fishers or an organization establishes and enforces community rules, norms and regulations for catching fish or using the resource, with support from the government.

Given the different conditions, processes, needs and demands within the small-scale fisheries sector, there is no simple management solution appropriate for every community, region or nation.

As a fisheries management strategy, co-management shows promise for addressing many of the issues of sustainability, efficiency and equity that exist in small-scale fisheries today.

The advantages of co-management, versus a centralized, top-down approach, could include lower management and enforcement costs, improved data reliability, a higher degree of acceptability and compliance with management measures, greater participation of fishers in management, and improved social cohesion and community development. Co-management is not, however, a panacea for fisheries management. The development of co-management systems is not automatic or simple; it can be costly to establish, require a long-term effort and have limited guarantee of success. Government administrative arrangements and fisheries laws and policies will generally require restructuring to support co-management.

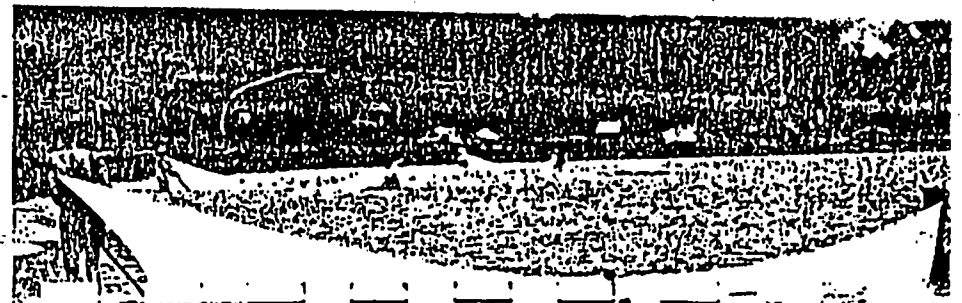
Fisheries Co-Management and Small-scale Fisheries: A Policy Brief

Introduction

Global-scale changes in the supply, demand, value, management and uses of fisheries resources could threaten progress towards sustainable food security in many parts of the developing world, but could also stimulate improved management and use of the resource. Decisionmakers are searching for better ways of managing all fisheries including small-scale ones.

This policy brief addresses some of the issues and options available arguing that recent lessons point to potential benefits in some fisheries from management partnerships between the government and local fishers and communities - fisheries co-management. The trend to give formal involvement of users in management of resources was recognized in many chapters of the United Nations Conference on Environment and Development (UNCED) Agenda 21 Declaration and are enshrined in such international instruments as the International Convention on Biological Diversity ratified in 1993. This policy brief cautions, however, that co-management is not a universal panacea and more experience and research are needed to learn about the conditions leading to successful fisheries co-management.

In the developing world, 14 to 20 million people are directly involved in fisheries and aquaculture; 50 million if postharvest handling and marketing are included; and about 1 billion rely on protein from aquatic products as their main source of animal protein. The resource



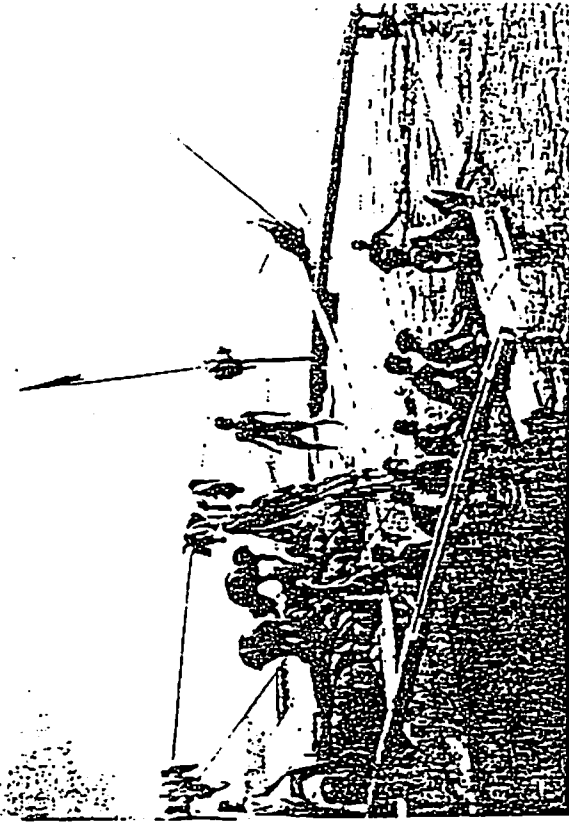
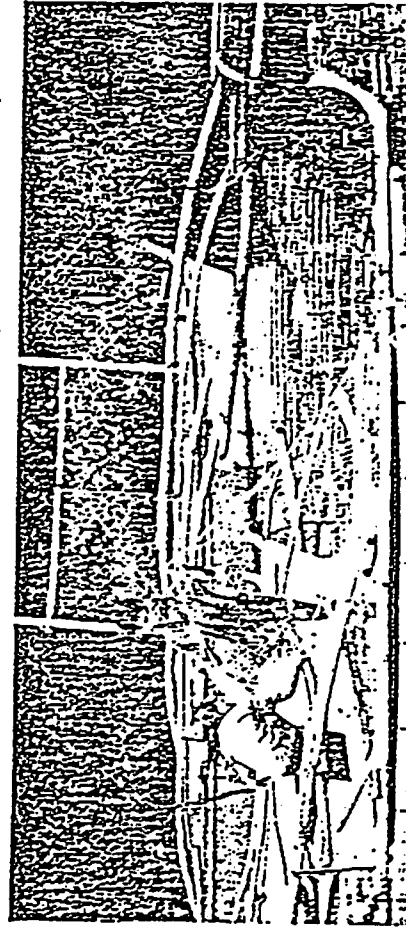
which is perceived as severely depleting natural fish populations. Harvesting of these resources has expanded over the last four decades but has now reached its upper limits and is even declining in many cases. Therefore, as human populations continue to increase, supply per person is starting to fall and will keep falling despite modest gains from aquaculture in some countries. Increasing competition for scarce resources will further stress fisheries management systems.

In most societies, small-scale fishers suffer the greatest deprivations as they have low social status, low incomes, poor living conditions and little political influence. They frequently compete for resource access with larger-scale fishers and other sectors of the economy. Small-scale fisheries are embedded in larger aquatic resource, and in social, economic and political systems. Many of the solutions to improving their standard of living lie outside the fisheries sector.

To prevent further degradation of fisheries resources, there is an imperative for better management. Many present fisheries resource management arrangements have failed to coordinate and restrain the many users, leading to depleted resources and conflict. Resource conflicts may be diminished, management better implemented and resources better managed when fisher and other user groups are more involved in the management of resources.

The Search for Better Management Methods

Fisheries management experts recognize that the underlying causes of fisheries resource overexploitation and coastal environmental degradation are often of social, economic, institutional and/or political origins. The primary concerns of fisheries management, therefore, should



address the relationship of fisheries resources to human welfare; address the conservation of the resources for use by future generations. That is the main focus of fisheries management should be people, not fish per se. Policy interventions, if they are to bring about lasting solutions, must address these concerns.

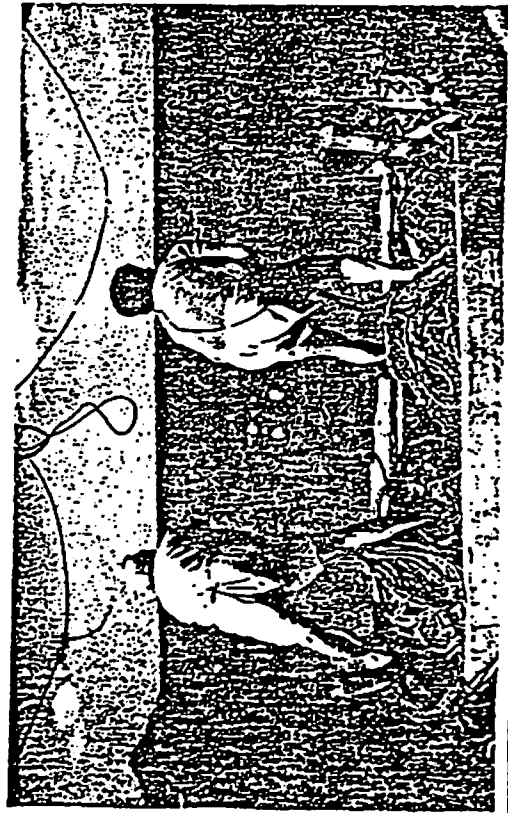
Fisheries management in many countries has been heavily influenced by the temperate scientific model of calculating maximum sustainable yield of a few key fish species and of the need for central administrative authority. This model has been shown to have limited applicability in multispecies tropical/subtropical fisheries. It also provides for little or no effective consultation with or participation from fishers. Fisher participation in management can provide a wealth of local or indigenous knowledge to supplement scientific information, to help monitor the resource and improve overall management.

Fisheries managers now recognize that a fishery cannot be managed effectively without the cooperation of fishers to make laws and regulations work. Fisheries management abounds with laws, rules and regulations in most countries; many of them are quite specific and unintended. However, the effective capacity of many fisheries agencies to regulate what goes on in widely scattered, often isolated fishing grounds, is distinctly limited. Under these conditions, the delegation of fisheries management and allocation decisions to the local fisher and community level may be more effective than the management effort which is distant, understaffed and underfunded national government fisheries management effort.

Managing the Commons

The "commons" include natural resources, such as fisheries, wildlife, forests, irrigation waters and pasture lands, which by their physical nature are not owned by individuals but are shared by a community of producers (e.g., fishers) and consumers. "Common property resources" share two important characteristics. The first is excludability or the control of access. The physical nature of the resource is such that controlling access by potential users is a problem and may be costly. For example, migratory fish species present problems for regulating access to fishing. The second characteristic is subtractability; that is, the fish harvesting activities of one fisher subtracts from or lowers the catch per unit of fishing effort of other fishers. The term "common property regime" is used to describe the system of property rights and rules under which the common property resources may be managed. Common property regimes aim to provide assurance that the resources on which all persons collectively depend will be available sustainably. In many parts of the world, rights to common property resources are all that separate the poor from destitution. Thus, development planners must eventually deal with the issue of institutional arrangements for property rights and rules over natural resources.

The "commons" has come to connote inevitable resource degradation. Many accepted that fishery resources which are held in common are often subject to overexploitation and degradation. They incorrectly identified all common property situations as being those in which entry into the fishery is uncontrolled, with no effective boundaries



around the resource, and no restrictions on how the resource is to be exploited. This situation is more correctly classed as an open access fishery. This popular notion of the nature of common property resource is misleading and has led to inappropriate policy recommendations and project implementation in the fisheries sector. Policy recommendations have often focused on how to create individual property rights rather than on how to limit access. Common property management where joint rights exist is a legitimate form of management and can be successful access is controlled. Many government management arrangements fail to conceive of or recognize the existence of local community-based fisheries management (CBFM) institutions which could effectively manage common property fisheries resources.

Common property regimes are forms of management grounded in a set of individually accepted rights and rules for the sustainable and interdependent use of collective goods, that is, a resource that is managed and controlled by a group. Such a regime is composed of a recognized group of users, a well-defined resource boundary that the group uses and manages, and a set of institutional arrangements (rights and rules) for the use of the resource. Common property represents private property for the group of co-users. These regimes have been shown to develop when a group is highly dependent on a resource and when availability of the resource is uncertain or limited. If resource availability problems are repeatedly experienced, such as low or no catches, and if it is controlled by a single community of users, the fish are likely to develop collective arrangements to deal with the problem.

The principal problem faced by group members of a common property regime is how to organize themselves. That is, how to change from a situation of independent action to one of collective action and coordinated strategies to obtain greater joint benefits and reduce joint harm. A sense of commonality, commitment and compliance must be established for the collective good. Problems on the allocation of catch and assigning duties for resource use must be overcome.

Common property regimes can be very effective at controlling access to the resource. Most common property regimes are based upon the exclusion of certain potential users. The entire community, sensu security of tenure and enjoying some of the benefits from access control will actively take responsibility for monitoring and enforcement.

The establishment of common property regimes is a complex process that cannot be done solely by administrative decree. It must take into account general factors and their local context such as the nature

the resource; the characteristics of the users of and stakeholders in the resource; the characteristics of the legal, political and institutional environment in which the users reside; and external economic forces which shape resource use.

Fisheries Co-management

Common property regimes offer some insights into how fisheries might be better managed but, except in isolated cases, they cannot offer a complete solution since the theoretically ideal situation for common property management is not obtained and fishers therefore cannot manage fisheries entirely by themselves.

As fisheries were developed over the last four decades, most countries increased the role of the national government in managing fisheries; the role of local level control through traditional management and control has correspondingly diminished. National governments often failed to develop an adequate substitute for or complement to the traditional resource management regimes. Policies of nationalization or privatization have not solved the resource overexploitation and degradation problem, and in many instances, may have deprived many small-scale fishers of their livelihoods.

In many cases, what is needed now is a more dynamic partnership using the capacities and interests of the local fishers and community, complemented by the ability of the state to provide enabling legislation, enforcement and other assistance. This approach to fisheries management will require a shift away from a centralized, top-down form of management to a new strategy in which fisheries managers and the fishers jointly manage the fisheries - "co-management" (Fig. 1).

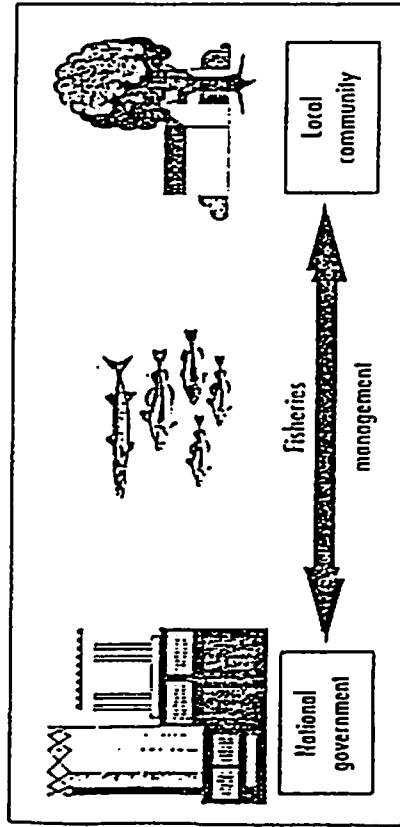


Fig. 1 Fisheries co-management

Co-management is defined as the sharing of responsibility and authority between the government and local resource users/communities to manage the fishery or resource (e.g., coral reef, mangrove shore habitat). There is a hierarchy of co-management arrangements (Fig. 2) from those in which the fishers are consulted by the government to regulations are introduced to those in which the fishers design, implement and enforce laws and regulations with advice from the government. The amount of responsibility and/or authority that the government and various local levels have will differ and depend upon country- and site-specific conditions. Determining what kind and how much responsibility and/or authority should be allocated to the local level is a political decision.

Given the different conditions, processes, needs and demands within the small-scale fisheries sector, there is no simple management solution appropriate for every community, region or nation. Co-management should not be viewed as a single strategy to solve all the problems of fisheries management. Instead, it should be seen as a

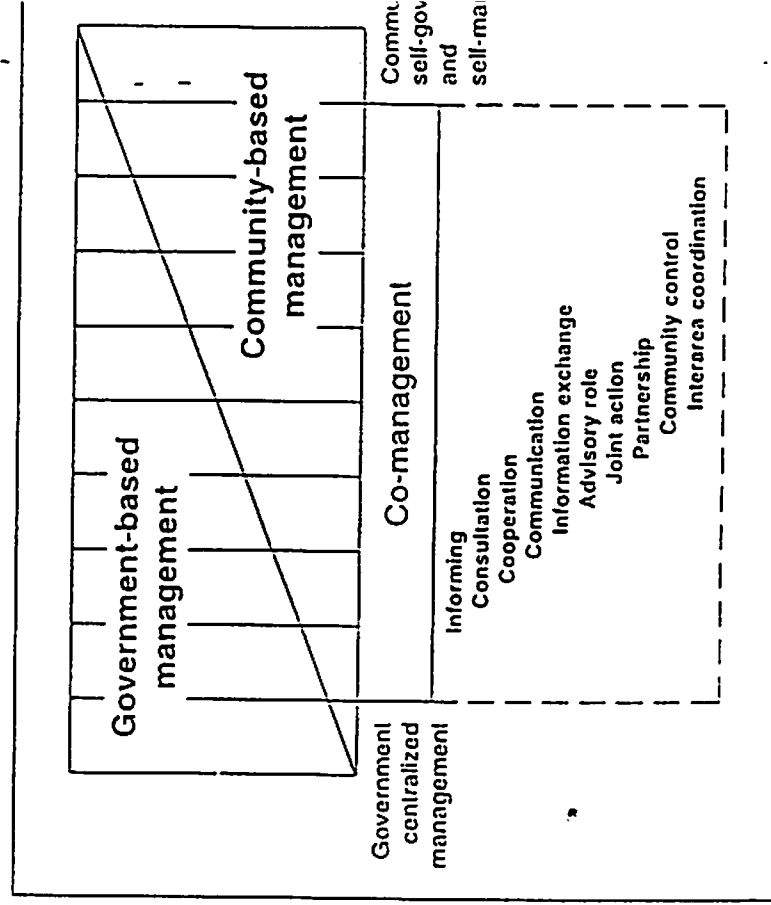


Fig. 2. A hierarchy of co-management

alternate management strategies, appropriate for certain areas and situations. The establishment and successful operation of fisheries co-management can be a complex, costly and multiyear effort.

Co-management involves various degrees of delegation of management responsibility and authority between the local level (resource user/community) and the state level (national, provincial, municipal government). Co-management is a middle course between state-level concerns in fisheries management for efficiency and equity, and local-level concerns for self-governance, self-regulation and active participation. Co-management can serve as a mechanism for both fisheries management and community and economic development by promoting participation of fishers and the community in actively solving problems and addressing needs.

In some cases, co-management may be simply a formal recognition of a system of fisheries management which already exists. Informal and customary community-based management strategies already exist side-by-side with formal state-level management strategies.

Community-based resource management (CBRM) is a central element of co-management. The advantages of CBRM systems have been well documented in various parts of the world. The better known of these initiatives have been in irrigation and social forestry but similar approaches are being applied in upland agriculture and wildlife. CBRM tends to be more difficult due to the complexity of fisheries and aquatic resource systems, the social and cultural structures of fishing communities, and the independent nature of fishers. Recent research in small-scale fisheries in Asia, the South Pacific and Africa have shown, however, that communities of fishers, under certain conditions, can manage fisheries resources sustainably.

CBFM, through co-management, strives for more active fisher participation in the planning and implementation of fisheries management. The theme of CBFM is that self-involvement in the management of the resource will lead to a stronger commitment to comply with the management strategy and sustainable resource use.

The potential advantages of CBFM include effectiveness and equity. It can be more economical in terms of administration and enforcement than centralized systems. It involves self-management where the community takes responsibility for a number of managerial functions. It provides a sense of ownership over the resource which makes the community more responsible for long-term sustainability of resources. Fishers are given incentive to respect the rules because they

complement cultural values and because they are seen as individual and mutually beneficial. CBFM allows the community to develop a management strategy which meets its own particular needs and conditions. Since the community is involved in the formulation and implementation of management measures, a higher degree of acceptability and compliance can be expected. CBFM makes maximum use of indigenous knowledge and expertise to provide information resource base and to complement scientific information for managers. Its strategies can minimize social conflict and maintain or improve cohesion in the community.

CBFM may not be suitable for every fishing community. Many communities may not be willing to take or capable of taking on the responsibility of CBFM. A long history of dependency on government may take years to reverse. Leadership may not be available within the community to initiate or sustain the CBFM efforts. For many communities, the incentive(s) - economic, social and/or political - to engage in CBFM may not be present. The risk involved in changing fisheries management strategies may be too high for some communities and fishers. The costs for individuals to participate in CBFM strategies (time, money) may outweigh the expected benefits. Sufficient political will may not exist among the local resource stakeholders or in the government to actually manage the fisheries in a responsible and sustainable manner. Actions by user groups outside the immediate community may undermine or destroy the management activities undertaken by the community. Particular resource characteristics, such as fish migratory patterns, of the area may not make it possible for the community to manage the resource.

The delegation of significant authority to manage the fisheries is one of the most difficult tasks in establishing co-management



is. When governments are reluctant to cede for some community involvement, they must also establish commensurate rights and authorities and devolve some of their own powers. Fisheries

administrators may be reluctant to relinquish their authority or parts of it. They may fear infringement by local fishers and their representatives on what they consider their professional and scientific turf. In all cases co-management, the ultimate authority is held by the government.

The issues are not easily resolved. Each policy bearing on co-management is embedded in a broader network of laws, policies and administrative procedures, at both national and local government levels, and consequently will be difficult to change. The role of the government in co-management is to provide enabling legislation to facilitate and support the right to organize and make fisheries management arrangements at the local level, address problems beyond the scope of local arrangements, and provide assistance and services to support the maintenance of local arrangements. Government administrative and fisheries laws and policies will, in most cases, require restructuring to support decentralization and co-management. The actual form of co-management will depend upon the form of government and the political will for decentralization.

Other than fishers, resource users that derive economic benefit from the resource (e.g., fish traders, business suppliers, police, politicians, consumers) will also need to be considered in the co-management arrangements. These stakeholders often hold considerable political influence in the resource management regime.

Key Conditions for Successful Fisheries Co-management

Over the last decade, research done at different locations around the world has documented many cases of co-management and community-based management in fisheries and other natural resource systems. From the results, certain conditions are emerging which appear to be central to the chances of developing and sustaining successful co-management arrangements. These conditions should not be taken as complete as research is continuing to reveal more about the systems and the factors for successful performance. Indeed, more research is required to establish evaluative criteria for such outcomes as sustainability, equity and efficiency of fisheries co-management systems. Among the emerging conditions for successful co-management are that the more of these conditions that exist in a particular situation or system, the greater the chance for successful co-management.

The key conditions are (Ostrom 1990, 1992; Pinkerton 1989):

1. *Clearly defined boundaries:* The physical boundaries of the area to be managed should be distinct so that the fishers group can have accurate knowledge of them. The boundaries should be based on an ecosystem that fishers can easily observe and understand. It should also be of a size that allows for management with available technology, i.e., transporation and communication.
2. *Membership is clearly defined:* The individual fishers or households with rights to fish in the bounded fishing area and participate in area management should be clearly defined. The number of fishers or households should not be too large so as to restrict effective communication and decisionmaking.
3. *Group cohesion:* The fisher group or organization permanently resides near the area to be managed. There is a high degree of homogeneity, in terms of kinship, ethnicity, religion or fishing gear type, among the group. Local ideology, customs and belief systems create a willingness to deal with collective problems. There is a common understanding of the problem and of alternative strategies and outcomes.



4. *Existing organization:* The fishers have some prior experience with traditional community-based systems and with organizations, where they are representative of all resource users and stakeholders interested in fisheries management.

5. *Benefits exist:* Individuals have an expectation that the benefits to be derived from participation in and compliance with community-based management will exceed the costs of investments in such activities.

6. *Participation by those affected:* Most individuals affected by the management arrangements are included in the group that makes and can change the arrangements. Decisions about management arrangements are made by the same people that collect information on the fisheries.

7. *Management rules enforced:* The management rules are simple. Monitoring and enforcement are able to be effected and shared by all fishers.

8. *Legal rights to organize:* The fisher group or organization has the legal right to organize and make arrangements related to its needs. There is enabling legislation from the government defining and clarifying local responsibility and authority.

9. *Cooperation and leadership at community level:* There is an incentive and willingness on the part of fishers to actively participate, with time, effort and money, in fisheries management. There is an individual or core group who takes leadership responsibility for the management process.

10. *Decentralization and delegation of authority:* The government has established formal policy and/or laws for decentralization of administrative functions and delegation of management responsibility and/or authority to local government and local group organization levels.

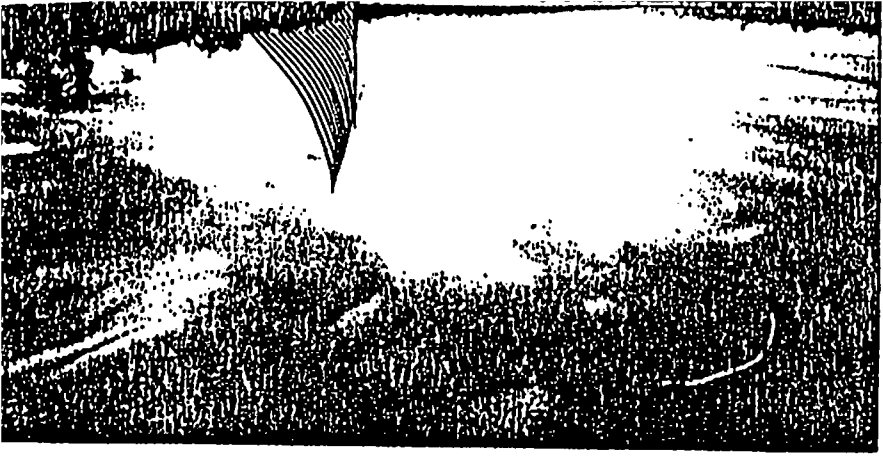
11. *Coordination between government and community:* A coordinating body is established, external to the local group or organization and with representation from the fisher group or organization and government, to monitor the local management arrangements, resolve conflicts, and reinforce local rule enforcement.

Conclusion

The idea of active participation of local resource users and communities in development and management is not a new one; it has been part of the development process since the 1960s. What is different is the increasing commitment of governments to programs of decentralized co-management. Fisheries co-management aims specifically at achieving the sharing of authority and/or responsibility between government and local fishers and the community to manage fisheries.

Co-management systems that have arisen around the world show promise for addressing many of the issues of sustainability, equity and efficiency that exist in small-scale fisheries management today. Co-management is only one alternative fisheries management strategy that has recently emerged. Others include territorial use rights and area leasing. Co-management is an alternative that requires compromise and respect and trust among all parties involved. Its potential advantages and disadvantages are well documented. The development of fisheries management systems is not automatic or simple, nor is its survival guaranteed.

Co-management is a political issue. The local fisher and community and the government will have to be restricted. Co-management addresses the critical management issues of who controls the rights the fishers and who obtains the benefits from these. More experience and information are needed to learn about the conditions leading to successful fisheries co-management.



References

- Berkes, F. 1994. Co-management: bridging the two solitudes. *North. Perspect.* 22(2-3): 18-20.
- Berkes, F., P. George and R.J. Preston. 1991. Co-management: the evolution in theory and practice of the joint administration of living resources. *Alternatives* 18(2): 12-18.
- Bromley, D.W., Editor. 1992. *Making the commons work*. Institute of Contemporary Studies Press, San Francisco, USA.
- Bromley, D.W. and M.M. Cernea. 1989. The management of common property natural resources: some conceptual and operational fallacies. *World Bank Discuss. Pap.* 57. World Bank, Washington, D.C., USA.
- Dyer, C.L. and J.R. McGoodwin, Editors. 1994. *Folk management in the world's fisheries: lessons for modern fisheries management*. University Press of Colorado, Niwar, USA.
- Hviding, E. and E. Jul-Larsen. 1993. *Community-based resource management in tropical fisheries*. Centre for Development Studies, University of Bergen, Norway.
- Jentoft, S. 1989. Fisheries co-management: delegating government responsibility to fishermen's organizations. *Mar. Policy* 13(2): 137-154.
- Korten, D.C. 1986. Community-based resource management, p. 1-15. *In* D.C. Korten (ed.) *Community management: Asian experiences and perspectives*. Kumarian Press, West Hartford, Connecticut, USA.
- McGoodwin, J. 1992. The case for co-operative co-management. *Aust. Fish.* (May): 11-15.
- Ostrom, E. 1990. *Governing the commons: the evolution of institutions for collective action*. Cambridge University Press, Cambridge, England.
- Ostrom, E. 1992. *Crafting institutions for self-governing irrigation systems*. Institute for Contemporary Studies Press, San Francisco, USA.
- Pinkerton, E., Editor. 1989. *Cooperative management of local fisheries*. University of British Columbia Press, Vancouver.
- Pomeroy, R.S., Editor. 1994. *Community management and common property of coastal fisheries in Asia and the Pacific: concepts, methods and experiences*. ICLARM Conf. Proc. 45, 189 p.

Acknowledgements

This policy brief was prepared as part of the Danish International Development Agency-funded Fisheries Co-management Research Project. This project is a collaboration among ICLARM, the Nordic Centre, Hirtshals, Denmark, and national research partners in Asia and Africa. The paper benefited from the useful comments of Sten Svendsen, Jensen, Jesper Raakjaer-Nielsen, Fikret Berkes, John Dillon, John McManus and Richard Pollnac. Thanks to Tambuyog Development Center, Quezon City, Philippines, for photos.

COMMUNITY BASED RESOURCE MANAGEMENT IN THE PHILIPPINES: PERSPECTIVES AND EXPERIENCES*

by

PERCY E. SAJISE

Director

SEAMEO Regional Centre for Graduate Study and
Research in Agriculture (SEARCA)

I. INTRODUCTION

It took some time for human society to realize that the issues of environment and development are linked together. This is especially true for our countries in Asia and the South Pacific where, most often, this realization is overwhelmed by issues of poverty, political instability, short term economic gains and inequity of access to resources. But this is also true for developed countries where this realization has been constrained by the "technological fix syndrome" and the dominance of conventional less environmentally-oriented economics and policy analysis for decision making. The later also provided, more often, the negative environmental link between the so called developed/ industrialized and developing/less industrialized countries of the world. A common factor, however, that served as a barrier to the internalization of the relationships between environment and development for both the developed and the developing nations of the world is the lack of understanding and appreciation of the complex nature of environmental problems and that environmental problem analysis and generation of options for its solution would require new approaches and methodologies.

Today, the environmental problems of deforestation, pollution, improper land use, deterioration of aquatic resources, soil erosion, declining agricultural production and biodiversity and undermining of local institutions and knowledge in support of environmental integrity generally prevails in Asia and the South Pacific. In some cases, the grim aspects of nuclear pollution and prospects of rising sea level in the future also haunts some places in the South Pacific and island countries in Asia. It became a common realization, except probably for those

*Paper presented during the training course on "Co-Management of Living Coastal Resources in ASEAN: Theory, Practice and Implications for Vietnam" sponsored by ICLARM and the NCSS, 15-17 May 1995, Hanoi, Vietnam.

who are victims of poverty and hunger whose concerns are immediate and who are confronted with limited options, that sustainable development could not be realized with continuing environmental deterioration and something must be done to reverse the process. It is in this context that I truly believe our work on community-based resource management will be a key factor in reversing this process within the context of burgeoning human population exerting more pressure on dwindling resources in our regions.

II. COMMUNITY-BASED RESOURCE MANAGEMENT (CBRM)

The development paradigm which supports the top down approach has been left by the "wayside" in the course of time. CBRM will be broadly defined in this paper as a process by which the people themselves are given the opportunity and/or responsibility to manage their own resources, define their needs, goals and aspirations, and to make decisions affecting their well being. CBRM as an approach emphasizes a community's capability, responsibility and accountability with regard to managing resources. CBRM also implies that people have access to and control over resources and that they too have knowledge, expertise and technology to productively manage the resources. It is inherently evolutionary, participatory and locale-specific and considers the technical, socio-cultural, economic, political, and environmental factors impinging upon a given community. CBRM is basically seen as community empowerment for resource productivity, sustainability and equity.

III. Why CBRM?

For centuries, resource management in the Philippines is strongly centrally-determined, top down and non-participatory. The Philippine Constitution and various PD's including PD 705 or the Revised Forestry Code generally defines control, management and goals in the utilization of the country's natural resources. Major features of these provisions are the following:

- the state generally is the steward and, therefore, allocates and manages our natural resources through existing Bureaus and Departments;
- natural resources utilization should benefit citizens of the country both of the present and future generation; and
- ecological, cultural, and developmental considerations are taken into account in the utilization of our natural resources.

The various provisions in our Constitution builds in the concern for generating inter and intra-generational and continuing benefits from our natural resources. The right of every Filipino to enjoy a productive and wholesome environment is also guaranteed by our Constitution as stipulated in Article II Section 16. However, the present state of our environment and various life support systems has brought about grave concern and alarm. At the global level, the Earth

Summit of 1992 in Rio de Janeiro sent a message to the world that without a better environmental stewardship, development will be undermined, and without accelerated development in poor countries, environmental policies will fail.

Sajise et al. (1992) in a report covered by the U.P. Assessments on the State of the Nation described the state of our environment as follows:

The state of our environment is already critical as indicated by the following facts:

1. The forest cover of the country is only 20.5 percent today compared to 57.3 percent 90 years ago. To regenerate enough forest cover to bring it back to the same level would require 177 years at present rate and efficiency of reforestation.
2. Agricultural production efficiency for important grain crops (rice and corn) have been going down since 1985. This is because of expansion into marginal lands as a result of land conversion and lack of access to lowland production areas of upland migrants. Decline in agricultural efficiency is also a result of degradation of the agricultural resource base due to degradation of the soil resource base, pest incidence and chemical pollution. This is very profound as 58.2% of our total population and 65% of the rural population is directly or indirectly dependent on agriculture for employment and livelihood.
3. The rich freshwater endowment of the country is fast deteriorating. For example 40 rivers (including all rivers of Metro Manila) out of 384 river systems are now considered biologically dead due to pollution; 480,802 hectares of freshwater areas are affected by saltwater intrusion.
4. The coastal habitat and resources has also considerably declined. Coral reef destruction is up to 70 percent in extent, mangrove areas have been reduced to only 30 percent (139,725 has) and seagrass communities have been destroyed. This coastal resource destruction and improper fishing methods have resulted in the decline of overall fisheries production. Sustainable yield limits for fisheries may have been exceeded already.
5. In urban and settlement areas, the growth of human population in areas, the growth of human population in areas of comparatively small sizes and the lack of a planning framework upon which to base development have led to incompatible and inappropriate land uses which in turn have become the main cause of environmental deterioration such as water pollution, problems of waste disposal, deteriorating health and nutrition status of people and created magnified natural disaster impacts (enviromagnification).

The deterioration of our life support systems is expected to be exacerbated in the following decades by the following forces:

1. High foreign debt burden;
2. Poverty;
3. Rapid population growth;
4. Inequity;
5. Weak institutional capacity;
6. Lethargy of local communities;
7. Stagnant economy; and
8. Non-responsive political system

In accordance with definition of sustainable development, the present trend of the capacity of life support systems in the Philippines will not allow the country to pursue a pathway of sustainable development. Exacerbation of this condition is also predictable if present trends will continue.

Zosa-Feranil (1992) predicts a low population estimate of 91 M and a high estimate of 110 M Filipinos by the year 2010. If poverty, inequity, weak institutional capacity to protect the environment together with a high foreign debt burden will continue to prevail in the next decade, the Philippines will be following a course of unsustainable development accompanied by the prospects of low level of quality of life for our people.

It has been realized, therefore, that current trends in the use of resources to achieve sustainable development is untenable and that alternative methods offer chances of reversing this trend. Consequently, there has been a shift to forward-looking policies and strategies that advocate community-based initiatives to rehabilitate, conserve and protect the resources based on enhancement of local knowledge and skills responsibility and accountability.

IV. CBRM Programs

The number of programs and projects which have been implemented or are currently being undertaken in the Philippines which employ CBRM indicate its viability as a strategy for sustainable development. This approach is being used in the sectors of forestry, fishery, mines, irrigation and lakes (Fellizar, 1993).

A. Forestry Sector

Prior to 1987, the provisions in the Philippine Constitution puts full responsibility in the management of natural resources under the care of the State. With the ratification of the 1987 Philippine Constitution, some changes of state policies with regards to the use and disposition of natural and forest resources came into effect. Some of the important changes are policies relating to rights of people to a healthy environment, equitable distribution of opportunities and benefits from natural resources as well as rights of indigenous cultural communities. Another basic policy relating to CBRM is Presidential Decree No. 705 or the Revised Forestry Code of the Philippines which provides and requires the proper management of occupancy within forest lands.

People-oriented forestry programs only started in the early 1970's to the early 1980s (Serna, 1993). This was effected in recognition of the failure of punitive measures to arrest shifting cultivation and the realization that shifting cultivators can instead be partners in development.

Programs in CBRM from 1974-1981 are the following: Forest Occupancy Management, Citizen Tree Planting, Communal Tree Farming, Family Approach to Reforestation and Industrial Tree Plantation. In 1982, all these programs were consolidated into an Integrated Social Forestry Program (ISF) which provided security of land tenure in the form of a Certificate of Stewardship Contract for 25 years renewable for another 25 years for forest occupants residing in these areas prior to December 31, 1981.

Encouraged by some positive indications of reversal in the destructive attitudes of forest occupants towards the forest with the implementation of the ISF, the National Forestation Program (NPF) which contracts reforestation projects to individual farmers and communities, the Communal Forest Management Program (CFP) with tenurial security instruments were additionally implemented. These Forestry CBRM include: (1) community organizing and training, (2) contract reforestation, (3) upland development, (4) sustainable forest utilization, (5) timber stand improvement, (6) assisted natural regeneration, (7) forest protection and conservation; and (8) development of livelihood systems.

Some major problems presently encountered in the implementation of Forestry CBRM are:

- (a) Low levels of skills, capabilities and inappropriate attitudes of ISF personnel, as well as NGO contractors
- (b) Unrealistic targets and inadequate funding
- (c) Lack of coordination among involved government agencies
- (d) Selling of Certificate of Stewardship Contracts
- (e) Communities are not properly organized

B. Fishery Sector

The evolution of CBRM and Co-management in the Fishery Sector is well described by Muñoz (1993) and Pomeroy (1995).

Community authority and fishing rights were strong during the pre-colonial years but were replaced by strong municipal government control during the Spanish and American periods of occupancy. This was reinforced by Presidential Decree 704 or the Fishery Act of 1975.

The impetus which brought about the need for greater involvement of local communities in the management of fishery resources was the enactment of the Local Government Code (LGC) of 1991 which devolved to local governments the responsibility for the delivery of certain basic services that formerly belonged to the sectorally-oriented national line agencies. Earlier, however, the Department of Agriculture have launched the Fishery Sector Program (FSP) in 1987 which was funded by ADB and OECF. FSP focused on coastal fisheries, aquaculture and offshore and EEZ waters. Among others, support policies for FSP included decentralizing management of nearshore fishery resources to municipalities and local fishing communities as well as promoting community-based initiatives to rehabilitate, conserve and protect the coastal resources and to diversify the source of income of small scale fisherfolk toward other income opportunities. NGO's will be engaged to assist and undertake community organizing.

Fishery co-management is also embodied in the current Medium Term Development Plan (1993-1998). Community-based management of fishery resources will be further bolstered by the impending Fisheries Code proposed in the legislative branch of the present government.

C. Irrigation

The National Irrigation Administration (NIA) is mandated as the national agency to promote the development of projects to supply irrigation water to farms by virtue of Republic Act No. 3601 enacted in June 22, 1963. During the next 10 years after its establishment, NIA focused on physical construction and yet it was the maintenance and operation (O & M) which were the principal problems encountered. In an attempt to solve the problem, NIA evolved an institutional development scheme for mobilizing the active participation of irrigation water users in 1968. The users were involved in project identification, planning, construction, operation and maintenance. The success of this approach was largely because of the promulgation of supportive policies - amendment to Presidential Decree No. 552 which empowered NIA to carry out the "delegation of the partial or full management of national irrigation systems to duly organized cooperatives or association" (Galvez, 1993).

The participatory approach became very successful in the communal irrigation system and this experience was transferred to the National Irrigation System.

The implementation of this approach has shown that the following could be achieved (Bagadion, 1990)

- o more responsible irrigation associations,
- o increased counterpart contribution of farmers
- o acceptance of completed facilities and financial obligations
- o better canal maintenance
- o more collections of fees
- o less water conflicts and
- o greater acceptance of O & M responsibilities

At present, more and more Irrigators Associations are engaged in undertaking cooperative projects beyond O & M responsibilities.

D. Mining Sector

The inclusion of Small Scale Mining (SSM) approach in developing the Mining Industry in the Philippines is well described by Muyco et al (1993).

Recognition of the importance of SSM first caught attention of government when during early 1980's SSM were proliferating throughout the country while large scale mining was finding it hard to survive. SSM has a shorter development. It is estimated that capital invested in SSM nationwide is smaller than an equivalent large scale mining at the time that most big mining were failing. It is also less sensitive to international economic pressures. Problems on operation, sanitary and environmental pollution must, however, be addressed appropriately.

Policy support for SSM were provided by Presidential Decree No. 1899 promulgated in 1984 which simplified procedures for obtaining SSM permit and Republic Act No. 7076 promulgated in 1991 which created the People's Small Scale Mining Program.

V. CBRM Lessons

The implementation of CBRM projects in the Philippines has provided various perspectives and lessons (Fellizar, 1993). For example, the key elements essential to the CBRM approach are the following:

1. The role of community organizing involves putting up the necessary organizational structure, as well as in improving the communities capacity to manage their affairs;
2. It focuses on opportunities for improvement while paying attention to community tradition;
3. Change agents are viewed as enabler-facilitators;
4. A major goal should be to improve decision-making capacity of the community which involves increasing options while reducing risks.

There are at n least 5 principles associated with CBRM strategies such as;

- o As a process
- o As a participatory approach
- o Concerned with conservation and Sustainable Use of Resources
- o Linking Local and Policy Levels
- o Providing Necessary Incentives

CBRM to be effective must be necessarily anchored on peoples' needs, capacity and that financial, technical and educational inputs must be compatible with the needs and capacities of communities.

A landmark legislation, the LGC, passed by the Philippine congress in October 10, 1991 provides the legislative backing for the full implementation of CBRM by Local Government Units. However, the capacities of LGU's must be increased to fully make use of the legislative powers provided to them to implement CBRM (Brillantes, 1993).

In all cases, CBRM strategies can only be implemented if the needed policy support are also provided.

REFERENCES

- Bagadion, B.U. 1990. The NIA Experience in the Participatory Approach, NIA-Ford Foundation Program, NIA, Quezon City, Philippines.
- Brillantes, A.B. Jr. 1993. The Philippines Local Government Code of 1991: Issues and Concerns in the Environment Sector. ERMP, College, Laguna, Philippines. 59 pp.
- Fellizar, F. Jr. 1993. Community-Based Research Management: Perspectives, Experiences and Policy Issues. ERMP, College, Laguna, Philippines.
- Galvez, J.B. 1993. Community-Based Resource Management: Perspectives Experiences and Policy Issues Related to Irrigation. In: Community-Based Resource Management: Perspectives, Experiences and Policy Issues, Fellizar J.P. Jr (Ed), pp. 103-108, College, Laguna, Philippines.
- Munoz, J.C. 1993. Community Based Resource Management as an Approach for Implementing Coastal Resources Management Component of the Fishery Sector Program. In: Community-Based Resource Management: Perspectives, Experience and Policy Issues, Fellizar, F.P. Jr. (Ed), pp. 82-89. College, Laguna, Philippines.
- Pomeroy, R.S. 1995. Co-Management Institutions for Sustainable Fisheries Management in Southeast Asia. Paper prepared under the Auspices of the ICLARM North Sea Centre Collaborative research project on Fisheries Co-management projected funded by DANIDA.
- Sajise et al. 1990. U.P. National Assessment Project. State of the Philippine Environment. U.P. Press.
- Serna, C.B. 1993. Community-based Resource Management: Perspectives, Experiences and Policy Issues Related to Forestry and Upland Development. In: Community-Based Resource Management: Perspectives, Experiences and Policy Issues, Fellizar, F.P. Jr. (Ed), pp. 64-81. College, Laguna, Philippines.

POSSIBLE DEVELOPMENT OF COMMUNITY BASED FISHERY MANAGEMENT IN THAILAND WITH THE ADVENT OF THE FISHING RIGHTS SYSTEM

KUNGWAN JUNTARASHOTE
DEPARTMENT OF FISHERY MANAGEMENT
FACULTY OF FISHERIES KASETSART UNIVERSITY
BANGKOK 10900 THAILAND

1. INTRODUCTION

Marine fishery is the mainstay of the Thai fishery industry. For the last two decades it has created employment, provided a supply of good quality animal protein for Thai people. Furthermore, the country has earned foreign exchange amounting to more than 3,000 million US\$ a year through exports, and many linkage industries have been created as well.

Before the Second World War, Thai marine fishery was treated as traditional fishery which employed mainly stationary gear, i.e., bamboo stake trap, other traps, and hook and line. Moreover, most of the fishing boats were non-powered. Therefore, marine fishery production in those days yielded around 100 thousand MT only, although the fisheries resources were very rich. Indo-Pacific mackerel was the main species caught (Hongkul, 1985).

Soon after the Second World War, trawl fishery was introduced to Thai fishermen by Japanese and Taiwanese fishermen but owing to the low demand for demersal fish in Thailand at the time, trawl fishery could not develop. However, in the 1960s, the trawl fishery was again developed and demersal fish became acceptable to the Thai consumers. The fishing technology was developed rapidly and the number of fishing boats increased. This resulted in overexploitation of the fisheries resources in Thai waters in the 1970s.

2. Problems of Thai Marine Fishery

The fisheries resources of Thailand are treated as common property, anyone can take benefit from these resources. They are, therefore, heavily exploited by fishermen who employ various types of fishing gear. Arising from the development of Thai marine fishery in the last three decades, many severe problems now exist in the industry. The two most severe problems are as follows:

a. The fisheries resources depletion problem.

This is the most severe problem of marine fishery. The study on catch per hour of otter board trawl in the Gulf of Thailand has shown the rapid decreasing trend since 1971. The catch per hour was 297.6 kg in 1971, then decreased to 100.3 kg in 1981 and it was only 54 kg in 1985 (Phasuk, 1987). Furthermore, the catch composition of marine fishery products is mainly trash fish, this being around 40 per cent of the total

(Juntarashote, 1994). These figures indicate that the fisheries resources in Thai waters are being overfished and the fish stock is depleting.

b. The conflicts among fishermen problem.

This results from the above problem. Owing to the limited fisheries resources, the fishermen who employ different types of fishing gear and use the same fishing ground, compete with each other in exploiting the resources. This leads to conflicts among the fishermen in using the resources, for instance, conflicts between trawlers and gill netters; trawlers and traps; anchovy fishery and purse seiners; and the most dramatic case is the conflict between small-scale fishery and industrial fishery. This problem is becoming a serious problem because the number of cases and their degree of conflict are increasing day by day.

In the next decade, if these two problems can not be solved the marine fishery industry of Thailand may collapse.

3. Fishery Management Programme

The Department of Fisheries (DOF) has realized the above problems, hence, many fishery management measures have been implemented for recovering the fisheries resources. The main measures are as follows:

a) Area and Seasonal Closures

This measure is mainly aimed to recovering of the Indo-Pacific mackerel (*Rastrelliger brachysome* Bleeker) which is an important economic species of Thailand. In the early 1980s the total catch of this species showed a declining trend. Therefore, to renew the resource abundance of this species and other pelagic fish as well as the demersal stock, various regulations on area and seasonal closures have been practised from 1984. From 1 February to 31 March and 1 April to 15 May, the trawlers and purse seiners with mesh size smaller than 4.7 cm have been prohibited from fishing in the upper southern area of the Gulf of Thailand.

b) Gear Restriction

In order to preserve the coastal fisheries resources, the trawlers and push netters are not allowed to operate within 3,000 m from shore. Because these gears are considered to be destructive in that they catch a big amount of trash fish, more than half of which are juveniles of economic species. Furthermore, these gears disturb the sea bed, resulting in a decline of fisheries resources.

c) Limited Entry

Owing to the limited fisheries resources, in 1980, the DOF made an announcement regarding the registration of trawlers and push netters in an attempt to control the number of these gears. No more licences will be issued to fishing vessels. Only the fishermen who have fishing licences can apply for an annual extension of their fishing licences. Licences will not be granted in cases of gears having been changed. The fishing licences are non-transferable to other operators except when these are fishermen's children.

Although these measures have been implemented for more than a decade, the fisheries resources unable to recover to a satisfactory level for the following reasons:

1) The number of staff and patrol boats for law enforcement is limited compared with the coastal length of 2,614 km and the huge number of fishing boats that operate various types of fishing gear.

2) The collaboration by fishermen is limited. As mentioned above, fisheries resources are treated as common property, they do not belong to anyone. Hence, the fishermen are not willing to give collaboration to the DOF for the fishery management programme. They just want to catch as much as possible each day because they believe that if they follow the fishery management programme they will be the losers. The fishery management programme of the DOF is always faced with difficulties in implementation.

3) The law enforcement cost is very high. The construction and operation costs of patrol boats are considerable, the DOF provides quite a big budget for them each year but it is still inadequate. Furthermore, it is doubtful whether the benefit from the recover of fisheries resources can meet the cost of law enforcement.

4) The DOF is not the only agency implementing fishery management programme. There are other Departments, for instance, Department of Police, Royal Forest Department, Department of Harbour, etc., concerned with the programme. Thus, it is very hard for the DOF to implement any measures efficiently. For example, the DOF wants to stop the construction of new fishing boats due to the limitation of fisheries resources but in practice the Department of Harbour is the only agency that has authority to control the construction of any boat in the country.

Thus, in order to solve the problems of marine fishery, Thailand must seek other alternatives of fishery management. The community based fishery management may be the answer.

3. Community Based Fishery Management: the other alternative.

The failure of the fishery management programme in the past was caused mainly by the concept of fisheries resources being considered a common property. Thus, it's now the time for Thailand to change the fisheries resources from common property to property of the users and let the users manage the resources by themselves. In principle, the DOF will allocate a certain area of fishing ground to a fishing community or a group of fishing communities, and only the members of the fishing community (ies) have the right to fish in that fishing ground. In addition, the fishermen have responsibility for the establishment and implementation of the fishery management programme in their fishing grounds.

For the establishment of community based fishery management in Thailand, the following have been considered:

- Whether the DOF is ready to grant the fishing rights to fishermen's institutions.
- Whether the fishermen are willing to accept a fishing rights system.
- Whether the fishing rights system is in accord with the present fishery law.
- Whether the fishing rights system is in accord with the present fishermen institution law.
- Whether the persons concerned with the fishing rights system have a common understanding of the concepts of fishing rights.

5. Development of Community Based Fishery Management in Thailand

In the past, the DOF developed a partial fishing rights system by granting some sea areas for shellfish culture to individual fishermen. However, in the last three years there have been many discussions among fishery officers and fishermen for the establishment of a fishing rights system in Thailand. They believe that a community based fishery management will, firstly, solve the problem of conflicts among fishermen, secondly, reduce the law enforcement costs, and, thirdly enable the coastal fisheries resources to recover.

In 1993, the DOF with the collaboration of the Department of Fishery Management (DFM), Faculty of Fisheries, Kasetsart University, established a community based fishery management programme for Thai fishermen. The DFM, with the financial support of the Asean Productivity Organization (APO), invited Prof. Dr. Tadashi Yamamoto who is an expert on the fishing rights system to Thailand in December 1993. Prof. Dr. Yamamoto spent one month with researchers from DOF and DFM, a one-week seminar was organized at DFM in order to convey to project officers a clear concept of fishing rights. Then a ten-day field trip was made to three provinces in Southern Thailand to meet the provincial fishery officers and heads of several fishing communities to explain fully the concept of fishing rights to them.

In early 1994, the DOF set up several committees for establishing the fishing rights system in Thailand. The urgent tasks are (a) drafting a new fishery law to incorporate the fishing rights system and (b) pilot project preparation.

New Fishery Law

The present fishery law was enacted in 1947 with some minor amendments in the 1980s. In the 1940s, inland fishery was the core of Thai fishery; thus the fishery law was drafted to cover mainly inland fishery management. Therefore, there is an urgent need to issue a new fishery law that can apply with fishing rights system. The DOF set up a fishery law drafting committee in early 1994, for the purpose of drafting a law that covers at least the following aspects:

- 1) The management of coastal fishery and industrial fishery.
- 2) Fishermen's institutions.
- 3) Fishing boats.
- 4) Fishing ports.

Pilot Project

Since the fishing rights system is new to Thailand, it is essential to have a pilot project in order to study the obstacles that may occur and seek solutions. The DOF and DFM have agreed to start the pilot project by October 1994. There are 4 provinces that have been selected as pilot project areas. These are as follows:

1. Trat Province, on the eastern coast of the Gulf of Thailand.
2. Surat Thane Province, on the western coast of the Gulf of Thailand.
3. Pattani Province, on the western coast of the Gulf of Thailand.
4. Trang Province, on the Andaman Sea.

In each province a fishing community whose fishermen's group is well developed will be selected as representative of fishermen institutes in the province. Then, the DOF will grant fishing rights in a certain sea area to the fishermen's group. The fishermen who are members of the group have the right to fish in the given fishing ground, and at the same time they have responsibility for fishery management. The fishermen in the community have to designate the suitable number of fishing vessels and type of fishing gear that can be operated in the fishing ground. In conclusion, the fishermen will thus be managing their own resources and they must seek an efficient management programme for these resources. And finally, all benefits from these resources will belong to them.

Direct Benefit of the Project

The direct benefit of the fishing rights project is as follows:

1. The coastal fisheries resources will be able to recover because they are no longer common property. They have become the property of the users who will manage wisely.
2. Once the coastal fisheries resources have recovered, the country can be assured that the supply of fish will be sufficient for domestic consumption.
3. The fishermen will have a catch sufficient for their livelihood. Thus they or any of their family member needs not quit their home to seek a job in town.
4. The standard of living of fishery households will be improved.
5. Every group of fishermen will have their own fishing ground, avoiding conflicts among them.

6. Conclusion

Because the concept of fishing rights is new to Thai marine fishery, it may take quite a long time to reach the ultimate objectives. In the coming decade, fishery officers must work harder than in the past and the fishermen must offer close collaboration to the DOF and among themselves, to ensure success of the project.

However, owing to the limited knowledge and experiences of community based fishery management, Thailand urgently needs assistance from developed countries in various aspects. The success of this project will not only be beneficial to Thai fishermen but also it can be a model for neighbouring country to follow. In the future, Thailand might set up a training center for the development of community based fishery management programmes in the region.

References

- Hongskul, V. 1985. Marine fishery of Thailand. Fish Marketing Organization. Bangkok. 17 pp.
- Juntarashote, K. 1994. Part of Thai marine fishery in Southeast Asia and in the world. In print.
- Phasuk, B. 1987. Marine Fishery of Thailand. In Proceedings of Seminar on Future of Thai Fisheries, 4-6 June 1987. The Secretariat, Southeast Asian Fisheries Development Center. Bangkok. pp 324-404.



MALAYSIAN INSTITUTE OF MARITIME AFFAIRS

REGIONAL SEMINAR ON CONSERVATION OF MARINE
AND COASTAL ECOSYSTEMS

16 MARCH 1995
MIMA CONFERENCE ROOM
16TH FLOOR, WISMA SIME DARBY
KUALA LUMPUR

ESTABLISHING A MARINE PROTECTED
AREA SYSTEM IN VIETNAM -
OBSTACLES, SOLUTIONS & PROSPECTS

BY
MS CATHERINE CHEUNG
Asian Bureau for Conservation
Hong Kong

Draft Only: Not for citation
without the author's
express permission

Supported by the Canadian International Development Agency

ESTABLISHING A MARINE PROTECTED AREA SYSTEM IN VIETNAM - OBSTACLES, SOLUTIONS AND PROSPECTS

Catherine Cheung
G/F, 339 Hennessy Road, Wanchai, Hong Kong

Abstract

As in most other developing countries heavily dependent on coastal resources, over-exploitation, destructive fishing practices, curio trade and habitat degradation caused by siltation, pollution and coastal development, are the major threats to the coastal and marine environments of Vietnam. An inadequate institutional framework and low environmental awareness are seen as major obstacles to conservation. In 1992, the WWF Vietnam Marine Conservation Project was launched to identify priority sites for protection. Status in terms of biodiversity, fisheries, tourism values and human-induced threats were assessed for seven coral reef sites. These were shown to vary widely among sites. Based on the survey findings, protected area proposals were made. These fall within a proposed system of marine protected areas (MPA's) yet to be approved by the Vietnamese Government. The formation of a Council with relevant authorities is recommended to implement and coordinate plans and projects related to MPA's and coastal resource management. MPA management plans should be site-specific, pinpointing local problems and needs. Economic incentives need to be generated to fuel projects. Protected areas must become independent financially if they are to be sustainable. The importance of personnel training, awareness programs, pilot projects and voluntary initiatives, monitoring of site conditions (ecological and socio-economic), frequent evaluation of management effectiveness, and linkages with international and regional initiatives are discussed in the context of Vietnam.

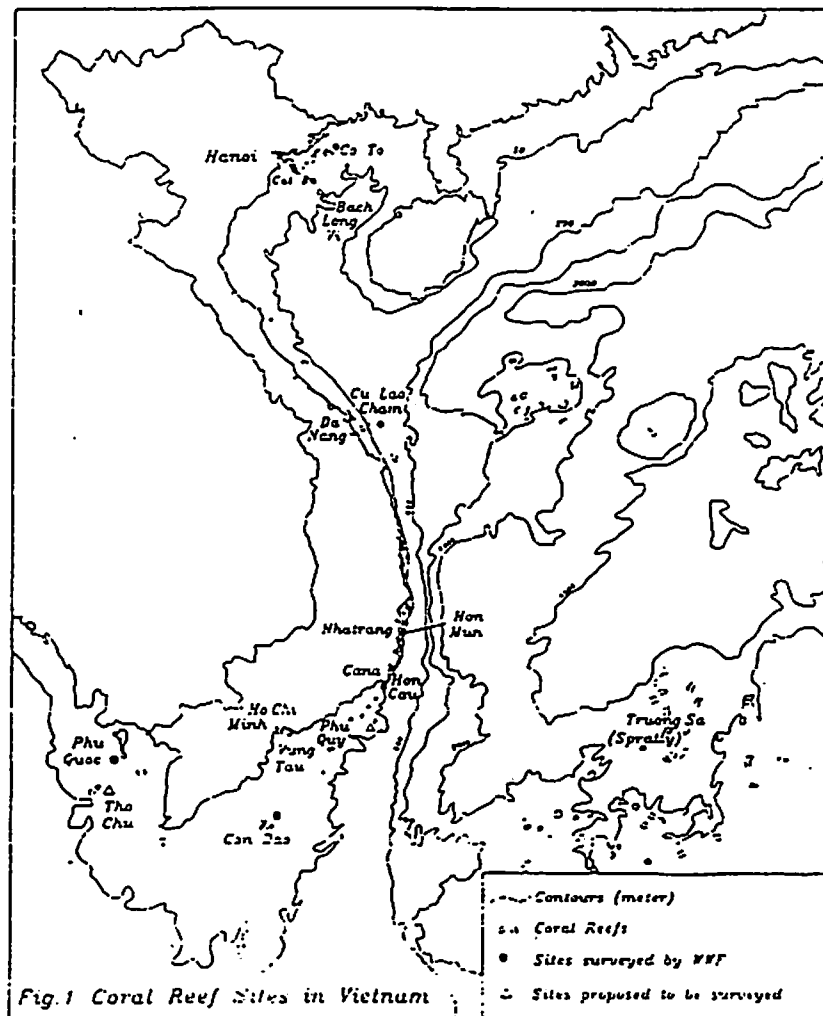
Introduction

Spanning over 1000 km from 8°23'N to 23°22'N, Vietnam is a coastal country with a large variety of coastal habitats ranging from immense mangrove stands on the Mekong Delta in the south, to rocky shores and islands with fringing reefs from south to central parts of the coastline, coral islands and atolls among the Truong Sa (Spratly) Archipelago some 400 km offshore, extensive sandy lagoons along the central coasts, and countless limestone islets of the scenic Halong Bay in the north. Over 70% of Vietnam's human population live along the coasts and on major river deltas. At least half of the nation's animal protein is derived from fisheries products, of which 60-70 % is derived from capture fisheries. Fisheries effort is restricted to the nearshore areas by the small engines of the fishing fleet, 80 % of which is <45 hp (BAP Planning Team, *in prep*). Average engine power varied from 10 hp in the south to 26 hp in the north. Export value of fisheries products in 1992 ranked third among all export commodities of the country (Bui, 1993). Almost all major cities (Vungtau, Ho Chi Minh City, Nhatrang, Danang, Hue, Haiphong and Quangninh) are located on the coast and play an indispensable role in the economy of the country as commercial or oil ports or tourist destinations. The increasing demand for export as well as coastal development and urbanisation imposes tremendous threats and pressures on the coastal environment and marine resources.

The WWF Vietnam Marine Conservation Project

Unlike some of the other Asian countries such as Indonesia, Malaysia and the Philippines where marine conservation by means of protected areas has been established for some years, Vietnam is still in its infancy in this respect. Apart from Cat Ba and Con Dao National Parks, which were designated and managed primarily for forest protection but include portions of marine areas, there were no true marine protected areas (MPA's) in Vietnam devoted to marine conservation until 1994 when Hon Mun Marine Park (Nhatrang) was approved for protection. The latter is one of the many products of the Vietnam Marine Conservation - Coastal Survey Project launched in July 1992 by the World Wide Fund for Nature, WWF- Indochina Programme. The objectives of the project were to:

- 1) identify marine sites of high conservation priorities by means of surveys conducted by local scientists trained at the start of the project,
- 2) initiate priority projects/actions based on the survey findings, and
- 3) pinpoint the problems and issues related to marine conservation on a broad scale.



Surveys of biodiversity, resource utilization and conservation potential were completed for seven coral reef sites (Figure 1). Findings of these surveys have provided some of the basis for evaluation of conservation priorities in the National Biodiversity Action Plan of Vietnam (BAP Planning Team, *in prep.*) as well as guidelines for future projects. Proposals for protected areas establishment or extension were made for all seven surveyed sites, of which the proposal for Hon Mun has been accepted and those for Hon Cau, Con Dao, Co To and Cat Ba have initiated follow-up projects run by local departments and institutions to investigate in detail the justification of protection and strategies for resource management such as restocking of depleted species at Hon Cau and Co To, and eco-tourism development in Con Dao and Cat Ba.

In addition to the first-hand data on the coral reef sites previously little known to science, the other indirect output of the WWF project was trained personnel, namely the marine scientists involved in the surveys, many of whom have become the key local experts on coral reefs in the country, with the expertise not only to carry out research on coral reef ecology but also to advise the government on marine issues, especially related to conservation and sustainable development of marine resources.

Establishing a System of MPA's

Background to Obstacles

Among the seven sites surveyed under WWF Vietnam Marine Conservation Project, Hon Mun and Hon Cau were the only single islands of less than 1.5 sq.km., the rest were archipelagos of from nine (Cu Lao Cham) to more than 360 (Cat Ba) islands, and covering up to 70 sq.km. In addition to this physical divergence, the seven sites differ in biodiversity, fisheries and tourism potential, and are facing different intensities and combinations of human-induced threats (Cheung, *in press*). Apart from Hon Mun which is situated close to the beachside tourist town of Nhatrang, tourism remains undeveloped at all sites although Cat Ba is frequently visited by local tourists for its limestone scenery (WWF Vietnam Marine Conservation Northern Survey Team, 1993). The levels of interest and awareness of the local governments as well as the political and socio-economic environments also vary from site to site.

Threats on the Marine Environment: As in most other developing countries dependent heavily on coastal resources, over-exploitation, destructive fishing practices, curio trade, and habitat degradation caused by siltation, pollution and coastal development, are the major threats on the coastal and marine environments, especially coral reefs. In general, overfishing is more serious in the north, and at sites close to the mainland such as Hon Mun or with large human population such as Phu Quoc (WWF Vietnam Marine Conservation Southern Survey Team, 1994). The proximity of Co To to the Chinese border encourages cyanide fishing to supply the thriving live fish (mainly groupers) market abroad. Dynamite fishing appeared to be taking place at three of the seven sites. Threats from trade in aquarium fish, corals and shells are related largely to tourism activities in the vicinity and ease of transportation to the nearest market. Hon Cau, Con Dao and Phu Quoc are likely to be jeopardised by such trade as tourism grows and easily accessible sites become impoverished. Aquarium fish are supplied for display to tourists in aquaria in Vungtau and Nhatrang which is also the centre of the coral trade. The plan for building a new aquaria in north Vietnam will further increase the pressure on ornamental reef fish in the country as export of aquarium fish via Ho Chi Minh City is also on the rise. Sadly the populations of the hawksbill (*Eretmochelys imbricata*) and green (*Chelonia mydas*) turtles have long been depleted in northern Vietnam and in Nhatrang. It is anticipated that habitat degradation will take

place to varying extents at all sites, depending on the scale of coastal development, marine traffic, tourism growth and management. The dredging activities in Nhatrang Bay, industrial and domestic effluents from the city of Danang and the major plans for port development at Con Dao are likely to cause pollution and habitat destruction. These influence not only the integrity of the coral reef communities, but also the sites' viability and potential for marine tourism and fisheries.

Inadequate Institutional Framework: As in many other countries, marine issues fall into a grey area where often too many government departments are involved and yet none has a clear mandate for overall planning, decision-making or coordination to harmonize conflicts between biodiversity conservation, resource use and development. Unlike terrestrial protected areas which have long been under the jurisdiction and management of the Ministry of Forestry, MPA's in Vietnam do not have a well defined responsible agency. The National Centre for Natural Sciences and Technology, the Provincial Departments of Science, Technology and Environment, the two Oceanographic Institutes from which scientists were recruited for the WWF project, the Research Institute of Marine Products under the Ministry of Fisheries, and the Sub-Institute of Ecology and Biological Resources in Ho Chi Minh City all have their own plans at different sites. Hence MPA's of the country are not systematically planned or implemented.

Low Environmental Awareness: Vietnam is a country long suffering from wars and poverty. The years of war have transformed its people who used to hold a respect for nature culturally and religiously, into opportunists who must exploit all resources when they can to sustain a living. Such a utilitarian approach remains even now during economic reforms when many people seek the opportunities to exploit and compensate for their loss in the past. At the national level, the concern for conservation and sustainable development has been vitalized partially with the formulation of the National Conservation Strategy (1985) and the National Plan for Environment and Sustainable Development 1991-2000 (1991). However the emphases of these documents were placed on the forests rather than coastal and marine resources.

At the levels of the general public, local governments and even academic communities, environmental awareness remains low, especially with regard to coastal and marine issues. The fact that conservation and development are often incompatible such that there are trade-offs between protecting nursery grounds and port development (such as the case of Con Dao), and continuing coal mining along with tourism development (Halong Bay), is not always recognized. This results in the adoption of conflicting uses without integrated planning committed to a defined common goal. In most cases, little or no consideration for sustainable development is apparent at the local level. Without an awareness and belief of the long-term benefits that conservation and rational utilization of resources can bring to people and the economy, there is little chance of success for MPA's and resource management.

Strategies for Success

1. Institutional Strengthening

It is suggested that a National Council for Marine Conservation be formed to pull together authorities from related Ministries, departments and institutions. It is imperative that such a council has executive power and is willing to wield it. Since marine conservation, especially by means of MPA's, is a relatively new concept in Vietnam, foreign inputs are desirable, both technically and financially. Both national and local efforts are needed when planning and implementing MPA's; the former provides strong political backup as well as an overall perspective to avoid gaps while the latter tackles site-specific problems that require tailor-made strategies.

2. Selection of Sites

The purpose of designating specific sites as MPA's is to economize management efforts for marine conservation. To achieve this, a system of MPA's encompassing representative coastal and marine ecosystems of high biodiversity under threat is needed. In addition to the seven sites surveyed under the WWF project, other coral reef sites such as Nam Du and Tho Thu in the Gulf of Thailand, Con Co in north-central Vietnam, Bach Long Vi in Tonkin Bay (north Vietnam), and Sinh Ton in the Spratly Archipelago, should also be assessed for inclusion into the MPA system. Of the 61 priority wetland sites identified in the National Biodiversity Action Plan of Vietnam (BAP Planning Team, *in prep.*), 17 are coastal sites including mangroves, estuaries, coastal lagoons, and sandy and rocky shores, many of which are important for migratory birds. These too should be incorporated to form a representative MPA system and to facilitate integrated management of the coastal ecosystems. Furthermore, collation of existing information and inventory studies are needed for the poorly known seagrass beds in the country.

While the criteria of site selection and classification should ideally follow international standards (Kelleher and Kenchington, 1991), adaptations are often needed to suit local culture and understanding. The recent declaration of the Hon Mun Marine Park has led to alarming reef degradation and overuse as tourist-boat operators advertised vigorously "Vietnam's first Marine Park" (Cheung, 1994). Unlike in the west where "park" automatically implies protection; in Vietnam, "park" is often understood as not much more than "a place for recreation". This does not only demonstrate the decisive influence that the naming of MPA's could have on the success of a protected area, but also the importance of education and dialogue between PA managers and the public, which could have prevented misunderstanding. For instance, at Co To where fishermen realize that they are suffering from destructive fishing, the establishment of a "Fisheries Replenishment Area" is most appropriate (Cheung, 1995b).

3. MPA Management

Information Needed for Planning: The kinds of information needed for the preparation of MPA management plans are three-fold: 1) Ecological and biodiversity, 2) Socio-economic, 3) Legal and Institutional. The surveys undertaken by the WWF project focused mainly on the first. More detailed surveys and studies on the human aspects such as demography, socio-economic background and resource use patterns, as well as the legal and institutional framework, are needed for the design of management plans. Views of the local communities must be taken into account when preparing management plans.

It is unfortunate that Vietnamese scientists seem to advocate complex zoning of MPA's as much as the government, demanding an endless amount of scientific data before protective action is allowed to take place. The lesson of Hon Mun, where the original zoning plan was ruined completely by the lack of management, did not seem to have convinced the scientists and government authorities of the critical role of quick decisions and effective management in the whole design and viability of MPA's. The essence is that research and protection can and should proceed hand in hand; i.e. one ought to have a sense of urgency strong enough to say, at some point, that there is sufficient data to justify the start of some protective action before it becomes too late, while knowing that research can continue and may even be strengthened by such actions as legal declaration, formulation of regulations, recruitment of patrol force and establishment of management authorities.

Local Problems and Needs: Management plans and priority actions must pinpoint local problems and needs. For instance, poison fishing is the first problem to tackle at Co To while major efforts are needed to control tourism and curio trade at Hon Mun. EIA and oil-spill contingency plans should be made to evaluate port development plans around Con Dao, restocking of the heavily exploited and narrowly distributed scallop is recommended at Hon Cau, and dugong and turtle protection at Phu Quoc should be a high priority.

Pilot Projects and Voluntary Initiatives: The processes of evaluation and approval of MPA management plans and establishment of MPA authorities are often undesirably long. Pilot projects and actions launched by the local governments or other voluntary initiatives may yield fruitful results while waiting for the final approval. These should help ameliorate urgent problems and serve as trials for reference when designing management plans and projects. One case example is Hon Mun, where permanent moorings were installed and an underwater photo contest was held before the official approval of the Marine Park. It is believed that the photo contest has speeded up park approval by raising awareness among the government and public. To make such initiatives useful, demonstrations for other sites and projects, information and experience exchange through meetings and mass media are essential.

Management Authorities: The management authorities of MPA's may involve not only government bodies but community leaders, resource users, educators, private enterprises, and others, depending on local circumstances. A protective force must be secured to enforce MPA regulations at the early stage even before the announcement of the MPA's. The experience from Hon Mun revealed that resource users would often take the last chance; i.e. put extra efforts on exploiting a proposed MPA before legislation and enforcement capabilities set in. However this might have been prevented if departments which might have the capability and willingness for surveillance, such as the Military Service, Frontier Guard and Marine Resource Protection Bureau, were well represented in the park planning process.

Economic Incentives and Sustainable Finance: For a site with high tourism value, the role of day to day management and protection may be delegated to a responsible tourist company if it is granted special rights to the site and benefits directly from the results of active site management. It is however important that the company is willing to share the benefits with the local community by means of employment and/or associated business (local cafeteria, souvenir stalls) so as not to create resentment. Extra care and planning are needed to retain as much as possible of the profits made from tourism and other activities in the local economy, which can be used to support the MPA's. This may be difficult when the majority of strong tourism investors, especially dive companies and resort developers, are foreign such as in the case of Nhatrang.

Alternatively a strong and well organized "ally" of the existing tourist operators or of fishermen may take up the role of surveillance. Such "allies" would form a consensus among themselves to stop any destructive activities and enforce a tourist and fishing quota. Specific licensing systems may need to be introduced. Economic incentives coupled with educational programs supported by the government have been shown to be valuable to park management in the Philippines (Hodgson, 1990).

Protected areas must become independent financially if they are to be sustainable. This is particularly true in developing countries where government and aid funding are competitive. Very often the capability of financial sustainability after the initial aid funding is a prerequisite for fund applications. A user-pay system whereby tourists and tourism operators pay for using the PA's is one way of generating funds but is often resisted, especially if the management of the PA's is

obviously incompetent. Positive management efforts must be apparent for users to be willing to pay.

Environmental Awareness and Public Participation: The role of public participation has been regarded as vital in the Philippines where well-managed MPA's are often looked after by local communities with the guidance of social workers deployed at the sites. Such community-based management has been applied not only to MPA's and special areas but also for the management of coastal resources in the broad sense (Ferrer, 1989; White and Lopez, 1991; Gadgil, 1992; White and Samarakoon, 1994). In Vietnam, much effort is still required to raise the level of environmental awareness among the public as well as the scientific community and the government before active participation can take hold.

The identification of target groups is crucial in awareness programs because the roles and impacts of different groups on the resources often vary widely from site to site, especially among islands (Hitipeuw, *et al.* 1994). Extension programs jointly organized by local and national governments, NGO's (non-governmental organizations) and scientific institutions can be very effective as they make use of the motivation and expertise of the NGO's and scientists and stimulate government bodies to take up follow-up activities. Specialized environmental NGO's led by local scientists and businessmen have recently appeared in some cities of Vietnam, and they could be encouraged to grow. Awareness campaigns can also make use of well established mass organizations such as the Youth Union and Women's Union which already have their own newsletters, radio and television programs in Vietnam. At the national level, close working relationships between environmental experts, educators and various Ministries (Science, Technology and Environment, Fisheries, Education, and Culture and Information) are needed for developing environmental and awareness programs through the school curricular and mass media.

Regular Monitoring, Evaluation and Revisions: All management plans, after implementation, should be regularly evaluated and revised for improvement and to accommodate changes. By monitoring the changes human activities, biodiversity, habitat status, and the abundance and size of target species before and after protection, and inside versus outside MPA's, the effectiveness of management can be documented and made known to the authorities involved as well as to the local people. Consultation with the public can also give good indications. Such feedback will help evaluate and improve management of the MPA's, and encourage further conservation efforts.

The effectiveness of MPA's for the management of fisheries resources has been widely discussed and debated (Roberts & Polunin, 1991; Russ, Alcala and Cabanban, 1993) although positive effects have been documented in several sites of the Philippines (Alcala and Russ, 1990). Vietnam could be an excellent venue for the studies of MPA management and fisheries if research is commenced early (before MPA management sets in), comprehensive (incorporating ecological, social, economic and management aspects) and persistent (long-term). By training local scientists scuba diving and underwater research techniques, the WWF project provided the basic capacity for such research.

4. Personnel Training

Since marine conservation through MPA's is a new concept in Vietnam, the expertise in this field is scarce. The ideal would be to generate capable government managers/authorities equipped with a strong ecological and resource management background. The Tropical Marine Ecosystems (TROMES) Training Course in the Management of Tropical Ecosystems and Coastal

Fisheries, held in Haiphong in October 1994 by the Great Barrier Reef Marine Park Authority was very well received by its participants who were mainly from the Fisheries Department and related institutions. Similar training courses are recommended to be run regularly and open to other relevant departments and institutions. More specialized courses on topics such as MPA design, awareness promotion (WWF Indonesia, 1994), reef and resource monitoring, may also be organized for different levels of personnel.

Some local scientists, with a small amount of training, will gain sufficient expertise and should be encouraged to teach some of these courses since they know the local traditions and systems better than any foreign experts and can avoid misunderstanding with their native language. They can also act as bridges between foreign advisors and local government personnel to facilitate understanding and progress. At present, local reef fish ecologists and specialists on resource management are still lacking. Local scientists and MPA managers will benefit from exchange programs abroad such as the Philippines, Indonesia and Malaysia. Communications between natural and social scientists will also generate findings valuable to resource and site management.

5. Linkages with National, Regional and International Programs and Agencies

The National Biodiversity Action Plan (BAP) of Vietnam is soon to be completed as a joint effort between the Vietnamese government and UNDP (involving IUCN and WWF) to review the different issues concerning biodiversity conservation, and to identify programs of actions and projects for adoption by the government and international agencies (BAP Planning Committee, *In Prep.*). Among many program areas concerned mainly with terrestrial systems, the BAP stipulates actions specially addressed to marine conservation; these include identification of a responsible authority, establishment of coastal and marine protected areas, fishery policies, pollution control, culture of depleted species, integrated coastal zone management, awareness promotion and international cooperation. These actions, if implemented, will provide a supportive environment for the establishment of a MPA system in Vietnam. It is hoped that in mid 1995, BAP will have been approved by the National Assembly, and a meeting will be held to present BAP to potential donors who may be interested in funding some of the projects initiating from it. Care is needed to prevent duplications and resource mis-allocations caused by uncoordinated projects.

In addition, linkages with other existing national and regional programs can benefit the proposed MPA project through capacity strengthening and experience exchange. Such programs include the UNDP "Capacity Building for Promotion of Environmental Awareness" and "International Waters Pollution Prevention and Planning for Sustainable Use of Marine and Coastal Resources" and the mariculture development programme of the ECIP (European Community International Programme for the Reintegration of Vietnamese Returnees), the ADB (Asian Development Bank) "Coastal and Marine Environmental Management in the South China Sea", etc.

Programs outside the country such as the ASEAN-Australia LCR - Living Coastal Resources Project (Wilkinson, *et al.* 1992) and ASEAN-US CRMP - Coastal Resources Management Project (White, 1991) may provide some technical information and expertise to Vietnamese scientists and managers. The Year of the Reef (YOR) to be launched in 1996 may also become a channel whereby the Vietnamese MPA project can obtain assistance in the streams of reef research, awareness and education. The "Review of the Protected Areas of the Indo-Malayan Realm" currently being prepared will provide guidelines for project planners and donors on the conservation priorities of terrestrial and marine areas (Cheung, 1995a). The IUCN/CNPPA

(Commission of National Parks and Protected Areas) MPA's Programme has also prioritized MPA's through regional working groups of country representatives. Both initiatives cover Vietnam in their prioritization process.

The International Coral Reef Initiative (ICRI) is planning to revise the "Coral Reefs of the World" (UNEP/IUCN, 1988) in which Vietnam's contribution will be needed. The international databases, ReefBase and FishBase developed by ICLARM - International Center for Living Aquatic Resources Management, and CoralBase by AIMS - Australian Institute of Marine Science (Pacific Science Association, 1994) also contain a vast amount of information that Vietnam can benefit from and contribute to. An increased involvement of Vietnam in various international programs will increase the chance of technical and financial assistance, and cooperation for the realization of a MPA system in Vietnam.

References

- Alcala, A.C. and Russ, G.R. 1990. A direct test of the effects of protective management on abundance and yield of tropical marine resources. *J.Cons.perm.int.Explor.Mer* 46:40-47.
- BAP Planning Team, *in prep.* The National Biodiversity Action Plan of Vietnam.
- Bui, D.C. 1993. Marine Small-scale Fisheries of Vietnam. *Paper presented at the Symposium of Indo-Pacific Fisheries Commission IPFC, Nov'93.*
- Cheung, C. 1994. Lessons from Vietnam's First Marine Park. *NAGA - The ICLARM Quarterly, October 1994, Vol. 17, No.4, p.13. Manila, Philippines.*
- Cheung, C. 1995a. Review of the Protected Areas System of the Indo-Malayan Realm - Preview to the Marine Component. *Paper presented at the Third Regional Workshop for the Review of the Protected Areas System of the Indo-Malayan Realm, 23-25 Jan 95, Cisarua, Bogor, Indonesia. Organized by the Asian Bureau for Conservation, Hong Kong, and PHPA - Forest Protection and Nature Conservation Department, Bogor, Indonesia. 19pp.*
- Cheung, C. 1995b. Vietnam Marine Conservation. *In Coastal Management in Tropical Asia. No.5. March 1995. CRMP- Coastal Resource Management Project, Sri Lanka.*
- Cheung C. *in press.* Coral Reefs in Vietnam - Status and Sustainable Management. *In Proceedings of the Third IOC-WESTPAC International Scientific Symposium on Sustainability of the Marine Environment: An Integrated Scientific Approach to Coastal Area Management, 22-26 Nov 94, Bali, Indonesia. IOC - Intergovernmental Oceanographic Commission and LIPI - Indonesian Institute of Sciences.*
- Committee for Rational Utilisation of Natural Resources and Environmental Protection and IUCN, 1985. *Vietnam National Conservation Strategy.*
- Ferrer, Elmer M. 1989. People's participation in coastal area management, p.117-127. In T.E. Chua and D. Pauly (eds) *Coastal Area Management in S.E.Asia: policies, management strategies and case studies. ICLARM Conference Proceedings 19. 254 pp.*
- Gadgill, Madhav. 1992. Conserving Biodiversity as if People Matter: A Case Study from India. *Ambio Vol.21, No.3, May 1992. p.266-270.*

Hitipeuw, C., Raymakers, C., Ruhunlela, V.S., Putra, K.S., Lefmanut, J. & Van Der Wal, M. 1994. *Awareness and Education Programme for a Community Based Management of the Marine Resources in South-East Aru Strict Nature Reserve, Indonesia*. A Collaboration between PSL/EPA, Yayasan HUALOPU and PHPA/WWF.

Hodgson, G. 1990. An Alternative to Paper Parks. *Proc. of the International Conference on Tropical Biodiversity - 'In Harmony with Nature' 12-16 June 1990, Kuala Lumpur, Malaysia*. p.158-165.

Kelleher, G. and Kenchington, R., 1992. Guidelines for Establishing Marine Protected Areas. *A Marine Conservation and Development Report*. IUCN, Gland, Switzerland. 79pp.

Pacific Science Association, 1994. CoralBase, ReefBase, FishBase. *In Coral Reef Newsletter, July 1994. No.25. p.8-13. Pacific Science Association Scientific Committee on Coral Reefs and the University of Guam Marine Laboratory*.

Roberts, C.M. and Polunin, N.V.C. 1991. Are marine reserves effective in management of reef fisheries? *Review in Fish Biology and Fisheries*, 1:65-91.

Russ, G.R., Alcala A.C. and Cabanban A.S. 1993. Marine reserves and fisheries management on coral reefs with preliminary modelling of the effects on yield per recruit. *In Proc. of the Seventh International Coral Reef Symposium*. p.988-995.

SRV State Committee for Sciences (SCS), UNDP, SIDA, UNEP and IUCN, 1991. *Vietnam National Plan for Environment and Sustainable Development, 1991-2000, Framework for Action*. Project VIE/89/021.

UNEP/IUCN, 1988. Coral Reefs of the World. Volumes 1-3. UNEP Regional Seas Directories and Bibliographies. IUCN, Gland, Switzerland and Cambridge, UK/UNEP, Nairobi, Kenya.

White, A.T. 1991. Coral Reef Management in the ASEAN/US Coastal Resources Management Project. *In L.M.Chou, T.E.Chua, H.W.Khoo, P.E.Lim, J.N.Paw, G.T.Silvestre, M.J.Valencia, A.T.White & P.K.Wong (eds). Towards an integrated management of tropical coastal resources. ICLARM Conference Proceedings 22, 455 pp. National University of Singapore, Singapore; National Science and Technology Board, Singapore; and International Center for Living Aquatic Resources Management, Philippines. p.343-353*.

White, A.T. and Lopez N. 1991. Coastal resources management planning and implementation for the fishery sector program of the Philippines. *Proc. of 7th Symposium on Coastal & Ocean Management, ASCE/Long Beach, CA/July 8-12, 1991. p.762-775*.

White, A.T. and Samarakoon, J.I. 1994. Special area management for coastal resources: a first for Sri Lanka. *Coastal Management in Tropical Asia. No.2, March 94. p.20-24*.

Wilkinson, C.R., Chou L.M., Gomez E., Mohammed I., Soekarno S. and Sudara, S. 1992. A Regional Approach to Monitoring Coral Reefs: Studies in Southeast Asia by the ASEAN-Australia Living Coastal Resources Project. *In Proceedings of the Seventh International Coral Reef Symposium, Guam, 1992, Vol.1. p.138-143*.

World Wide Fund for Nature Indonesia Program Marine Conservation, 1994. *Taka Bone Rate National Park - Community Marine Conservation Awareness Program*. WWF Indonesia Program. 53pp.

WWF Vietnam Marine Conservation Northern Survey Team, 1993. *Survey Report on the Biodiversity, Resource Utilization and Conservation Potential of Cat Ba region, Haiphong, N. Vietnam*. Haiphong Institute of Oceanology (Vietnam) & WWF International (Gland, Switzerland). 63pp. Unpublished report.

WWF Vietnam Marine Conservation Southern Survey Team, 1994. *Survey Report on the Biodiversity, Resource Utilization and Conservation Potential of Phu Quoc (An Thoi) Islands, Kien Giang Province, Gulf of Thailand*. Institute of Oceanography (Nhatrang, Vietnam) & WWF International (Gland, Switzerland). 80pp. Unpublished Report.

CURRICULUM VITAE

Personal Particulars

Name: Catherine CHEUNG Pui Shan
Date of Birth: 14th February 1966
Nationality: British National (Overseas)
Resident of: Hong Kong
Address: 339 Hennessy Road, Ground Floor, Wanchai, Hong Kong
Tel/Fax: 852-2834 2189
Email: cath@hk.super.net

Career Goal

To work with local people in developing countries for nature conservation.
Special interest in marine ecosystems.

Work Experience (Updated on 15 Feb 95)

Period: October 94 - Present
Employer: Asian Bureau for Conservation
Project: Review of the Protected Areas System of the Indo-Malayan Realm
Position: *Marine Specialist*
Work outline: -Write the marine component of the Review, evaluating the status of the existing marine protected areas (MPAs) in the region. Organize regional workshops to update information on the MPAs of all countries involved, gather views of national experts, and link recommendations to the various international initiatives already underway within the region.

Period: October 94
Employer: Great Barrier Reef Marine Park Authority
Project: TROMES - Tropical Marine Ecosystem
Position: *Vietnam Marine Specialist*
Work outline: -Assist in the TROMES Training Course in the Management of Tropical Marine Ecosystems and Coastal Fisheries (Haiphong, Vietnam, 3-14 Oct 94) National Workshop "Coastal Ecosystems and Living Resources - Assessment and Management in Vietnam".

Period: June 94
Employer: Binnie Hong Kong Ltd.
Project: Fury Rocks Dive Monitoring Programme
Position: *Marine Specialist*
Work outline: -Carry out dive surveys and monitoring of the coral communities at Fury Rocks before and after dredging activities in nearby waters.
-Analyse photoquadrat results and prepare monitoring reports.

Period: July 92 - August 94
Employer: World Wide Fund for Nature - WWF-International
Project: Vietnam Marine Conservation
Position: *Project Leader*
Work outline: -Train Vietnamese scientists to scuba dive and perform underwater surveys.
-Lead Vietnamese survey teams on coral reef surveys examining the physical environment, biodiversity, socio-economic background and conservation potential of selected sites.
-Liaise with government agencies to set up marine protected areas.

Period: July 93 - April 94
Employer: The World Conservation Union - IUCN
Project: Vietnam National Biodiversity Action Plan
Position: *Marine Consultant*
Work outline: -Write and collate sections for the marine component of the Biodiversity Action Plan for Vietnam.
-Conduct field surveys in selected coastal and marine sites.
-Interview local people and provincial governments on marine environmental issues.

Period: January 91 - June 92
Employer: World Wide Fund for Nature - WWF International
Project: Environmental Sensitivity Classification for China
Position: *Technical Officer*
Work outline: -Produce the Review on the Biodiversity and Conservation Status of China. This involves site visits, data handling (Foxpro, MASS), reserve habitat mapping (Autocad, satellite image interpretation), and drafting recommendations with government officials.

Period: September 90 - December 90
Employer: Asia Technology Ltd.
Position: *Editorial Assistant*
Work outline: -News reporting and articles write-up for the New Products and Environment sections of the monthly magazine, Asia Technology.

Period: September 88 - September 90 (part-time)
Employer: University of Hong Kong - Zoology Department
Position: *Demonstrator*
Work outline: -Assist teaching in laboratory and field.

Period: June 88 - October 89 (part-time)
Employer: Sino Films (China) Ltd.
Position: *Production Researcher*
Work outline: -Write film scripts for a ten hour documentary program on China's natural environment and problems.
-Assist filming of the marine episode.

Period: June 87 - September 87
Employer: University of Hong Kong - Dr David Dudgeon
Position: **Research Assistant**
Work outline: -Carry out field and laboratory research in aquatic insect ecology.

Education

<u>From</u>	<u>To</u>	<u>Level</u>	<u>Institutions</u>
1988	1991	M.Phil. (Marine Biology)	University of Hong Kong
1985	1988	B. Sc. (Biology)	University of Hong Kong
1983	1985	G.C.E. 'A' level	Harrogate College (U.K.)
1978	1983	HKCEE	St. Paul's Secondary School (HK)

<u>Other Qualifications</u>	<u>Year</u>	<u>Activity</u>	<u>Qualifications</u>
	To be	SCUBA Diving	PADI Dive Master
	1994	SCUBA Diving	PADI Rescue Diver

Languages Spoken Cantonese, English, Mandarin, Vietnamese (elementary).

Referees

Dr. John MacKinnon Director Asian Bureau for Conservation 18E Capital Building 175-191 Lockhart Road Wanchai Hong Kong Tel/Fax: (852)2598 6960 Tel/Fax: (44)532-667644 Em: johnabc@hk.super.net	Mr Simon Woodley Director Research & Monitoring Great Barrier Reef Marine Park Authority PO Box 1379, Townsville Qld. 4810, Australia Tel: (61)77-818811 Fax: (61)77-726093 Em: simon@gbrmpa.gov.au	Dr Gregor Hodgson Senior Engineer Binnie Consultants Ltd 11/F New Town Tower Pak Hok Ting Street Shatin, Hong Kong Tel: (852)2601 1000 Fax: (852)2570 7443 Em:gregorh@hk.super.net
--	--	--

Publications and Reports Written

Cheung Catherine, *in prep.* Establishing a Marine Protected Area System in Vietnam - Perspectives on Prospects and Problems. *Paper presented for the Regional Seminar on Conservation of Marine and Coastal Ecosystem, 16-17 March, 1995. MIMA - Malaysian Institute of Maritime Affairs, Kuala Lumpur, Malaysia.*

BAP Planning Committee, *in prep.* National Biodiversity Action Plan for Vietnam.

Cheung Catherine, *in press.* Coral Reefs in Vietnam - Status and Sustainable Management. *In Proceedings of the Third IOC-WESTPAC International Scientific Symposium on Sustainability of the Marine Environment: An Integrated Scientific Approach to Coastal Area Management, 22-26 Nov 94, Bali, Indonesia. Indonesian Institute of Sciences (LIPI) and Intergovernmental Oceanographic Commission*

Cheung Catherine, *in press*. Vietnam Marine Conservation. *Coastal Management in Tropical Asia*. CRMP, Sri Lanka.

Cheung Catherine, 1995. Review of the Protected Areas System of the Indo-Malayan Realm - Preview of the Marine Component. *Paper prepared for the Third Regional Workshop of the Review of the Protected Areas System of the Indo-Malayan Realm, 23-25 Jan 95, Cisarua, Bogor, Indonesia. Organized by the Asian Bureau for Conservation, Hong Kong, and PHPA, Forest Protection and Nature Conservation Department, Indonesia.*

Cheung Catherine, 1994. Lessons from Vietnam's First Marine Park. *NAGA - The ICLARM Quarterly*. Vol.17, No.4, p.13, Oct 94.

Cheung Catherine, 1994. Preliminary Survey Report on the Biodiversity, Resource Utilization and Conservation Potential of Con Dao Islands, Baria-Vung Tau Province, S. Vietnam (17-27 July 1994). WWF-International, Switzerland. *Internal report*.

WWF Vietnam Marine Conservation Northern Survey Team, 1994. Survey report on the Biodiversity, Resource Utilization and Conservation Potential of Co To Islands, Quang Ninh Province, N. Vietnam (5-21 June 94). WWF-International, Switzerland. 74pp. *Unpub. report*.

WWF Vietnam Marine Conservation Southern Survey Team, 1994. Survey report on the Biodiversity, Resource Utilization and Conservation Potential of Phu Quoc Islands, Kien Giang Province, Thailand Gulf, S. Vietnam (8-19 March 94). WWF-International, Switzerland. 80pp. *Unpub. report*.

Cheung Catherine, 1994. Final Report for WWF-Vietnam Marine Conservation Project VN0011 Phase 1 - Coastal Survey (Jan-July 94). WWF-International, Switzerland. *Internal report*.

Cheung Catherine, 1993. Progress Report for WWF-Vietnam Marine Conservation Project VN0011 Phase 1 - Coastal Survey (July-Dec 93). WWF-International, Switzerland. *Internal report*.

WWF Vietnam Marine Conservation Southern Survey Team, 1993. Survey report on the Biodiversity, Resource Utilization and Conservation Potential of Cau Island, Binh Thuan Province, S. Vietnam (17-24 July 93). WWF-International, Switzerland. 89pp. *Unpub. report*.

Cheung Catherine, 1993. Annual Report for WWF-Vietnam Marine Conservation Project VN0011 Phase 1 - Coastal Survey (July 92 - Jun 93). WWF-International, Switzerland. *Internal report*.

- WWF Vietnam Marine Conservation Northern Survey Team, 1993. Survey report on the Biodiversity, Resource Utilization and Conservation Potential of Cat Ba Islands, Haiphong, N. Vietnam (18-28 June 93). WWF-International, Switzerland. 63pp. *Unpub. report.*
- WWF Vietnam Marine Conservation Southern Survey Team, 1993. Survey report on the Biodiversity, Resource Utilization and Conservation Potential of Hon Mun, Nhatrang, S. Vietnam (23 Feb - 2 March 93). WWF-International, Switzerland. 94pp. *Unpub. report.*
- Zou R.L., Wang Z.H. and Cheung P.S.C. 1993. A Resurvey on the corals in Hoi Ha Wan, Hong Kong after ten years and the development of a nearby borrow area. In *Proceedings of the Third International Marine Biological Workshop: The Marine Flora and Fauna of Hong Kong and Southern China, Hong Kong, 1989.* (Ed. B.Morton). Hong Kong University Press.
- Mackinnon J., Catherine Cheung, Meng Sha, Zhu Xiang and David Melville, 1992 *Draft*. Review on the Biodiversity and Conservation Status of China. 604pp.
- Cheung Catherine 1992. Trip Report on the Coasts of Taiwan, 26 August - 7 September 1992. *Internal report.*
- Cheung Catherine 1992. Trip Report on the Marine Protected Areas of Hainan, S.China, 31 July - 8 August 1992. *Internal report.*
- Cheung Catherine 1992. Report on a Visit to the Coasts of Vietnam, 2 May - 3 June 1992. *Internal report.*
- Cheung Pui Shan Catherine, 1992. A report for the MOF (Ministry of Forestry) - WWF Workshop on Conservation Priorities in China, 25-28 February 1992, Beijing. *Internal report.*
- Cheung Catherine 1992. Climate Change in Xishuangbanna, S. China and its Implications to Conservation of Tropical Rainforests, 1992. *A paper presented at the IVth World Congress on National Parks & Protected Areas, Caracas, Venezuela, 10-21Feb 92.*
- Cheung Pui Shan Catherine 1991. Xishuangbanna Nature Conservation, 1991. A report on the preparation of the Xishuangbanna Nature Conservation Exhibition in Xishuangbanna National Nature Reserve Bureau in Jinghong, Yunnan, S China. *Internal report.*
- Cheung Pui Shan Catherine 1991. An Intertidal survey of Cape d'Aguilar, Hong Kong, with special reference to the ecology of high-zoned rock pools. *M.Phil. Thesis. Zoology Department, University of Hong Kong. 111pp.*
- Dudgeon, David and Cheung Pui Shan, Catherine. 1990. Selection of Gastropod prey by a tropical freshwater crab. *Journal of Zoology, London. Vol.220, p.147-155.*

REGIONAL DEVELOPMENT DIALOGUE

Vol. 14 No. 1 Spring 1993

STRATEGY OPTIONS FOR PARTICIPATORY REFORESTATION: FOCUS ON THE
SOCIAL ACTORS
MICHAEL M. CERNEA

LOCAL PARTICIPATION IN SOCIAL FORESTRY
YAOWALAK APICHATVULLOP

TRANSFORMATIONS IN THE THAI LANDSCAPE: AN EMERGING ROLE FOR
SOCIAL FORESTRY IN RURAL DEVELOPMENT PROGRAMMES
DAVID E. THOMAS

SOCIAL FORESTRY IN THAILAND: POLICY EVOLUTION AND INSTITUTIONAL
ARRANGEMENTS
KOMON PRAGTONG

PARTICIPATORY LAND-USE PLANNING AS A SOCIOLOGICAL METHODOLOGY
FOR NATURAL RESOURCE MANAGEMENT
URAIVAN TAN-KIM-YONG

THE ROLE OF COMMUNITY ORGANIZERS AS CHANGE AGENTS: EXPERIENCES
OF THAILAND'S UPLAND SOCIAL FORESTRY PILOT PROJECT
JINTANA AMORNSANGUANSIN



UNITED NATIONS CENTRE FOR REGIONAL DEVELOPMENT
NAGOYA, JAPAN

REGIONAL DEVELOPMENT DIALOGUE

Vol. 14, No. 1, Spring 1993

Social Forestry for Rural Development

Yaowalak Apichatvullop and Komon Pragtong	Editorial Introduction	v
Strategy Options for Social Forestry: A Sociological Perspective		
Michael M. Cernea	Strategy Options for Participatory Reforestation: Focus on the Social Actors	3
	Comment: Frederic C. Deyo	
Yaowalak Apichatvullop	Local Participation in Social Forestry	34
	Comment: J. Lin Compton	
Social Forestry and Community Development in Thailand		
David E. Thomas	Transformations in the Thai Landscape: An Emerging Role for Social Forestry in Rural Development Programmes	47
	Comment: A. Terry Rambo	
Komon Pragtong	Social Forestry in Thailand: Policy Evolution and Institutional Arrangements	59

gional
It is
members

conomic
about
by the
Sage
ologi-

reflect
ment.
ession
ations
area,

Uraivan Tan-Kim-Yong	Participatory Land-Use Planning as a Sociological Methodology for Natural Resource Management	70	Country
	Comment: Jefferson M. Fox		P. M. S.
Jintana Amomsanguansin	The Role of Community Organizers as Change Agents: Experiences of Thailand's Upland Social Forestry Pilot Project	86	Kapil Ba
	Comment: Samer Jantarapoot		Bernardo
James A. Hafner	Greening the Village: The PDA Community Forestry Project in Northeast Thailand	96	
	Comments: Viyouth Chumraspanit Mikio Masaki		Masanac Kenji Oy
<u>Niti Ritubhonbhan,</u> <u>Pisit Chansanoh,</u> <u>Sutanva Tongrak, and</u> <u>Rapeejan Suwanachote</u>	<u>Community-Based Mangrove Rehabilitation and Management: A Case Study in Sikao District, Trang Province, Southern Thailand</u>	111	
	Comment: Mikio Masaki		
Paama Nityakon	The Traditional Trees-in-Paddy-Fields Agroecosystem of Northeast Thailand: Its Potential for Agroforestry Development	125	
โครงการวิจัย	1992 The Minamata Prize for the Environment		

70

Country Experiences

P. M. Shingi Social Forestry and Interagency Collaboration 151
in India

86

Kapil Bahadur Chitrakar Community Forestry in Nepal 172

Comment: Takeshi Kadota

Bernardo C. Agaloos Social Forestry in the Philippines: 183
An Overview

96

Comment: Atsuko Hayama

Masanao Umebayashi and Participatory Forest Development and 202
Kenji Oya Management: The Japanese Experience

111

Comment: Shinya Takeda

Contributors 221

125

1992

環境水俣賞

THE MINAMATA PRIZE
FOR THE ENVIRONMENT

—海洋生態系部門—

ニテイ・リテイボンブン 様

あなたの調査研究や活動における業績は

環境の保全、再生、創造に

大きく貢献したものと認め

第1回環境水俣賞を贈り、その栄誉を称えます

*In recognition of
an outstanding contribution
to the preservation and/or restoration
of the Environment
through numerous accomplishments in diverse fields,
the City of Minamata
has the honour and privilege of bestowing upon
M. R. Niti Rittibhombhun
the 1992 Minamata Prize for the Environment
in the Category of the Ecosystem of the Inshore Sea.*

光 岡 明

Akira Mitsuoka
Chairman, Committee of
the Minamata Prize
for the Environment

岡 田 稔 之

Toshihisa Okada
Mayor of Minamata City

COMMUNITY-BASED MANGROVE REHABILITATION AND MANAGEMENT: A CASE STUDY IN SIKAO DISTRICT, TRANG PROVINCE, SOUTHERN THAILAND

NITI RITTIBHONBHUN, PISIT CHANSANOH,
SUTANYA TONGRAK, AND RAPEEPAN SUWANNATCHOTE

INTRODUCTION

Over the last two decades, mangrove forest destruction in Thailand has been accelerated by indiscriminate wood harvesting for commercial charcoal production purposes, the rapid proliferation of shrimp farms, extensive conversion of mangroves into urban and industrial land uses, and uncertainty and conflicts over land-tenure status. The combination of these forces has changed the nature of mangrove management. Table 1 shows the changes in the mangrove forest area in Thailand from 1975 to 1989.

TABLE 1. CHANGES IN THE MANGROVE FOREST AREA IN THAILAND (1975-89)

Year	Mangrove forest area (km ²)	1975 area = 100.0
1975	3,127.00	100.0
1979	2,873.08	91.9
1986	1,964.26	62.8
1989	1,805.59	57.7

Source: Royal Forestry Department (RFD), *Forestry Statistics 1990*.

Mangroves provide habitats for aquatic life. Mangroves also provide local people with many forest products for home consumption and sale, such as firewood, construction materials, food, and materials for fishing equipment. Village life along the coast in Southern Thailand is closely interwoven with the mangrove ecosystem. Mangrove destruction therefore has adversely affected the local livelihood system.

As in many other Asian countries, mangrove forests in Thailand today constitute an integral part of the national forest system, and are managed by the Royal Forestry Department (RFD). Although policy measures have been taken to conserve mangrove forests, they have not been effective due to the fact that the government has concurrently granted, rather indiscriminately and at an extensive scale, logging concessions and land-use conversion permits in the mangrove areas.¹

The adverse effects of the destruction of mangrove forests on local communities prompted the people concerned in Southern Thailand to establish in 1985, the Yai Fon Association (YFA), a local nongovernmental organization (NGO) tasked to help improve the quality of life of the coastal villagers. This article reviews through a case study approach, the evolution of community-based mangrove rehabilitation and management promoted as an integral part of the YFA's rural development support programme.

THE STUDY AREA

Southern Thailand has been generally viewed as a better-off region, in comparison with other parts of the country. This perception has prevailed even among the policymakers and has led to the exclusion of the region from the mainstream of government development efforts. Sikao District, in Trang Province, where the study area is located, has been no exception in this respect. Figures 1a and 1b show the location of the study area and a cross-section of the three villages involved in the mangrove rehabilitation project. Table 2 shows selected socioeconomic features of the villages. The main problems the villagers have been facing can be summarized as follows:

Figure 1a. Location of Communities Involved in Mangrove Rehabilitation

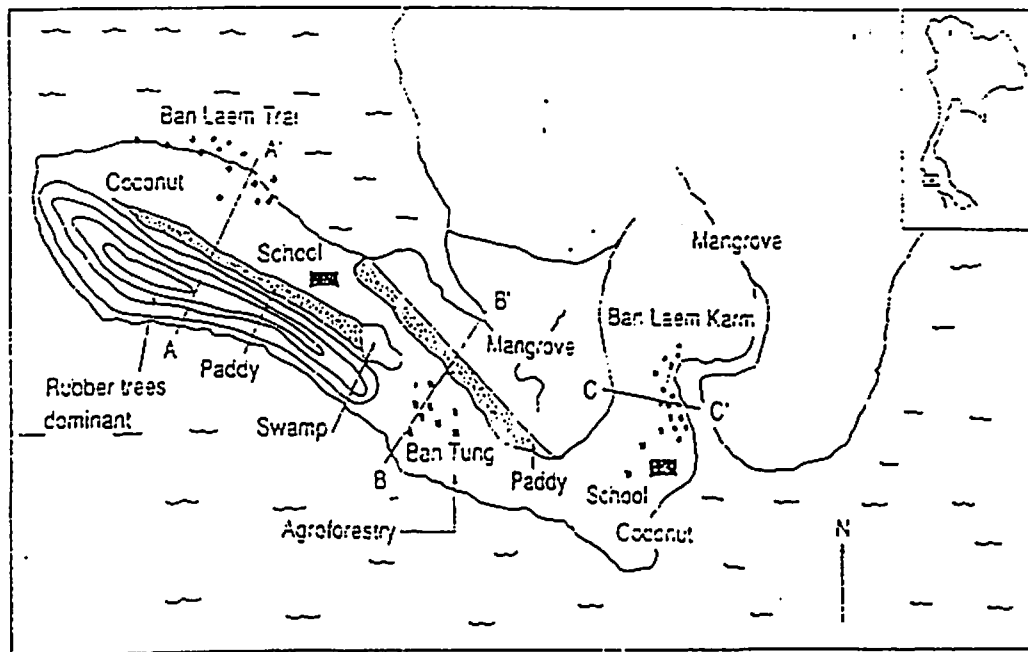


Figure 1b. Cross-Section of the Communities, Showing Settlement, Vegetation, and Soil Types

ompted the
YFA), a local
d villagers.
mangrove
ment support

for parts of
exclusion
in Trang
to show
mangrove
The main

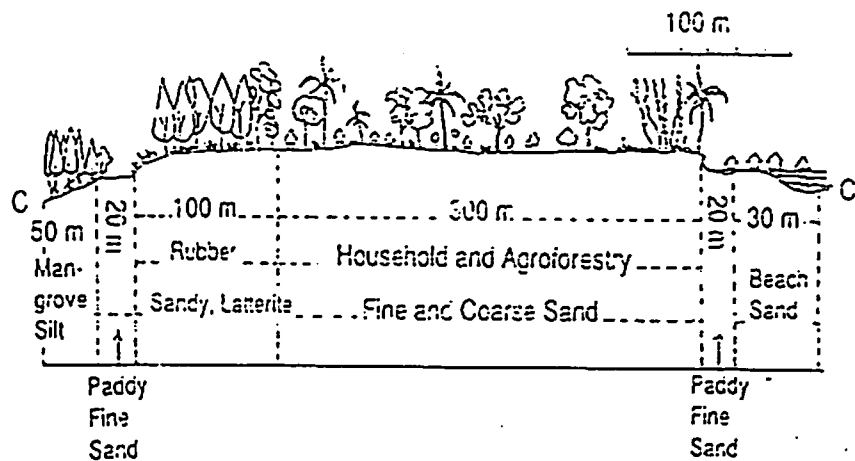
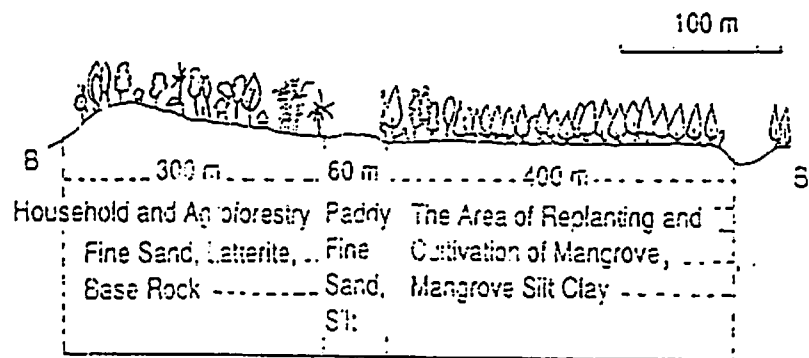
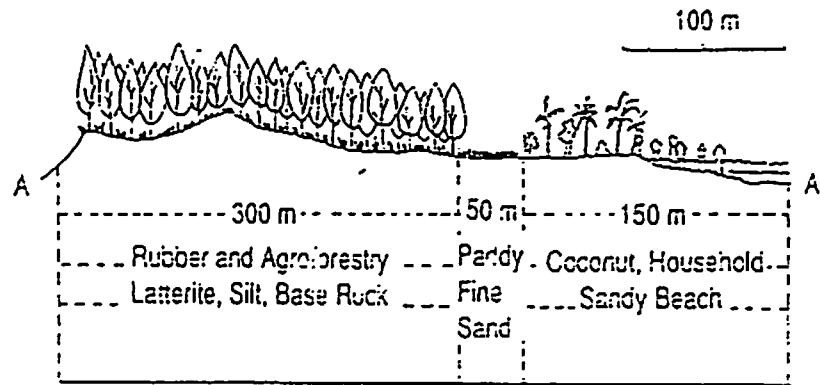


TABLE 2. SOCIOECONOMIC FEATURES OF THE VILLAGES

Village	Laem Karm	Ban Tung	Laem Trai
Area (in rai)*	457	86	695
Population	545	510	502
Number of households	97	84	85
Religion (Percentage)			
Buddhist	7	1	5
Muslim	93	99	95
Main sources of income	Fishing, Coconut Growing, Casual Jobs	Fishing, Casual Jobs, Coconut Growing	Fishing, Coconut Growing, Village Shops
Percentage of households with:			
Only one income source	3	30	--
Two income sources	16	70	84
Three or more sources	81	--	16

Source: Interview with community leaders, 1990.

Note: * 1 rai is equivalent to 1,600 m².

- (1) The villages are among the poorest in the South. The majority of the village population is Muslim, and people's livelihood depends on sea fishing off the coast as well as in the mangroves;
- (2) Improvement of the economic well-being of the village fishermen is constrained primarily by the lack of their own marketing facilities, as manifested by the unfavourable prices offered by middlemen for their fish catches. For some families, the income they earn from fishing is so low that they must resort to mangrove wood harvesting in concessions owned by the nearby commercial charcoal factories;
- (3) Increased commercial charcoal production in this area has had a detrimental effect on the mangroves; as a result, the fishery resources deteriorated. Eventually, the village fishermen came to recognize the close linkage between mangrove exploitation and the decline in their fish catches; and
- (4) Land prices in this remote area sharply increased in recent years due to the rapid development of tourism. This frequently led to land disputes and eviction of local people.

In 1985, when the YFA's community development workers initiated contact with the villages, the villagers were well aware of the adverse effects of mangrove forest destruction on their livelihood. Despite this awareness, no positive action was taken by the villagers to overcome the problem because of their general feeling of powerlessness. They were constrained by two forces that were beyond their control.

The first was the intensifying influence of the market economy, which had gradually trapped the villagers into a vicious circle of poverty. With the increased cash income required to satisfy their day-to-day survival needs, the villagers were compelled to destroy mangroves despite the detrimental effect this had on their fish catches. As this kept them increasingly busy, they found no time to work together towards common goals, such as mangrove rehabilitation and management.²⁷

The second
Under the exist
customary rules
the same time,
to properly look
towards mangro

THE YFA'S F

The YFA's run
launched in mi
function as a ca
in improving t
organizations a
resource manag
ment workers i
difficulties fac
skills.

As shown i
enhance comm
facility projec
village organ
YFA, which s
encouraged to
capital could
assistance per
confidence an
difficulties the

Phase two
collaborative
village leader
development
not only com
among the ne
village leader

Phase thr
towards local
protection. T
manage them
caused by or

The second was the apparent inconsistency between national forest policy and community needs. Under the existing legal framework that integrates mangroves into the national forest system, the customary rules governing community use and mangrove management were no longer observed. At the same time, the newly-introduced land-tenure system did not provide the villagers with incentives to properly look after the mangrove forests, as there was no built-in mechanism to reward their efforts towards mangrove rehabilitation and management.

THE YFA'S RURAL DEVELOPMENT SUPPORT PROGRAMME

The YFA's rural development support programme covered several villages in Sikao District. It was launched in mid-1985, and completed towards the end of 1990. The programme was designed to function as a catalyst for rural development and had three principal objectives: (a) Assisting the poor in improving their level of living through income-generating activities; (b) strengthening village organizations as the primary vehicle for overcoming community problems; and (c) promoting coastal resource management for sustainable rural development. On behalf of the YFA, community development workers interacted with villagers through regular village meetings, articulated the problems and difficulties facing the villagers, identified activities for development work, and upgraded managerial skills.

As shown in table 3, the programme was divided into three phases.³ Phase one was designed to enhance community solidarity by way of assisting the poor in improving their quality of life. A physical facility project, identified by the majority of villagers, was undertaken as an entry for strengthening the village organizations. The first such project was the construction of wells, funded by a grant from the YFA, which served as an investment for the organization. At the same time, the villagers were encouraged to form a savings and credit society. This scheme demonstrated to the villagers that capital could be accumulated through disciplined and regular savings, however small, for mutual assistance purposes. Activities undertaken during this phase also aimed at giving villagers the confidence and equipping them with skills to work together towards overcoming the problems and difficulties they were facing.

Phase two of the programme emphasized the development of an intervillage network for promoting collaborative action towards rural development. Through short-term training courses and field visits, village leaders were provided with opportunities to appreciate alternative approaches to village development. They came to realize the problem of mangrove forest deterioration as the central issue, not only common to all villages of Sikao District, but also throughout the South. Joint undertakings among the neighbouring villages, such as construction and repair of mosques and roads, enabled the village leaders to acquire skills and know-how to promote and manage intervillage cooperation.

Phase three, which lasted about twenty-four months, aimed at promoting intervillage cooperation towards local resource management, including mangrove rehabilitation and coastal fishery resources protection. The approach adopted by the YFA was to start with small activities that the villagers could manage themselves. Hence, instead of directly addressing the problem of fishery resource depletion caused by outsider trawling boats, the main emphasis was on local schemes to rehabilitate mangroves

TABLE 3. MAIN FEATURES OF THE YFA'S VILLAGE SUPPORT PROGRAMME

Phase	Main Emphasis	Major Activities
Phase 1: First to twelfth month	Improve the quality of life among the poor	<ul style="list-style-type: none"> - Improvement of economic well-being through a savings and credit scheme to enable the poor to raise capital for fishing, cage culture, and duck raising - Study tours and training - Public health improvement through construction of wells and sanitary toilets and basic hygiene education among school children - Cooperative stores
Phase 2: Seventh to twenty-fourth month	Develop a network among village leaders for collective action	<ul style="list-style-type: none"> - Repair and construction of mosques - Village road repair and maintenance - Training for village leaders in community development - Study tours
Phase 3: Thirteenth to thirty-sixth month	Promote collective action towards local resource management	<ul style="list-style-type: none"> - Collaborate with the neighbouring villages in community development - Establish functional links with district and provincial authorities - Mangrove rehabilitation - Prevention of illegal fishing activities

Source: Niti Rittibhobhun and S. F. Chen, "A Final Report on Monitoring and Evaluation of the Rural Development Project in Sikao District, Trang Province, March 1987-August 1988" (Submitted to the Canadian Embassy, Bangkok).

and protect the coastal fishing grounds. Efforts were made to collaborate with the provincial and district authorities in promoting management of the local resource base.

Throughout the YFA's rural development support programme in Sikao District, the task of monitoring progress and evaluating accomplishments was undertaken on a regular basis by an outside team consisting of local university faculty. Information generated through monitoring and evaluation facilitated the learning process among all parties involved with programme implementation. Regular meetings attended by village leaders, the YFA's community development workers, and monitoring team members were held to discuss problems, analyse issues, and identify alternative action.

During the project was District. T. two enhance paved the

Securing It was in a designated programme settled by government

Recognized by the village forest reserve villages of villagers with Certificate leaders, with boundaries mangrove As the degraded consultative identified showing the

Project Through community joint project's employees One of the village to enhance benefits common made use

THE COMMUNITY-BASED MANGROVE REHABILITATION PROJECT

During phase three of the YFA's rural development support programme, the mangrove rehabilitation project was promoted in the three villages of Ban Tung, Ban Laem Trai, and Ban Laem Karm, in Sikao District. The various community development activities that were undertaken during phases one and two enhanced community solidarity as well as leadership capability for intervillage collaboration, and paved the way for the project. The main features of the project are reviewed below.

Securing Land for Mangrove Rehabilitation

It was in the mid-1980s that mangrove forests along the coast of Sikao District became officially designated as national forest reserves. Many villages, including those covered by the YFA's programme, were integrated into the national forest system despite the fact that the area had long been settled by the village fishermen. To make matters worse, as the villagers were not informed of the government's decision, they were at a loss as to what to do.

Recognizing the adverse effects of the policy action on the local communities, a survey was initiated by the village leaders, in collaboration with the YFA, to identify land rights in the designated mangrove forest reserves. Eventually it turned out that about two-thirds of the total land area within the three villages of Sikao District was under private domain, according to the *Land Code of 1954*. Most of the villagers were found to be eligible for such land registration documents as NS-3 (*Nor-Sor-Sarm* or Certificate of Use) or SK-1 (*Sor-Kor-Neung* or Claim Certificate).⁸ With this evidence, the village leaders, with support from the YFA, made a plea to the authorities to revise the reserved forest boundaries, and at the same time to allow the villages to jointly manage the remaining one-third of the mangrove area as a community forest. The authorities eventually conceded to the villagers' plea.

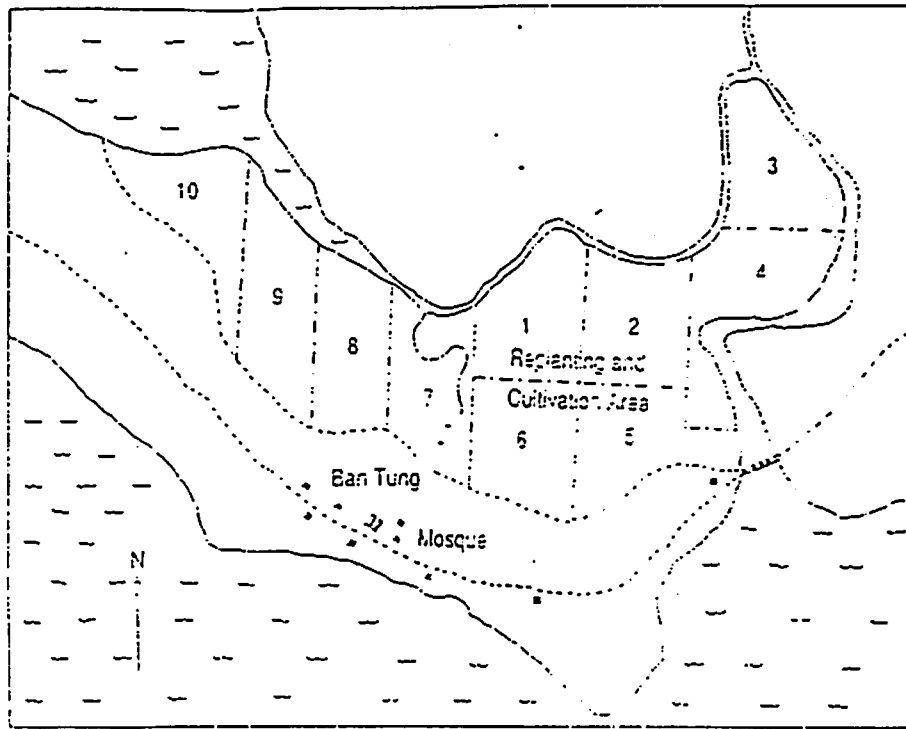
As the mangrove area set aside for community forest purposes (about 587 *rai*) had already been degraded by the villagers' recurrent wood harvesting, the leaders of the three villages decided, in consultation with the YFA, to initiate a mangrove rehabilitation project. The project area was initially identified by the local elders, and eventually a map was prepared by the provincial forestry officials showing the project's boundaries (figure 2).

Project Planning and Motivating the Villagers

Through a series of meetings held among village leaders, local forestry officials, and the YFA's community development workers, a mangrove rehabilitation project was formulated for implementation jointly by the three villages. A variety of issues were discussed at the meetings, including the project's objectives and targets, alternative ways of getting things done, and the principles to be employed for ensuring an equitable distribution of benefits accruing from the project.

One of the crucial issues participants emphasized at the meetings was the need to make sure that all the villagers would participate in the mangrove rehabilitation work. A campaign was therefore initiated to enhance villagers' awareness about the need for, and objectives of, mangrove rehabilitation, the benefits accruing therefrom, and the ways in which they could contribute to the attainment of the common goal. Village leaders, in collaboration with the YFA's community development workers, made use of every opportunity available in the villages to discuss the project with villagers. The

Figure 2. Area Under Mangrove Rehabilitation



meetings held after prayers at the village mosque every Friday, were found to be the most effective venue for such an awareness-building campaign.

Seed Collection and Planting

The predominant species of mangrove forests in the area of the villages is *Rhizophora*, which proliferates through seeds. When mangrove trees are cut and the exposed soil hardens, the seeds cannot penetrate into the soil when they mature and drop from the parent trees. It was for this reason that the mangrove rehabilitation work in Sikao District involved seed collection and planting.

According to a survey conducted by village leaders, in collaboration with the YFA's community development workers, most of the project area was still covered with young mangrove trees that proliferate through a process of natural growth. Therefore, it was decided that mangrove rehabilitation efforts be concentrated only in those spots where soil was exposed, mostly along the waterways.

Mature mangrove seeds are available only from April to June. Primary schoolchildren were given the task of collecting seeds from the mangrove forests one week before the planting day. It was not an easy task to collect a large quantity of mature seeds, as there were not so many mature trees left in the mangroves around the villages.

Planting
villagers h
carried out
then they h
between 19
newly-plan
cent. The

On the
district off
It was the f
This arrang
mangrove
tation wor

The Rule
Apart from
tation proje
allowed to
use and m
community
wood acco

A new
meetings,
(1) Prior
are al
(2) A por
villag
(3) The h
(4) Write
be de
Thus t
officially

COMMU

The serie
District v
contribu
in recent

Planting days were fixed on those weekends when the tide was out during daytime and when villagers had some relatively free time to participate in the seed-planting task. The first planting was carried out jointly in April 1989, by the people of the three villages involved (figures 3 and 4). Since then they have been organizing seed plantings twice a year in April and June. Through four plantings between 1989 and 1990, some 15 *rai* of degraded mangrove forest were rehabilitated, with about 30,000 newly-planted seeds. As of November 1990, the survival rate of planted seeds ranged from 50 to 95 per cent. The low survival rate of 50 per cent is attributable to the use of immature seeds.

On the first planting day, a special arrangement was made to invite the provincial governor, the district officer, and the provincial forest officer, in addition to representatives from the nearby towns. It was the first occasion for the villagers to have the honour of the governor's presence in their villages. This arrangement, made by YFA, was not only instrumental in ensuring official recognition of the mangrove rehabilitation project, but also encouraged the villagers to continue the mangrove rehabilitation work.

The Rule for Mangrove Wood Allocation

Apart from the fishery resource enrichment which has indirectly resulted from the mangrove rehabilitation project, the main output has been the increased yield of mangrove wood. While villagers are allowed to catch fish and crab as before, in accordance with the community's rules and regulations, the use and management of rehabilitated mangrove forests are now regulated by a newly-introduced community rule. As the rehabilitated mangrove forest is a product of the villagers' joint efforts, the wood accruing therefrom has to be allocated among them in an acceptable manner.

A new community rule governing mangrove wood allocation has been established through village meetings, which specifies that:

- (1) Priority right to harvest mangrove wood is given to the poor families in the villages involved, who are allowed to sell the harvested wood to the nearby commercial charcoal producers;
- (2) A portion of the profit accruing from the sale of the harvested wood must be contributed to the village development fund;
- (3) The harvested trees must be mature (more than ten years old or over five inches in diameter); and
- (4) While clear-cutting can be undertaken along alternate strips, replanting work in those strips must be done immediately by the villagers to ensure a sustainable yield of mangrove forests.

Thus the community rule governing the management of rehabilitated mangrove forests has been officially recognized by the RFD.²

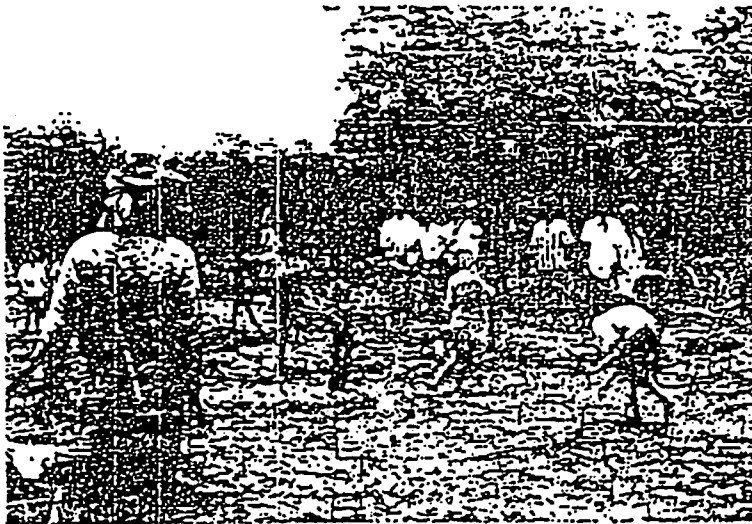
COMMUNITY CAPABILITY-BUILDING FOR SELF-RELIANCE

The series of community development activities promoted with support from the YFA in the three Sikao District villages over the past five years, culminated in the mangrove rehabilitation project, and contributed to the strengthening of community capability for self-reliance. This is typically manifested in recent initiatives on coastal resource management and the cooperative movement.

Figure 3. Community Meeting for Planning Mangrove Rehabilitation Work



Figure 4. Villagers Participating in Mangrove Seed Planting

*Community-Based*

Coastal Resc
Before the YFA
waiting for gov-
that the decline
did not know w
develop the skill

Village lead-
than mangrove r
enhance their co
in collaboration
artificial reefs a
voluntary group
in Sikao Bay.

Cooperative

In February 198
fishing boats an
the distributor a
price. The coop
to the village d
twenty-eight.

This core gr
include housin
encourage vill
obtaining credi
by the cooperat
provincial auth
outsiders is sti

NOTES

- 1/ According
S. Aksorn
Advertisin
- 2/ Bob King,
22 March
- 3/ N. Ritich
Developm
to the Car

Coastal Resource Management:

Before the YFA initiated contact with the villages, morale among villagers was low; they were simply waiting for government agencies to solve their problems. Although they were well aware of the fact that the decline in their fish catches was due primarily to the collapse of the local resource base, they did not know what to do. Their success in mangrove rehabilitation, however, has enabled them to develop the skills required to promote collective action for the management of other coastal resources.

Village leaders have come to realize that the enrichment of coastal fishery resources involves more than mangrove rehabilitation. For example, they have recently initiated three interrelated activities to enhance their coastal fishery resources: (a) Establishment of sea grass protection zones along the coast, in collaboration with the district officials concerned and YFA representatives; (b) construction of artificial reefs along the coast, with support from the Fisheries Department; and (c) organization of a voluntary group for surveillance against illegal fishing activities, such as scoop netting and trawling, in Sikao Bay.

Cooperative Movement

In February 1989, a village cooperative society was established in Ban Laem Karm to provide fuel for fishing boats and other daily necessities. Through the cooperative, gasoline is purchased in bulk from the distributor and sold to villagers at the price of 48 *bah*t per 5 litres, 20 per cent lower than the market price. The cooperative now makes an annual profit of 20,000 *bah*t, of which 6,000 *bah*t is contributed to the village development fund. Membership in the cooperative has now increased from eleven to twenty-eight.

This core group who manages the cooperative has promoted a variety of village schemes; these include housing improvement and the establishment of a savings and credit society designed to encourage villagers to make a 20-*bah*t monthly contribution in order to accumulate collateral for obtaining credit for individual income-generating activities. The ideas generated and activities initiated by the cooperative are now well respected and accepted by the villagers. Through negotiations with the provincial authorities, the group has been able to establish a community fishing area where trawling by outsiders is strictly prohibited.

NOTES

- 1/ According to S. Aksornkoae, a total area of 1.136 million *rai* was under concession in 1986. See S. Aksornkoae, "Mangroves, Ecology and Environmental Management" (Bangkok: Compute Advertising, 1989) (in Thai).
- 2/ Bob King, "Notes on Visit to the Yad Fon Association, Trang Province, Southern Thailand, 21-22 March 1990" (Centre for Environmental Studies, University of Tasmania, 1990)(mimeo).
- 3/ N. Rittibonbhun and S. F. Chen, "A Final Report on Monitoring and Evaluation of the Rural Development Project in Sikao District, Trang Province, March 1987-August 1989" (Submitted to the Canadian Embassy, Bangkok).

have the most to gain from the successful operation of a cooperative scheme are usually those that have the weakest initial bargaining position.

The legal framework must be supported through the development of an active and productive dialogue between the affected parties. An atmosphere of trust may not prevail from the outset, but that will be a clear preference and goal. Out of this fact arises the need for a well-defined means of resolving conflicts quickly and effectively. Once a legitimate co-management scheme is functioning, it is important to control the frustration of members experienced through the imposition of a given regulatory framework.

Although the theory of co-management points to the lower costs of conflict resolution under co-management, the reality may be different. As the scheme is voluntary, it may be compromised by the need to satisfy individual members. Strict regulations may be negotiated in good faith, but non-voluntary imposition (following the establishment of the scheme) may drive frustrated members out of the system.

Thus, the legal framework informing the scheme must be unambiguous. Rights and responsibilities must be articulated clearly from the outset. In order to diminish the likelihood of future conflict, it is imperative that all members be aware of the consequences of involvement. It is here that the development and enforcement of rules through a broad consultative process shows its strengths, since members associate more closely with the result. This is not essential, but it may assist in creating a positive working atmosphere essential to the functioning of an efficient legal regime.

Conclusion:

By focusing on the development of ongoing capacities for sustainable resource management, income generation, and environmental protection at the local level, co-management arrangements can complement the primary administrative and management functions of national, provincial and local governments. For these reasons, co-management appears to be an attractive option for fisheries policy development in many jurisdictions.

However, the eventual development of co-management arrangements will demand specific skills, practical knowledge, new relationships between levels of government, and new links between government and the public. Most important, government agencies must commit to decentralize some degree of management authority to communities. Therefore, efforts must now be made to design enabling legislation in support of resource management decision-making at the local level, as well as those other services government must provide to support the maintenance of local arrangements.

In summary, guiding principles for the use of co-management arrangements in fisheries policy for developing countries, an articulation of required legislation and a description of recommended institutional arrangements must now be developed. Legal research and analysis can thus strengthen policy-level discussions regarding the role of government agencies in achieving the sustainable and equitable management of living coastal resources to meet the nutritive and economic needs of coastal resource users.

Legality and Legitimacy:

An important matter in any legal analysis is the legitimacy of the scheme in question. For any structure to function, it must be perceived by affected parties as a legitimate expression of the authority and responsibility of the relevant controlling agency. In the context of coastal fishers, for example, they must be motivated to adhere to the scheme that controls resource exploitation. That is, they must consider that scheme to be a valid expression of their rights and responsibilities as defined by the institutional arrangements making up the co-management regime.

The legitimacy of the regulatory framework designed to co-manage a resource can be affected in the following ways:

(1) *Content of the Regulations*

Members of the user group will want a scheme that addresses problems that they perceive. The greater the coincidence of regulations with the issues defined by users, the greater the legitimacy of those regulations for the users.

(2) *Distributional Effects*

Regulations should not impose restrictions that appear unwarranted to members of the user group. The more equitable the scheme is, the more acceptance it should receive.

(3) *Formulation of Regulations*

As mentioned above, government shares authority with users in a co-management scheme. The greater the stakeholder participation in the process of creating the scheme for controlling the resource, the more legitimate it will appear to those stakeholders.

(4) *Implementation of Regulations*

Similarly, the acceptance of the scheme will increase in relation to the involvement of stakeholders in the installation and enforcement of regulations. The more direct their involvement, the greater the perceived legitimacy of the scheme.

In all of the above ways of increasing the legitimacy of co-management regulations, one element is common. The ultimate effectiveness of the legal regime will depend upon the involvement of the resource users. As consideration of their perspective increases, the prospects for the success of the co-management scheme will (likely) rise.

Cooperation and Conflict Resolution:

A key element in the gainful operation of a resource co-management scheme is cooperation. Unfortunately, no legal regime can guarantee this. Indeed, one of the greatest struggles in establishing an effective scheme arises out of linking the legal rights and responsibilities with traditional or local level perceptions, conditions, and relationships. This is largely a question of legitimacy. However, some intransigence may be experienced as certain interests (particularly in government) feel themselves weakened through the implementation of cooperative schemes. As has been the case in the creation of other co-management zones, such as in the Washington State (USA) fisheries sector, the parties that

The division of rights must also be clear between individual stakeholders. Enabling legislation will define a variety of rights, depending upon the resource and the management tools necessary. Where heterogeneity exists within the stakeholder group, the legal regime will become more complex, as interests in the resource may conflict. Greater attention to the details of conflict resolution may be necessary where heterogeneity exists; conflicts are more likely to arise in cases where a resource has different values to different parties.

(9) Cooperation and Leadership at the Community Level

Within a legal context, cooperation must be written into rules and regulations as a fundamental principle of membership. Intent is very important in legal relations. While stakeholders will feel that they have an interest in co-management by virtue of their involvement in the process, this cooperation must be perceived as a broader legal relation. Parties will also want to establish who takes the leadership role. This role must have attached to it clear responsibilities and rights, and the operation of the co-management regime must be defined in terms of who holds effective responsibility. This transparency will engender good relations in dealings with government.

(10) Decentralization and Delegation of Authority

Stakeholders will be concerned with ensuring that promised rights are transformed into delegated rights. No true "co-management" system linking government and users can work effectively without the establishment of a formal government policy, with laws, defining decentralization and allocating administrative functions. It is important that all delegation be within previously defined legal parameters, if possible. That is, the construction of co-management regimes must be consistent with existing constitutional arrangements and property concepts; of course, these may be in flux and such consistence may not be possible nor desirable..

(11) Coordination Between Government and Community

The only legal issues arising here are those related to the legality of organizations and groups constituted for purposes of overseeing the co-management regime. These bodies must be created in such a way as to command the respect of affected stakeholders (see legitimacy issues below).

that future conflicts can be categorized and the appropriate regulatory structure used for resolution. Regulations attached to governing legislation and agreements must be directed at that membership.

(3) Group Cohesion

While group homogeneity is important in creating workable rules and ensuring enforcement, it has no impact on any narrow legal issue.

(4) Development of Existing Organization

Legal planners may wish to look to existing community-based systems for examples of effective management schemes. In particular, this could be useful in constructing conflict-resolution mechanisms. Rudimentary traditional measures should not be discarded without consideration. The less complex the legal regime, the better it will be in terms of management and control costs.

(5) Benefits Exceed Costs

Obviously, no scheme will be created if costs exceed benefits. As mentioned above, the more complex the legal regime, the greater the costs in administration. Thus, it is beneficial to keep the management and enforcement structures as simple as possible. The challenge of effective drafting of legal mechanisms is to capture the generalities of the regime without dwelling on specifics. Drafting too many co-management "specifics" into the regulatory structure can increase costs in the long run, by encouraging technical, legalistic management of the resource.

(6) Participation by Affected Parties

Decisions will be made, to one degree or another, by members. These members are also those that collect information, and are in turn affected by it. Here, it is necessary to assign responsibilities. Legal entitlements and obligations must be defined and articulated to the members in the context of their overall participation.

(7) Management Rules Enforced

Again, brevity in the drafting of legal obligations is important. The simpler the management rule, the easier will be its monitoring and enforcement. Further, an effective enforcement regime requires the development of a scheme for ensuring compliance. The members of the co-management system shall be generally responsible for enforcement and monitoring, but the extent of individual responsibility must be defined in regulations. Penalties for non-compliance must be articulated to members. The process of imposing penalties, and any appeal process attached to it, should be as transparent as possible. As a voluntary system, the co-management regime relies on cooperation and trust; if management rules appear to be arbitrarily enforced, the system could fail.

(8) Existence of Legal Rights to Organize

This is the largest single legal issue to be addressed in the creation of a co-management regime. Government must guarantee the legal rights necessary for the organization of stakeholders. There must be enabling legislation that clearly indicates the breakdown of responsibility. This includes determining the level of government responsible for working with stakeholders, dealing with enforcement, assisting in the handling of information, etc. Rights may need to be delegated from central authority to lower levels of government. Since the legal rights of stakeholders will be compromised if there is confusion between and within various levels of government, these stakeholders have an interest in ensuring that the chain of reporting authority is clear.

Key Features in Legal Terms:

Addressing the question of property rights and access control is fundamental to dealing with the problems created by open access fisheries regimes. Different approaches have been developed in various jurisdictions depending upon the environmental, historical, social, political, or economic evolution of their particular fisheries sectors. Models include territorial use rights, traditional user rights, customary marine tenure, individual transferable quotas, enterprise quotas, closed season access, etc. These approaches may be linked to license buybacks, fleet reductions or other measures to limit harvesting capacity and vest property rights in a particular sector of society.

The adoption of property rights and access control requires the drafting of appropriate legislation and regulations. These will again occur at a number of levels. At the national level legislation will address ownership, conservation and protection of the resource and will integrate these issues with legislation addressing the use of other coastal resources. At the provincial and/or local level, regulations will need to address the use of specific zones, stocks or seasons.

Adherence and compliance addresses those functions traditionally referred to monitoring, control and surveillance (MCS). MCS however has connotations of a central authority control which in many areas has been found to be very costly and less than effective. While a role by the central authority is essential, this should be supplemented by local enforcement measures and sanctions developed by the resource users and managers.

If these concepts are accepted, they all require a collaborative approach to resource management involving all levels of government, the resource user. This leads to some variant of co-management or community based management. In examining the co-management concept, certain features present themselves as key to defining and implementing successful strategies for resource management. A list of key features is given below, although other features exist. Not all of them capture legal issues; those that do are discussed:

Please note: The following material is taken mainly from the research of Evelyn Pinkerton (Maritime Anthropologist, UBC, Canada) and of Bob Pomeroy (Fisheries Economist, ICLARM)

(1) Clearly Defined Boundaries

The management area must be clearly defined so that users are aware of the physical extent of the scheme. This means that the scheme's geography must be unambiguous. Geography should thus be included in the legal documents defining the co-management scheme. This will force any changes to the boundaries to be done legally, i.e. consistently with the defining principles of the co-management regime. This relates to conflict with external interests; if members respect clear boundaries, and those boundaries are clear to outsiders, the likelihood of conflict at the border is reduced.

(2) Clearly Defined Membership

Defining "legislation" will include a definition of who belongs to the co-management regime. As with all rule systems, it is important to establish those who are members and those who are not, in order

Defining the Legal Context:

A common scenario for coastal resource exploitation (including fisheries) is that of "open-access". Here, there are no effective resource boundaries, entry is uncontrolled and there are no restrictions on resource exploitation. Attempts to offset damage to open-access resources may be made by a central authority (e.g. government department), taking the form of licenses, gear restrictions, closures, etc. All legal control over the resource is then exerted by that central authority.

The "common property regime", as an alternative system for use of collective goods, provides an opportunity for a distribution amongst resource users of authority over that resource. Such a system is predicated upon certain key features: namely, a recognized group of users, a well-defined resource boundary both used and managed by the group, and a set of institutional arrangements for the use of the resource(s). The utility of such communal institutions for solving resource use problems is increasingly being recognized, and recent crises in fisheries stock preservation have led to greater interest in the integration of these regimes with state management efforts.

Co-management is thus a middle ground between total central control and total local control of a resource. The defined user group, being the stakeholders, share power with the central government authority. Co-management arrangements thus facilitate the use of "...the capacities and interests of the local fishers and community, complemented by the ability of the state to provide enabling legislation, enforcement, and other assistance" (p.6, Pomeroy, ICLARM Policy Brief, 1994).

Critically, the government must decide, through consultation, negotiation or arbitrary decision-making, how much responsibility and authority is to be shared with local resource users. This is a political decision, and does not turn on legal features of the co-management regime. However, once the division of authority is determined in principle, it must be defined in legal terms.

"A Brief Summary of Key Legal Issues in Fisheries Co-management Regimes"

Vincent Verlaan & Jason Tolland
Centre for Asian Legal Studies, UBC

Introduction

Fisheries management regimes throughout the world are increasingly based upon a recognition that resource stability is directly linked to the social, economic, and environmental stability of coastal regions and communities. It is further accepted that resource stability can only be achieved by the development and adoption of more collaborative management approaches which involve resource users in efforts to limit resource extraction rates to sustainable levels.

Critically, both the state and individual resource users have an interest in maintaining long-term viability of the available resources. These interests need not conflict and can often be mutually supportive. However, there must be a mutually beneficial and functional link between the state agencies with management responsibilities for that resource, and the local-level resource users. The challenge facing state-level managers of fishery resources in many jurisdictions is thus to develop their management and regulatory tools to work collaboratively with resource users.

Co-management regimes are now being developed which support this collaboration. Co-management is defined as "...the sharing of responsibility and authority between the government and local fishers/community to manage a fishery of other natural resource;...(where) a recognized group of fishers or an organization establishes and enforces community rules, norms and regulations for catching fish or using the resource, with support from the government" (p. iv, Pomeroy, ICLARM Policy Brief, 1994).

A co-management regime is an attempt to overcome two problematic aspects of some "common property" resources (e.g. fishery resources): 1. *subtractability* (exploitation by one user will reduce stock available per unit of effort to other users) and 2. *excludability* (it is difficult to control access by potential users given the physical properties of the resource, e.g. migratory species). These issues turn on the issue of property rights related to the resource in question; therefore, legal factors must be examined at the start of any attempt to develop effective co-management regimes.

The success of co-management efforts will depend upon how well the link between state agencies and resource users creates a stable environment for cooperation in addressing the subtractability and excludability issues. Fundamental to such cooperation in managing resources will be a consensual and integrated legal structure serving as the framework around which cooperation in managing the resource is built. While legal structures, practices, and traditions vary widely from country to country, the following sections outline the legal factors most relevant to co-management regimes.

- With the water resources which limited in the Lagoon with a surface 22 thousand ha, the exploiting population is big (130.000 people in which 94.000 professionals). The quantity of equipments and the situation of exploitation nearly exhausted, in comparison with resources, so that productivity of fishing is not incrising, only reducting (except in the year the fish quantity coming from the sea to Lagoons is very big)

- So that water product can be rapidly incrising when changing from natural form of exploitation to water product cultivation. Of course, when expand the area of water product cultivation should be pay attention to the limited some can be going problems. For example: the water for feeding shrim can make solution to environment, the task to establish feeding shrim field can effect on water lines of agricultural area will be solty, or water lines in Lagoon can be changing, this will in fluencedirectly to he life of exploiting population water product by traditional methods.

- The management policy system which is implementing fundamentaly by State which force to local authorities, so it is not integrated between the demands of State with proposals of policy, policy to protect resources etc... are developing, with, bad effects.

- Should define that local population in Lagoon is important part, main part which réceived benefits if will have development projects on social and economical aims in the region. They should have right to propose policies and directly enter to management resources in the local area.

- it can not be controlled resources in the Lagoon if it is not controlled the growth of population and not pay attention to any fields of life: economy, politics, society, education, health care and communication of community etc... for local population.

- Should define exactly management level which reasonable for implementation management water product in the Lagoon effectively.

families were settling to the land representing 83%. Based on settlementary life of peoples are more stable, for instance, 55% children in schoolhood were going to school, in comparison with 10% before. The life was more stable and health care, communication for community etc. were improving. However, a part of people were familiar with custom of nomad life, otherwise the implementation of settling task missed deep trend, so the number of families coming back to nomad life day by day in crisis.

2.5. Develop the area of water product cultivation and the environmental question.

This process were begun from 1991, in some recent years it develops rapidly. Up to September 1994, the area of water product cultivation in the region is about 1581ha. Foresight: up to the year 2000 the area will be 5000ha. As above mentioned in present situation, it is said that the only way to rapidly water product is that when we change from natural form of exploitation to water product cultivation. But the putting water surface to the population for water product cultivation is still have unrational problem. the general trend of local people is scarify of capital and not familiar with cultivation technology.

2.6 Management problem Lagoon resources by tax policy

The report had listed process of taxation water product in Lagoon from XVIII century up to now and put out remark that the tax policy nowadays is not corresponding, so the taxes die depart so much. However, taxation is complicated question which is concerning with many problems, so it itself can not be progress when other problems are still not resolving.

2.7 The policy protecting resources of the Lagoon

The report impressed policies of the State, general implementing process, some starting effects, the scanty of problem, the reason of scanty. Including main reason is the local population, they do not see the protection resources which concern with their benefits and their children's

2.8 The program of fishing encouragement

This is new born program in recent years, it have acted and received some effects, it should be developed in the future...

3. SOME COMMENTS AND PROPOSALS

in the region. If we count agricultural population, who have been exploited fishing as secondary occupation so the sum of exploiting Lagoons has gone up to 130.000 men, is about 60% of the sum of population in the region.

2.2 Traditional fishing and shrimming in Lagoons

First, based on investigating data of Fishery Department, we established statistical tab of quantity of fisherying equipments in Lagoons up date of 30 June 1994.

Second, detail discriptions: The structure of equipments, technical system using for fishing and shrimming; indigenous knowledge of ecology which are reflected in that field, productivity of every kind of equipment.

Traditional occupations of fishing were disribed including hecks, trapping basket, fishing an shrimming occupation of which are using net: Bac net (including The net and Ben net), Kim net, Te net...

2.3 Social changes relating to the management of the Lagoon area.

This chapter will describe the process of formation of the possession of which fresh water in Lagoons for living or fishing. Description the structure of inhabitants (water villages) rules of which are formed by families or Professions. the linkage of community is strengthened by religious factor. After 1975, Community of fishing villages were disintegrated by local government and integrated (about administrative structure) into village units on the land.

The problems for the time being are that the administrative management and the exploitation Lagoon resources, still be being difficulties. Nowadays it is not defined who should be authorities of management of the Lagoons exploitation: Commit unit administration or Fishery Department in provincial level?

2.4 Policies and process of implementation the policies of organization for water population going up to settlement on the land.

For stability of living for nomad people in Lagoons, the settling is an important standpoint. this policy was set up by local government and were organized for the people implementing after 1975. The Party Committee saw it as important task from 1983, and was implemented perfectly after the storm in 1985. Up to 1987, there were 2360/2814

From the socio cultural research points of view of local population.
Proposing policies on management coastal resources in
Lagoons of Thua Thien Hue
Prof. Pham Duc Duong and Dr. Nguyen Duy Thieu

1. MATERIALS:

Secondary data on which we use for establishment of the report including:

- Decision materials of party and State Committees of The Thien Hue province which concerned to the socioeconomic development and administrative management in Lagoons.

- Consist reports on situation and quantity of fishing, detail statistical data of fishing equipments in Lagoons from 1989 to June 1994. These materials were established by Fishery Department of Thua Thien Hue.

- Report of results of scientific topic on "Scientific background and practice of settlementary life of fishermen in Lagoons in South Binh Tri Thien. Those materials were established by Settlementary Department of Binh Tri thien.

- Some research documents about indigenous knowledges of students of ethnological, historical departments of Hue University and one important report of Mr. Vo Van Phu on "Traditional occupations of fishing population in Lagoons in Thua Thien Hue."

- Some other documents concern with the topic.

- For acquisition and clearing secondary data of which we had mentioned above, our research group organized investigating research some points in Lagoons.

2. CONTENTS

2.1 Defining groups of the population directly and indirectly exploit the Lagoons resources.

The population living in the Lagoons area is about 220 thousand, of which a part of population are directly exploiting the Lagoon resources is about 94.000, equaled 82,8% fishermen and equaled about 43% population

FROM THE SOCIO CULTURAL RESEARCH
POINTS OF VIEW,
PROPOSING POLICY ON
MANAGEMENT COASTAL RESOURCES
IN LAGOONS OF THUA THIEN HUE.

(Summary)

*Prof. Pham Duc Duong
Dr. Nguyen Duy Thieu*

Task 3.4:

Discussion with planners and managers of the management implications of the information contained in the study report and identification of sustainable strategies.

It is recognized that the above work plan could be considered overly ambitious and it may have to be modified in the experience during the early stages of the study.

The result of this study will provide:

- a) An improved assessment of the role of the mangrove in the coastal system from an integrated physio-ecological and socio-economic perspective;
- b) An assessment of the potential impact of global change and socio-economic development on the mangrove ecosystem and related aspects of the coastal zone; and
- c) A basis for the identification of sustainable strategies for mangrove rehabilitation.

REFERENCES:

1. Nguyen Tac An, Nguyen Huu Ninh, 1995: Economic and Environment Stress on the Coastal Zone of Vietnam. Paper submitted to the Second Scientific Symposium of the Association of Southeast Asia Marine Members (ASEAMS), Bangkok, Thailand, August 1995.
2. Granich, S. , Kelly, M. and Ninh, N.H, 1993: Global Warming and Vietnam. University of East Anglia, Norwich/International Institute for Environment and Development, London/Center for Environment Research Education and Development, Hanoi. In English and Vietnamese.
3. LOICZ, 1994: Implementation Plan. Report No. 33.
4. LOICZ, 1995: Coastal Zone Resources Assessment Guidelines. Report prepared by Centre for Social and Economic Research on the Global Environment, University of East Anglia and University College London. Second LOICZ Open Science Meeting, Quezon City, Philippines, 24 - 27 April 1995.

and loss of biodiversity. This will be based on an update of previous work sponsored by UNEP and ADB.

Task 1.4:

Generate scenarios of future socio-economic development in the region. Two particular aspects will be considered: first, population pressure; and , second, industrial and related developments, including tourism. Aspect of relevance to the mangrove ecosystem will be highlighted.

Alternative strategies for mangrove rehabilitation will also be considered at this stage as they must represent one component of the socio-economic scenarios.

Task 1.5:

An intergrated assessment of the potential impact of the two sets of scenarios on Xuanthuy District, paying particular attention to implications for mangrove protection and rehabilitation. Determination of the effects of the resulting changes in the coastal system, on social and economic well-being, Issue 2, should flow naturally from the assessment completed under Task 1.5. The primary research task under issue 2 is to consider "feedback" implications, that is:

Task 2.1:

Asses how the human response to the changes included in the coastal zone might affect the course of social and economic development and might modify the impact of global change.

Inevitably, research leading to this point will set a more detailed agenda for work under Issue 2. Key points might include consideration of the role of institutions in adapting to change; the availability of financial resources; the value of information ; etc.

The final phase of the study will be the identification of which strategies are likely to be most effective in ensuring sustainable resource management. More precisely, Issue 3 relates to the means by which the information derived through the research can be used by planners to identify sustainable management options. This work will be undertaken with planners managers at the local and national level. It will consists of the following tasks:

Task 3.1:

Preparation of a non-technical summary of the study results for planners and managers.

Task 3.2:

Identification of those individuals, groups and institutions which plays a role in managing the mangrove ecosystem.

Task 3.3:

Distribution of the report prepared under Task 3.1 to the players identified under Task 3.2.

PROPOSED WORK

The proposed work plan has two elements: ecological and socio-economic research which improve the basis for integrated management of the mangrove ecosystem; and the development of the study area as an educational and research resource available to the international community. A subsidiary theme will be the development of local expertise in relevant disciplines through access to the training elements of the LOICZ programme and interaction with other LOICZ projects in the region.

In general terms, there are three major research issues to be considered in supporting the development of an integrated coastal management strategy:

Issue 1. How will the coastal system evolve under different scenarios of global and socio-economic change?

Issue 2. How will these changes influence further socio-economic development of the area?

Issue 3. How can management strategies be strengthened in the light of this information?

Assessment of Issue 1, the primary focus of the proposed research, must be based on thorough understanding of the ecological, physical and socio-economic relationships which underpin the response of the coastal zone to influences such as global change and economic development. The challenge of the present research, for which an interdisciplinary team has been assembled, is to merge the physical/ecological approach with the socio-economic. From the former perspective, the role of the mangrove, for example, can be defined in terms of its contribution to nutrient supply, to coastal protection, and so on. From a socio-economic perspective, the critical question is one of economic valuation: How does the mangrove contribute local livelihoods? What savings can be made in terms of dyke construction and, more importantly, maintenance if mangrove forests are protected and extended? These approaches are intrinsically related but are all too often considered independently.

In the context of the present study, which is primarily concerned with mangrove rehabilitation, the key research tasks related to Issue 1 fall into following categories:

Task 1.1:

Review current understanding of the physio-ecological role of the mangrove in the coastal system drawing on previous research in the study area, in other coastal areas of Vietnam and in other countries. Dependent on the result of this review, further research on specific aspects may be necessary. It is envisaged that any additional research will concentrate on technical aspects of mangrove rehabilitation.

Task 1.2:

Prepare an assessment of the present economic role of the mangrove of Xuanthuy District in maintaining the socio-economic well-being of the inhabitants of the coastal zone.

Task 1.3:

Prepare scenarios of the impact of global change on the region, paying particular attention to the potential effects of sea level rise, changes in cyclone climatology, local climate change

socio-economic variables such as decollectivisation of agricultural holdings on the ability to adapt gives an excellent context for economic and institutional analysis. Over the coming years, Vietnam faces the additional challenge of managing the social and environmental impacts of rapid industrialization and tourism development in the coastal zone alongside the potential impact of global environmental change.

The focal area for the study will be a region within the Red River delta, an area with diverse economic activities and settlements and a range of ecological "habitas" for comparative study. Covering an area of around 15,000 square kilometres, the fertile land of the delta, composed of alluvial soil from the Red River and the Thai Binh River, accommodates a population density of 1,000 people per square kilometre. It is one of the main agriculture regions of Vietnam with rice production of over 300 kg per capita in the area, second only to the Mekong delta in productivity per capita. It is served by a complex irrigation and flood protection system. There is increasing investment in "high-value" products such as shrimp in the coastal zone, often at the expense of mangrove protection from sea flooding, and in forms of agriculture to supplement farm income from rice in more marginal areas.

The area proposed for specific study in the delta centers on the Xuanthuy District of Namha Province, the southernmost province in the Red River delta. The Namha Province is bordered by 72 km of coastline and contains four large rivers, the Red River, Dao, Day and Ninh. The major population centers are Hanam the provincial town, and Namdinh City. The province lies around 90 km from Hanoi. The Xuanthuy district is 16,000 hectares in area and the major sources of income for the inhabitants are agriculture, fisheries, light industry raw materials supply and a limited amount of tourism. This is a coastal district which contains an important RAMSAR site. The protected area consists of mangrove forest which is a major resource for migrating birds as well as providing for local livelihoods and coastal protection. A core reserve on the seaward side of the forest (where eventually no resource exploitation will occur) is protected by a buffer zone (where aquaculture is permitted on a leasehold basis) and an area of relatively unprotected mangrove to the landward. An extensive area of mangrove is rehabilitated each year. Currently, management plans for the core reserve and the buffer zone are being developed and implemented. The population density in Namha Province is 1,050/km² and the total population is 2.5 millions. Development priorities for the province, as started by Provincial Government, focus on improvements to the transport and power distribution infrastructure, alongside investment in light industry, fish processing and tourism (hotel provision).

The mangrove forest of the Xuanthuy District has been the subject of previous study by the authors and this work provides a strong basis for the proposed study as much data has already been collected regarding relevant physical, ecological and socio-economic parameters. Access from Hanoi is relatively straightforward and the Xuanthuy District People's Committee and Reserve Manager have offered full support. As the initial management plans for the reserve are being implemented at this time, this provides an important opportunity to monitor the long-term evolution of the reserve management strategy in the light of other, broader socio-economic developments in the area (response to population pressure, industrialization, tourism and etc). The primary impacts of global change in this area are likely to occur as a result of sea level rise, changes in tropical cyclone frequency and intensity, climate change (on land and in the ocean) and loss of global biodiversity (for example, through the effects on the richness of the migratory bird population).

Nguyen Huu Ninh*, Nguyen Hoang Tri**, Mick Kelly***, Adger Neil****

* Center for Environment Reseach Education and Development (CERED), Hanoi/ Center for Resources Management and Environmental Studies (CRES), Hanoi.

** Mangrove Ecosystem Reseach Centre (MERC), Hanoi.

*** University of East Anglia, Norwich.

BACKGROUND

The overall aim of this work is to contribute to the scientific basis for sustainable management of the coastal zone through an in-depth study of one area on the coastline of Vietnam: the Xuanthuy District in Namha Province, the Southernmost province in the Red River delta. The management focus of the study is the issue of the mangrove protection and rehabilitation. The Xuanthuy District contains an important mangrove forest which has recently been defined as a RAMSAR site. Mangrove destruction is occurring at a rapid rate all along the coastline of Vietnam as a result of fuelwood extraction, intensive shrimp farming, and so on. Consequently, many of the functions of the mangrove ecosystems-in terms of nutrient supply, the provision of spawning grounds for fisheries and coastal protection to name but a few - are lost.

The effectiveness of protection and rehabilitation options for the mangrove forests of the District both within and outside of the protected zone will depend on a number of diverse social economic and physical influences. The population density in the Namha Province 1.050/km². Situated some 100 km from the major centres of Hanoi and Haiphong, the area is likely to the experience rapid development pressure in terms of industrialization, raw material supply and tourism over coming years. On average, the coast of northern Vietnam is prone to 7-8 tropical cyclone landfalls a year.

Severe dyke failure occurs, on average, about once every 20 years. This set of influences provides rich material for scenario generation and scientific assessment of the effectiveness of management options under various socio-economic and global change scenarios.

THE DEMONSTRATION SITE

Vietnam provides an ideal location for an interdisciplinary study of global change and coastal zone management. First, Vietnam faces major present - day difficulties due to the adverse impact on the coastal zone of natural hazards such as flood, drought and the effect of typhoons. A complex social system minimises the impact of these hazards through structures at national, provincial and community level. Second, Vietnam is likely to experience considerable impacts as a result of long term climate change and sea-level rise. The extent to which the present social system can evolve to deal with the changing character of environmental impacts is a matter of both academic interest and social concern. Finally, Vietnam is a classic example of an economy in transition. The nation is now allowing greater foreign investment, is slowly liberalising its distribution and product markets and is changing the property rights structures in agriculture and land ownership. The impact of changing

WHAT IS IT ?

COMMUNITY (SOCIAL)
(ECOLOGICAL)

COMMUNITY ORGANIZER

COMMUNITY ORGANIZATION

NETWORK / NET WORKING

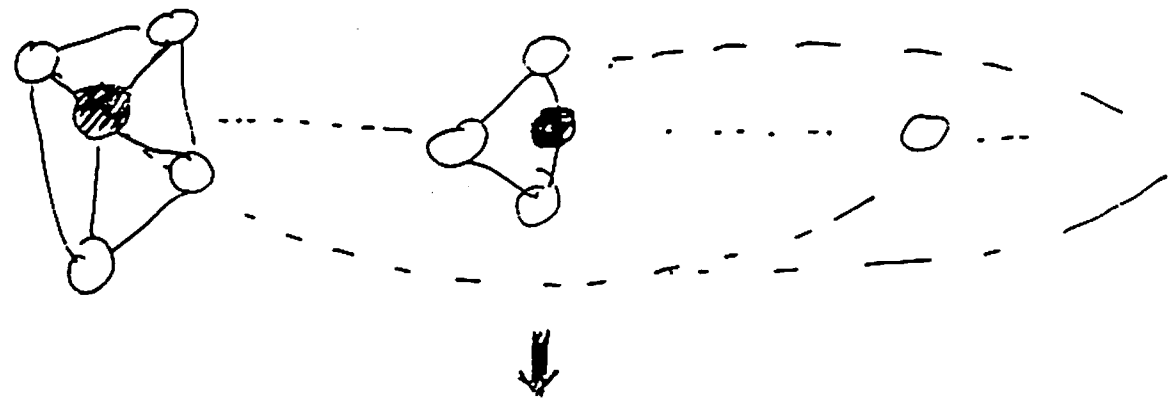
LEARNING PROCESS

DIRECTION SHOULD TO BE CONSIDERED
FOR VN AQUACULTURE POLICY

What	Where	WHO	Money (external/inter)
1. <u>Case study</u> on Community sustainable aquaculture in the VN context	Coastal areas/ N → S. VM	- Academic - Community leaders - DoF rep. - NGOs (?)	++++ / +
↓			
2. <u>Learning network</u> : on Community sustainable aquaculture	that Through out VN.	- Academic - Com. leaders - DoF Rep. - Media/ reporters - Business Rep. - NGOs (?)	+++ / ++
↓			
3. <u>Policy Forum</u> on sustainable aquaculture	<u>Community Forum</u> (Reps from 1 + 2) ↓ <u>National Forum</u> (Vision / policy / strategy / plans)	All sectors above including M.P.	++ / ++

MPI
17 May '95

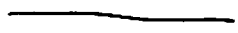
(1994)



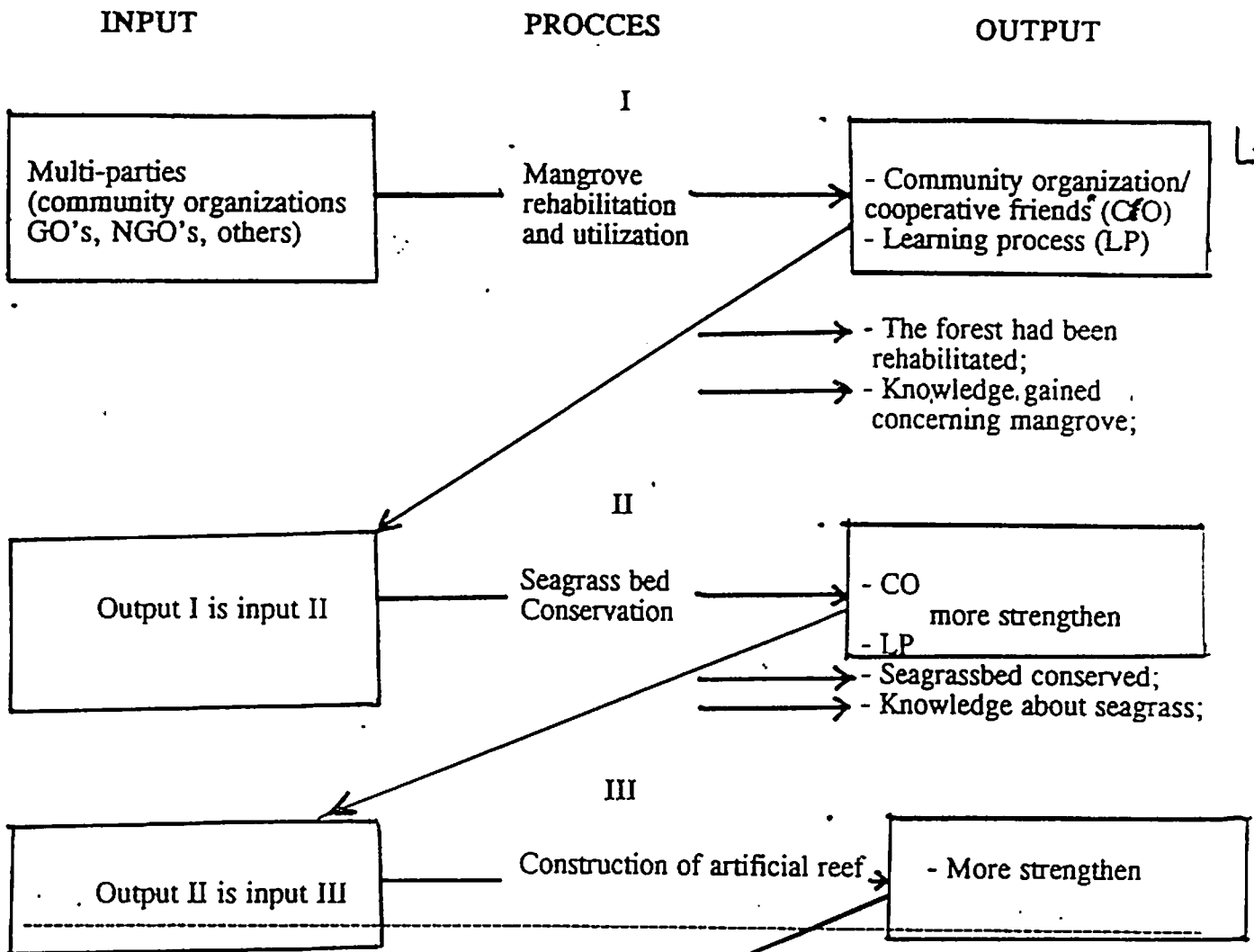
Southern Thailand Small-Fisherman Federation.

(Representatives from 10 (13), Coastal Provinces of Southern Thailand)

- THEY CONCLUDED :
- SET UP OUR OWN ORGANIZATION, NOT TO WAIT FROM OUTSIDER.
 - ORGANIZATION OF MULTI-PARTNERS (CO, GO, NGO, BUSINESS EXPERTISES).
 - WORK TOWARD SUSTAIN FISHING.



Means and ends of community-based coastal resource management



LESS I

#

N

WHAT OTHER
ACTIVITIES ?
ASK THE CO !

UNTIL FREED
DIE.

A LESSON

Process and outputs of the mangrove rehabilitation activity

Process	Output
1. Assessment of the forest status by all parties	<ul style="list-style-type: none"> - Boundary & Status - Capability on the forest investigation and assessment increase - Acceptance among parties increase; - Better understanding the relation with and dependency of the community on the forest
2. Problem / Cause analysis of the forest devastation and decline	<ul style="list-style-type: none"> - Understanding the Problems and causes; - Increased acceptance among parties; - Community inhabitants realize the importance and significance of the forest for their livelihood; - Parties realize their capability;
3. Objective/goal to solve the problem	<ul style="list-style-type: none"> - Creating commitment to the common goal; - Increased acceptance and capability among parties;
4. Methodology to rehabilitate the mangrove and utilization	<ul style="list-style-type: none"> - Appropriate methodology and action plan initiated; - Commitment to participate in activities; - Better understanding of the learning process and need for parties involvement; - People organization initiated centered around local organization;

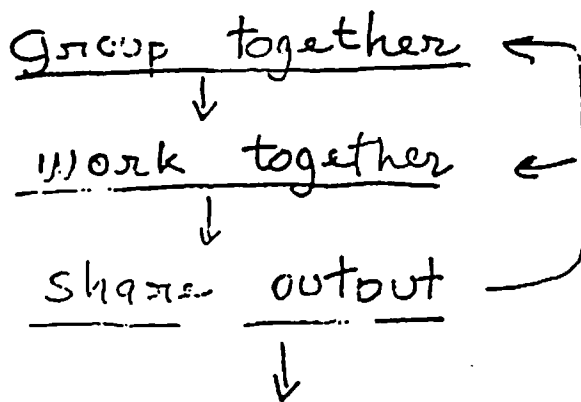
- How can we ensure that our next generations have even sufficient resources for their living?
(HOW TO SUSTAIN FISHING?)



- Go out to ask local small-fishermen
(Throw away position, degree, ego, etc),
learn from them.
(Fact: They learn mostly by doing)



- KEY ANSWERS:



- HOW TO GROUP TOGETHER ?

WHAT IS THE GROUP PROBLEM?
(COMMON PROBLEM)

COMMENT

MIKIO MASAKI

The article by Niti Rittibornhun, Pisit Chansanoh, Sutanya Tongrak, and Rapeepan Suwannachote examines a community forest managed by a village organization with the support of a nongovernmental organization (NGO). Their case study highlights two main issues: One is the NGO approach to community forestry which emphasizes local people's participation; and the other is the land issue in community forests. Community forest legislation has recently been a subject of concern on part of government, NGOs, and local people. This article is, therefore, both timely and significant.

As exemplified by the case of the Yod Fon Association (YFA), NGOs are able to focus their efforts on a narrow area, which enables NGO workers to respond to the local needs at hand. Moreover, NGOs can grasp specific problems in their entirety within the context of community development. This NGO approach may differ substantially from the government approach. The authors imply that government extension workers tend to talk down to the people and provide resources and funds only within the bureaucratic system. Evidence on Thailand shows that those community forest activities initiated by NGOs with people's participation have been successful.

In spite of the successful cases, most NGOs suffer from lack of manpower and funds. Thus, NGOs face difficulties in expanding their activities to other areas and in providing technical skills to their personnel. Furthermore, NGOs tend to take people's side but they do not communicate adequately with the government. NGOs should attempt to maintain better communication with the government for the exchange of knowledge and information on the best available community development techniques.

It has often been observed that the ownership of community forests assures benefits from the area and facilitates people's participation. Existing forest laws do not recognize community forests within the national reserved forestlands. The government, however, tries to legalize community forests and allows local people to manage their own forest resources. Notably, the proposed Community Forest Act is referred to in the *Seventh National Economic and Social Development Plan (1991-96)*. Since the government is weak in gathering field-level information, the NGOs' opinions should be taken into account in the proposed act. NGOs have drafted a forest policy which emphasizes community management.

Several community forests which gained official recognition from the Royal Forestry Department (RFD) were initiated by NGOs. The lessons learned imply that involving local government authorities and keeping in good terms with them, prompted official recognition of their activities. As the article suggests, government officials can be invited to planting activities.

Gaining official recognition is the first step in guaranteeing people's participation where community forestry activities are concerned. It is, however, reported that with mere official recognition, the people's right to manage community forests remains fragile. The Huay Kaew community forest, for example, faces a number of problems, although the community forest has already gained recognition. Hence, the legalization of the proposed Community Forest Act is a prerequisite for ensuring people's rights in their community forests. Those NGOs which are more familiar with local needs are expected to reflect their views in decisions concerning community forestry project activities.

THE TRAD AGROEC ITS POTEN

PATMA VIT

INTRODUCTION

Paddy rice is the main crop of the total cultivated area. They have stands of paddy fields larger than grainfields. It is an unusual type of agriculture. Farmers are trying to improve the considerable potential of the Northeast's rural agriculture. Deforestation problems in 1961 to 29 percent has occurred in the area and 1935.'

Several studies have been conducted in order to understand the farmers' perception. The objective is to find out the overall rural system.

The objectives of the study are to identify the functions within the rural system. Further research needs to be done to improve the understanding of the rural system. The bases for both a

PHYSICAL, SOC AND THEIR EFF

Biophysical Att
Geography and soil

- 4/ The land registration documents, referred to by their Thai acronym, correspond to the phases of acquisition, use, and legal possession of land. NS-3 certifies that the occupant has made use of the land for a prescribed period and is allowed to sell and mortgage it by using this document to record the transaction. SK-1 allows a person who has made use of the land to make a claim within a specified period.
- 5/ Kee-ree-rat Yod, "Mangrove Plantation for Community Use at Tambon Koa Mai Kaew, Sikao District, Trang Province" in Komon Pramong, ed. *Proceedings of the Seminar on Community Forestry in Thailand* (Bangkok: Royal Forestry Department (RFD), 1990) (in Thai).

CO
MIH
The a
exam
organ
comm
comm
govern
on an
can be
appro
exam
burea
NGO
is
face c
person
the ec
exche
I
and in
the ne
allow
is rel
gover
acco
means
(RFD)
and
suges