



PROCEEDINGS OF "THE REGIONAL WORKSHOP ON
PROMOTION OF STRATEGIC IMPLEMENTATION OF
**FISHERIES CO-MANAGEMENT
AND RIGHTS-BASED FISHERIES FOR
ENHANCING GOOD GOVERNANCE**
IN COASTAL AND INLAND FISHERIES MANAGEMENT"



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Foreword

The Training Department of the Southeast Asian Fisheries Development Center (SEAFDEC/TD) has launched a project on the promotion of rights-based fisheries and co-management towards institutional building and participatory mechanism for coastal fisheries management. The purpose of the project is to promote the applicable practice of rights-based fisheries and co-management towards institutional building of stakeholders, and to introduce the appropriate participatory mechanism of co-management to foster the use of indicator for coastal fisheries management.

Along with the objective of the project, SEAFDEC/TD organized a regional workshop on promotion of strategic implementation of fisheries co-management and right-based fisheries for enhancing good governance in coastal and inland fisheries management on 2-3 February 2012. The workshop aimed to share and exchange the strategies implementing co-management and rights-based fisheries for fisheries management. The practices and outputs of the workshop have been compiled in this proceedings in order to provide fisheries officers and local user organizations of SEAFDEC member countries to manage fisheries resources for responsible and sustainable use of the resources and environment.

In closing these few words on this workshop and it gives me the greatest pleasure to congratulate the presenters on their presentations and to offer my sincere thanks to all that have taken part and made their contribution to this workshop.



Dr. Chumnarn Pongsri

Secretary-General of SEAFDEC and
Chief of the SEAFDEC Training Department

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Exclusive Summary

Southeast Asian Fisheries Development Center (SEAFDEC) was implementing the program on sustainable fisheries for food security in the ASEAN region as well as to promote the formulation of harmonized regional policies for a long-term sustainability of fisheries resources by using appropriate management mechanisms. In 2006, “The Regional Guidelines for Co-management Using Group User Rights for Small-scale Fisheries in the Southeast Asia” was introduced to some countries, (i.e., Cambodia, Thailand and Vietnam), which have adapted the Regional Guidelines to their national framework and policy of coastal and inland small-scale fisheries. Over the year that the co-management and rights-based fisheries has been implemented in the Southeast Asian region, the lessons, both success and failure, have been learned and recorded. SWOT analysis has been used as an important tool to clarify and to review the co-management and rights-based fisheries for improving the performance of the organization or project. Hence, this regional workshop, as designed and organized by SEAFDEC/TD, under supported by Japanese Trust Fund, on 2-3 February 2012 in Bangkok, Thailand, aim to share and exchange the experiences and strategies on fisheries co-management and rights-based implementation, under three main objectives.

The overall objective of the regional workshop was to promote the practices of rights-based fisheries and co-management to improve small-scale fisheries management in ASEAN region. Its three specific objectives are as follow: 1) To review applicable practices and applications of the co-management and rights-based fisheries to secure appropriate means of livelihood and sustainable coastal and inland fisheries; 2) To assess by SWOT analysis the competency of applicable practice and lesson-learned on co-management fisheries and rights-based fisheries; and 3) To formulate strategy for the promotion of co-management and rights-based fisheries by applying the results of SWOT analysis to ensure good governance in coastal and inland fisheries management. Along with the objective, a 2-day regional workshop was held to discuss issues under ten interrelated agendas.

On the first day, 2 February (Thursday), the workshop was inaugurated by the SEAFDEC Secretary-General, *Dr. Chumnarn Pongsri* (chairperson of the workshop). After the adopt of the agenda and introduction to the workshop, the chairperson invited *Dr. Supaporn Anuchiracheeva* to present the concept of co-management and rights-based fisheries management. Under the agenda “review applicable practice and application of co-management and rights-based fisheries to secure means of livelihood and sustainable coastal and inland fisheries” that followed, the representative of each SEAFDEC member countries (i.e., Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, The Philippines, Thailand, and Vietnam) made his/her presentation. The first day of the workshop was concluded under agenda 6 by *Dr. Kungwan Juntarashote* who delivered before the audience the SWOT analysis for formulation of strategic planning for fisheries co-management. Moreover, the participants were given a drill on the SWOT analysis using the planning of fisheries resources and co-management development under five different categories, i.e., natural resources, human resources, governance, management practices, and geographical areas.

On the last day, *Dr. Kunwan J.* employed the SWOT analysis to work out the strategies aiming at achieving good governance in coastal and inland fisheries management. The participants were encouraged to actively practice in this agenda. Toward the end, the workshop succeeded in drawing up the main strategy: “*Strategy for Efficient Enhancement of Co-management Practices in Southeast Asia*” that embodies three objectives 1) to enhance fisheries resources for sustainable use; 2) to improve livelihoods in communities; and 3) to promote responsible fisheries practices. In addition, the workshop was able to synthesize 17 measures under the strategy for the enhancement of fisheries co-management in Southeast Asia. Moreover, the workshop agreed under Agenda 8 (Discussion on the future activities) to adapt a set of recommendations that comprised: a) to close the gaps in implementation of the guidelines on co-management and rights-based fisheries management, b) to

address legal issues in community management concept to strengthen law enforcement, c) to enhance cooperation among stakeholders in implementing the co-management, and d) to single out and implement the most effective management approach.

In order to assist member countries in formulating their respective fisheries management strategic plans, *Dr. Yuttana Theparoonrat* presented the result of the workshop and SWOT analysis including the strategy for promoting co-management and rights-based fisheries.

At the closing of the workshop, the Deputy Secretary-General of SEAFDEC, *Mr. Kenji Matsumoto* said he was thankful to the participants for their active contribution and cooperation during the workshop, which achieved a great success. He valued the recommendations and suggestions that would be useful for the countries to develop the appropriate and effective fisheries management for the sustainability of fisheries resources.

Part 1: Report of the regional workshop

**REPORT OF THE REGIONAL WORKSHOP ON THE
PROMOTION OF STRATEGIC IMPLEMENTATION OF FISHERIES CO-MANAGEMENT
AND RIGHTS-BASED FISHERIES FOR ENHANCING GOOD GOVERNANCE IN
COASTAL AND INLAND FISHERIES MANAGEMENT
Bangkok, Thailand
2-3 February 2012**

I. INTRODUCTION

1. The Regional Workshop on the Promotion and Strategic Implementation of Fisheries Co-management and Rights-based Fisheries for Enhancing Good Governance in Coastal and Inland Fisheries Management was held in Bangkok, Thailand from 2 to 3 February 2012. The Workshop aimed to promote the practice of rights-based fisheries and co-management in order to improve small-scale fisheries management in the ASEAN region. The Prospectus of the Regional Workshop appears as **Annex 1**.

2. The Workshop was attended by representatives from Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Republic of the Union of Myanmar, Philippines, Thailand and Vietnam, and resource persons from the Department of Fisheries Management of the Faculty of Fisheries of Kasetsart University in Thailand, and Earth Net Foundation of Thailand. The SEAFDEC Secretary-General, Deputy Secretary-General, and officers from the SEAFDEC Secretariat and TD as well as members of the Regional Fisheries Policy Network (RFPN) based at the SEAFDEC Secretariat also attended the Workshop. The list of participants appears as **Annex 2**.

II. OPENING OF THE WORKSHOP

3. The Secretary-General of SEAFDEC, *Dr. Chumnarn Pongsri*, welcomed the participants and observers to the Workshop, and emphasized on the need to promote the concepts of co-management and rights-based fisheries in the Southeast Asian region, and to provide enabling environment to the member countries. He added that the Workshop was timely as it would help assess the progress of implementation of co-management and rights-based fisheries in the region as well as facilitate the exchange of experiences and lessons learned from such implementation. Moreover, the SWOT analysis to be conducted during the Workshop would give the participants an opportunity to discuss and come up with the appropriate and effective fisheries management for the sustainability of the fishery resources and for improved livelihoods of small-scale fishers. He insisted that the participants should bring forward their experiences whether successful or failures for a fair exchange as well as providing suggestions and recommendations in line of the Workshop objectives. His Opening Speech appears as **Annex 3**.

III. ADOPTION OF THE AGENDA

4. The Agenda of the Workshop, which appears as **Annex 4**, was adopted.

IV. BACKGROUND AND INTRODUCTION OF THE WORKSHOP

5. The importance of introducing rights-based fisheries to coastal small-scale and inland fisheries has been increasingly recognized in various technical and policy gatherings as a means to overcome the problems of over-capacity and IUU fishing. In this regard, there is a need to review the various on co-management and rights-based fisheries practices in the

Southeast Asian region; and SWOT analysis could be used to set the stage for improvement of the situation and to achieve sustainable management of fisheries resources. In order to share and exchange ways and strategies used in implementing co-management fisheries and rights-based fisheries for fisheries management, a Workshop was held.

V. OBJECTIVES AND EXPECTATIONS OF THE WORKSHOP

6. The Regional Workshop was specifically aimed at (1) reviewing applicable practices and application of co-management and rights-based fisheries to secure means of livelihood and sustainable coastal and inland fisheries; (2) identifying through the use of SWOT analysis the competency of applicable practices and lessons-learned on co-management fisheries and rights-based fisheries to bring about a more appropriate fisheries management for sustainability; and (3) formulating strategies for promoting the co-management and rights-based fisheries by applying the results of the SWOT analysis to achieving a good governance in coastal and inland fisheries management.

7. It was expected that the strategies indentified at the Workshop will be published as a guidebook for fisheries management authorities to consider and to select proper practices of co-management and rights-based fisheries for their future use.

VI. INTRODUCTION OF CO-MANAGEMENT AND RIGHTS-BASED FISHERIES APPLICABLE TO GOOD GOVERNANCE IN COASTAL AND INLAND FISHERIES MANAGEMENT

8. The resource person from the Earth Net Foundation of Thailand, *Dr. Supaporn Anuchiracheeva*, presented the concept of Co-management and Rights-based Fisheries Managemen, with a focus on the importance of these approaches as well as the experience and lessons learned in Bang Saphan District, Thailand. It was pointed out that not all fishing grounds and communities are suitable for rights-based fisheries management. In Bang Saphan Bay, for example, the area within 10 km from the shoreline was declared a protected area for the conservation of the existing marine resources that included coral reefs and mangroves. In other areas, even 5 km from shore could be difficult to manage especially in shallow coastal areas. Therefore, the concept of rights-based fisheries is site-specific where the management that has been successful in one area may not be applicable in the another. What important is to define the ecosystem in order to delimit the appropriate area for management.

9. While noting that the rights-based fisheries management is one of the management tools and the fishing rights is one of the tools to manage the ecosystem, the Workshop discussed the linkage between the management approaches in community-based fisheries and fisheries co-management. Specifically, the main difference between co-management and community-based fisheries management (CBFM) lies more in the implementation of the activities rather than on policies and regulations. In CBFM, focus is placed more on the conservation of the resources but not necessarily the beneficiaries (based on the fact that that the resources could be exploited by free-riders, and there is no high level administration involvement in the CBFM).

10. In the co-management, all stakeholders were said to get into the same boat although they are functioning at different levels, but sharing and cooperating in the implementation of the inter-related activities. As for the rights-based fisheries management, once the community has been given the rights established by the central government, the community is responsible for setting up their own regulations that entail their functions and responsibilities. However, since such rights emanate from constitutional rights, the central government could intervene by carefully putting certain restrictions in exercising such the rights.

11. Furthermore, all stakeholders in a co-management scheme are in all aspects responsible for the management, and the government is not necessarily taking the lead in its operations. Nevertheless, for an effective implementation of any management scheme, fishers should be made to understand the scope of resource management being promoted. Since the CBFM is linked to the common fisheries rights for managing the resources of a particular area, it could be embedded in a fisheries co-management. Nonetheless, CBFM is important for the Southeast Asian region, where the resources have been severely degraded.

VII. REVIEW OF APPLICABLE PRACTICES AND APPLICATION OF CO-MANAGEMENT AND RIGHTS-BASED FISHERIES TO SECURE MEANS OF LIVELIHOOD AND SUSTAINABLE COASTAL AND INLAND FISHERIES: SEAFDEC MEMBER COUNTRIES EXPERIENCE (REVIEW OF PROJECT, ACTIVITIES OR PRACTICES INITIATED BY EITHER LOCAL COMMUNITIES OR NATIONAL GOVERNMENTS RELEVANT TO CO-MANAGEMENT AND RIGHTS-BASED FISHERIES)

12. Representatives from the SEAFDEC Member Countries presented the reports on the roles, functions and practices played/performed by the local governments/organizations in their countries. Their reports also covered the management strategies for coastal and inland fisheries resources management, problems and constraints encountered. By and large, the lessons learned and experiences of the Member Countries were presented and discussed for consideration in future projects and activities.

7.1 Cambodia

13. “The Concept of Fisheries Co-management in Cambodia” was presented by *Mr. Ouk Vibol* of the Fisheries Administration of Cambodia. The co-management has been known under many names in Cambodia: participatory, collaborative, joint, mixed multiparty or round-table management. In addition, fisheries co-management generally takes the form as Community Fisheries. The results of a case study at the Seagrass Demonstration Conservation Site in Kampot, Cambodia were also presented. The main goal of the sea grass conservation project is to mitigate the threats to seagrass habitats by applying co-management strategy and plan that had been developed by the active stakeholders to ensure more sustainable use of the marine resources.

14. To manage the sea grass, most of the stakeholders, e.g., the Department of Agriculture, Department of Environment, Department of Tourism, and Department of Rural Natural Resource have been involved. Department of Fisheries and local community were mainly responsible for the management of its sea grass solution program. Cambodia has also adopted the MPA idea that has been made operative at many different levels, e.g., the community MPAs, national MPAs despite the fact that Cambodia’s propensity was to call them a Fisheries Management Area as stipulated in the fisheries law. There are, as of 2011, some 40 community coastal fisheries operating their respective fisheries management areas. In 2012, Cambodia intends to operate Fisheries Management Areas nationwide, which could cover a total area of about 370 km².

7.2 Indonesia

15. “Results of the Implementation of CBFM and Co-management of Patin Resources at Gajahmungkur” were presented by *Mr. Fayakun Satria* of the Research and Development Agency for Marine and Fisheries, Ministry of Foreign Affairs and Fisheries of Indonesia. An exotic species to Indonesia, Patin (*Pangasianodon hypophthalmus*) was introduced from Thailand as a means to increase fish production; it was introduced to a lake. The management

of Patin has become necessary in view of its decreasing production, and CPUE that indicated improvement on resource management should be attempted.

16. In the process, co-management was introduced to both fishers and aquaculturist groups as a means to avert conflicts between capture fishers and fish farmers. Specifically, the stakeholders involved in co-management included all fishers in capture fisheries and aquaculture, traders, the government, and others (boat builders, fishing gear makers, food processors, capitalists/funders, and so on). Monitoring activities had also been conducted, the results of which showed that the introduced species have no adverse impacts on local species while fishers and fish farmers were able to derive more income from Patin fisheries.

17. Although conflicts among resource users have been reported, the CBFM with fisheries co-management and rights-based fisheries have been considered beneficial from developing the Patin resources in the area, where the condition had since the Patin introduction had been improved. Based on the experience in Gajahmungkur, the management measures applicable to the situation include: defining reservation area for Patin, banning destructive fishing gear such as the “branjang”, putting in place an effective surveillance with active involvement of local fishers group, developing catch monitoring system, strengthening fisheries management body, and developing post-harvest technology and marketing.

7.3 Japan

18. “The Experience of Japan in Co-management and Rights-based Fisheries” was presented by *Mr. Hisashi Endo* of the Fisheries Agency of Japan who and mentioned that fishery management in Japan started during the Nara era which continued through the Edo era to the present time. In the current fisheries management scheme in Japan, multiple layers of management measures have been introduced, namely: measures based on consensus among fishers or self-imposed measures, and official control measures or compulsory measures. Zoning management system has been put in place as part of the self-imposed measures where each fisheries cooperative association (FCA) is given common fishery rights in a certain area with strict limited entry system (territorial use rights).

19. Since territorial use rights are allocated to fishers, attention is placed on the quality of their areas of responsibility in addition to also placing attention on the status of the stocks and the sustainable use of their rights. The prefectural government, through fisheries coordination committee (FCC), also issues fisheries permission scheme limiting the number of small-scale fisheries allowed in a prefecture. Since FCC is a prefectural organization, there is no representative from the national level sitting on the FCC, but the FCC could advise the government on matters relevant to fisheries management in their particular prefecture.

7.4 Lao PDR

20. “The Experience of Lao PDR in Developing Co-management of Reservoir Fisheries in Nam Houm” was presented by *Mr. Akhane Phomsouvanh* of the Department of Livestock and Fisheries of Lao PDR. The Nam Houm Reservoir Fisheries Management Plan comprised main activities that included: creating public awareness about fisheries regulations, patrolling of fishing activities especially around the fish conservation zones during spawning season, conducting stock enhancement activities, establishing reservoir management funds, and gathering catch data. A permanent fish conservation zone (FCZ) has been established 1,500 m from the dam and is closed to all types of fishing gear all year round. Four additional seasonal FCZs are also situated in the headwater areas, which are closed areas during the

main fish spawning season usually starting from May until August of each year. The FCZs are regularly monitored, especially during the fish spawning seasons.

21. Serious attempts had been made to establish local institutions with the management responsibilities; but most have failed, largely in the matters related to financial sustainability after the project funding. Local governments are not well equipped to provide the necessary services for the fisheries management owing to their technical and financial limitations. In this regard, it is critical that the roles, functions, responsibilities, and authorities of the various institutions and administrative levels are clearly defined and specified in order to sustain fisheries management plans. In addition, it is important to establish effective, financially viable and functioning management institutions at the local level, and that self-sufficient system must be developed through institution building in order to promote a successful fisheries co-management in the country.

7.5 Malaysia

22. “Some aspects of the Coastal and Inland Fisheries Co-management in Malaysia” was presented by *Mr. Abdul Khalil bin Abdul Karim* of the Department of Fisheries Malaysia. For the management of small-scale fisheries, Malaysia has adopted various schemes that include: registration of fishers, issuance of identification cards to fishers, limited entry to locals only, zoning system, and CBFM. For marine resources, CBFM was first established in Kuala Teriang, Langkawi through the collaborative project of SEAFDEC and Department of Fisheries Malaysia. The economic activities included income generation and women’s group livelihood efforts, while environmental-related activities included conservation of resources. A management zone was established by the local fishers in the project area which has been declared a Prohibited Area.

23. For the CBFM of riverine resources, Malaysia has been promoting the “*tagal* system” which is a smart partnership between the local community and the government through the Department of Fisheries Malaysia. The *tagal* system is an example of a strategic implementation of fisheries co-management and rights-based fisheries for enhancing good governance in inland fisheries management. Although originally implemented in Sabah State, *tagal* system has already been replicated to other states such as in Pahang State.

7.6 Myanmar

24. The experience of “Myanmar in Co-management Fisheries in Duya Inn Leasable Fisheries” was presented by *Mr. San Aung* of the Department of Fisheries of Myanmar. The leasable fisheries in Duya Inn, Hinthada Township in Ayeyarwady Region covers an area of 700 acres. The fisheries management project in Duya Inn aims to promote sustainability of small-scale inland fisheries, as well as the resources and livelihood of resource users by encouraging fishers’ active participation in fisheries management, reserving conservation areas in fishing grounds, promoting fish processing and value adding of products, and promoting fishers’ groups and communities participation in fisheries management activities.

25. One of the outputs of the project is the establishment of conservation zone in Duya Inn, which is about 100 acres in surface area, to protect the fish resources and allow indigenous fishes to gather and find their niches in the lake. The project also encouraged local fishers especially the women’s groups to establish alternative livelihood through fish processing and value-adding. The concept of fish conservation zone and the experiences of this project would be replicated to other water bodies in the country.

7.7 The Philippines

26. “The experience of the Philippines in Small-scale Fisheries Management: co-management and rights-based fisheries” was presented by *Mr. Nestor D. Domenden* of the Philippine Bureau of Fisheries and Aquatic Resources (BFAR). The results of two case studies on co-management and two case studies on rights-based fisheries were elaborated. The two case studies on co-management were: (1) Establishment of Marine Protected Area/Fish Sanctuary known as the Bangrin Mangrove MPA, and (2) Establishment of Marine Parks/Zones. As for rights-based fisheries, *Mr. Domenden* chose to present the two case studies: (1) Small-scale Fisheries, and (2) Aquaculture (Mariculture).

27. On the establishment of Mariculture Parks, this has already been operating at a commercial scale throughout the country under the mariculture flagship program. The main species cultured are milkfish, grouper, snapper, sea bass, and siganids. On the other hand, under the co-management of payao or fish aggregating device, BFAR applies criteria for selecting appropriate and suitable areas for payaos based on areas identified by the fishers groups. The local government units are responsible for the construction of the payaos while the fisherfolk organizations provide the labor required. When a payao is turned over to fisherfolk organizations, they are responsible for the management of the areas, and issue regulations that active fishing gear should not be used in payao areas and that only members are allowed to fish in the payaos although outsiders could fish for certain fees established by the fisherfolk organizations.

28. The representative from the Philippines also mentioned that the rationale of using Juvenile and Trash Fish Excluder Device (JTED) in promoting the concept of co-management and rights-based fisheries is well recognized and understood by many operators in his country. In this connection, JTEDs have been adopted by no less than 10% of trawlers, and the use of JTEDs is expected to be used among the commercial fishing operators.

7.8 Thailand

29. Activities of the Bureau of Fisheries Administration and Management of the Department of Fisheries of Thailand were presented by *Mr. Suwat Wongsuwat*, who mentioned that the Bureau does not manage the resources but manage the people who utilize and manage the resources. He referred to activities undertaken by the Bureau in fisheries conservation which mainly aim to establish “prototype fisheries community” using participatory approach and co-management, e.g., development of crab bank system, rehabilitation of degraded resources, and ecotourism, the latter being used as source of alternative income for fishers.

7.9 Vietnam

30. The progress of the Cooperatives and Rights-based Management pilot project, as the Core of Co-management in Vietnam, was presented by *Ms. Nguyen Thi Trang Nhung* of the Vietnam Fisheries Administration, Ministry of Agriculture and Rural Development. Specifically, she highlighted the results of a pilot project on clam resources management, implemented in Thanh Phong, Ben Tre Province of Vietnam, where the government grants the rights to local communities to manage their own coastal areas. The community has coined a trade name of their clams as “Ben Tre Clam” which would be exported to the EU as soon sufficient information on the requirements of EU markets would be available.

VIII. SWOT ANALYSIS TO IDENTIFY THE COMPETENCY OF APPLICABLE PRACTICE AND LESSONS-LEARNED ON FISHERIES CO-MANAGEMENT AND RIGHTS-BASED FISHERIES TO BRING ABOUT PROPER AND EFFECTIVE FISHERIES MANAGEMENT FOR SUSTAINABILITY

31. For the SWOT analysis, the Resource Person, *Dr. Kungwan Juntarashote* explained the importance of SWOT analysis in the formulation of strategic planning for fisheries co-management. He proposed that in a strategic planning that makes use of SWOT as an acronym for **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats, the planners should be able to identify and capitalize on the strengths, overcome or minimize the weaknesses, take advantage of the opportunities, and address and respond to the threats. Considering that Strengths and Weaknesses are internalized in an organization, therefore they are more controllable/manageable. Particularly, existing weaknesses should be overcome in order to achieve the organizational goals. On the other hand, opportunities and threats are external factors that should be dealt with in an organization. An organization could take advantage of the opportunities in order to attain its goals; while threats should be addressed in order that the results could be beneficial to such organization.

32. For the purpose of the Workshop, the SWOT analysis for the planning of fisheries resources and co-management development should deal with five attributes, namely: natural resources, human resources, governance, management practices, and geographical areas. The results of the SWOT analysis for strategic planning in co-management are shown in **Annex 5**.

IX. STRATEGY OF PROMOTING CO-MANAGEMENT AND RIGHTS-BASED FISHERIES USING THE RESULT OF SWOT ANALYSIS TO ACHIEVE GOOD GOVERNANCE IN COASTAL AND INLAND FISHERIES MANAGEMENT

33. The result of the SWOT analysis was used for the strategic planning, which is aimed at achieving good governance in coastal and inland fisheries management. A theme of 17 measures to enhance fisheries co-management in Southeast Asia, as agreed at the Workshop is in **Annex 6**

X. DISCUSSION ON THE FUTURE ACTIVITIES

34. After discussing the future activities leading to sustainable management of coastal and inland fisheries resources, the Workshop formulated the following recommendations:

- a) To fill the gaps in implementation of the guidelines on co-management and rights-based fisheries management:
 - Conduct activities on value-adding and connect to market/production chain to improve income;
 - Assess advantages/disadvantages of zoning and are demarcation;
 - Take into account integrated approach when creating livelihood opportunities;
- b) To address legal issues in the community management concept to strengthen enforcement:
 - Tap local wisdom in exploitation of resources to be included in formal/legal frameworks;
- c) To enhance cooperation of stakeholders in implementing co-management:
 - Encourage fishers to adapt co-management practices;
- d) To apply most effective management approach, *e.g.*, co-management and rights-based management which are cost-effective:

- Strengthen extension activities;
- Train government officers on co-management.

XI. CONCLUSION AND RECOMMENDATIONS

35. The results of the workshop, especially pertaining to the SWOT analysis as well as the strategy for promoting co-management and rights-based fisheries were presented by *Dr. Yuttana Theparoonrat* of SEAFDEC/TD. He pointed out that the results of the SWOT analysis could be used as reference in the formulating a national strategic plan when a country is embarking on a fisheries management project.

XII. CLOSING OF THE WORKSHOP

36. The Deputy Secretary-General of SEAFDEC, *Mr. Kenji Matsumoto*, thanked the participants for their active participation and cooperation during the Workshop, which was a great success. He appreciated the fact that the recommendations and suggestions would be valuable for the member countries as it would pave the way towards the development of appropriate and effective fisheries management for the sustainability of their respective fisheries resources. He also expressed his gratitude for their active participation during the SWOT analysis. His closing statement appears as **Annex 7**.

Annex 1: Provisional prospectus

Background and Rationale

Since 2000, the Special 5-year Program on Sustainable Fisheries for Food Security in the ASEAN Region has been initiated and promoted through fisheries collaborative mechanism of ASEAN and SEAFDEC Member Countries in order to analyze fisheries situation and to discuss issues of concern to the ASEAN region, as well as to help formulate harmonized regional policies to ensure sustainable fisheries production and promote collaboration on the global initiatives.

Concerns over the long-term sustainability of fisheries resources using appropriate management mechanisms is vital for ensuring stable fish supply and achieving food security and related benefits in the ASEAN region both now and in the future. Each country has applied its own policy, legal and institutional or regulation frameworks to the management of their respective fisheries; as a result, these systems generally contributed to increasing fish production levels. However, there is, under this Special Program, a need to improve certain national fisheries management frameworks in order to accommodate the various emergent requirements for sustainable fisheries development in the region.

At the end of 2005 “The Regional Guidelines for Co-management Using Group User Rights for Small-scale Fisheries in the Southeast Asia” were developed through a series of regional consultations. Cambodia, Lao PDR, Thailand and Vietnam have taken some initiatives to improve their legal frameworks and national policy frameworks of coastal fisheries either through SEAFDEC or by their own efforts. The introduction of right-based fisheries to coastal small-scale fisheries and inland fisheries has been increasingly recognized in various technical and policy gatherings to overcome the problems of over capacity and reduction of IUU fishing impact.

Nevertheless, co-management and rights-based fisheries continue to require the needed enabling environment in the Southeast Asian region in order to move forward. The result of the ASEAN-SEAFDEC Conference convened on 13-17 June 2011 in Bangkok, Thailand was a confirmation of the importance of these two complementary approaches. Additionally, recommendations included the promotion of co-management, with the emphasis on empowerment of communities for dealing with external problems, designing of administrative and legal decentralization program, zoning of fishing areas coupled with identification of stakeholders and collaboration among local communities, government, researchers groups, NGOs and academics, etc.

Since the co-management has been formulated and promoted in the Southeast Asian region for many years, both success and failure of the practices in co-management and rights-based fisheries needed to be reviewed and clarified through SWOT analysis, aiming at amelioration of their condition to achieve sustainable management of fisheries resources and to improve small-scale fishers’ livelihoods. This Regional workshop aims to share and exchange means and strategies of implementing co-management fisheries and rights-based fisheries for fisheries management. Comments and recommendations as a result of the workshop will be readily available for the formulation of national strategies for further implementation. The workshop also aims to provide a realistic set of criteria for the selection of proper strategies leading to good governance in coastal and inland fisheries management, respectively. Outputs of the workshop will be published as a guidebook for fisheries officials and local user organizations.

Objectives

The overall objectives of the project:

- To promote the practices of rights-based fisheries and co-management for better small-scale fisheries management in ASEAN region.

The objectives of the regional workshop:

1. To review applicable practices and applications of co-management and rights-based fisheries to secure means of livelihood and sustainable coastal and inland fisheries;
2. Using SWOT analysis to assess the applicable practices and lessons-learned on co-management fisheries and rights-based fisheries;
3. To formulate strategies for the promotion of co-management and rights-based fisheries by applying the results of SWOT analysis to achieve good governance in coastal and inland fisheries management.

Expected Outcomes

- The strategies will be published and distributed as a guidebook to fisheries officials and local management organizations for the coastal and inland fisheries resources management in ASEAN region

Date and Venue:

The workshop is scheduled to be held on 2-3 February 2012 at Jasmine Executive Suites Hotel, Bangkok, Thailand.

Proposed Participants:

The following government officials and scientists with expertise in either coastal or inland fisheries management for small-scale fisheries:

1. Representatives from the SEAFDEC Member Countries, scientists or officers responsible for coastal fisheries management particularly related to co-management or rights-based fisheries management; and
2. Representatives from SEAFDEC Secretariat and Training Departments;
3. Two resource persons in the fields of coastal and inland fisheries management for small-scale fisheries.

Annex 2: List of participants

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Annex 3: Opening speech (2 February 2012)

By Dr. Chumnarn Pongsri

SEAFDEC Secretary-General and Chief of SEAFDEC Training Department

Regional Workshop on Promotion of Strategic Implementation of Fisheries Co-management and Rights-based Fisheries for Enhancing Good Governance in Coastal and Inland Fisheries Management
2-3 February 2012

SEAFDEC Deputy Secretary-General, Mr. Kenji Matsumoto,
Representatives from the SEAFDEC Member Countries,
Resource Persons, SEAFDEC Staff,
Ladies and Gentlemen, Good Morning!

On behalf of SEAFDEC, I am very pleased to welcome all of you to the Regional Workshop on Promotion of Strategic Implementation of Fisheries Co-management and Rights-based Fisheries for Enhancing Good Governance in Coastal and Inland Fisheries Management.

Ladies and Gentlemen, we are all aware that the fisheries sector has been providing significant contributions to food security for people in our region. However, such feat may not be sustained if problems in the fisheries sector continue to hover due to degradation of resources in both inland and marine environments. Meanwhile, population and demand for food fish keep on increasing and influencing the desire for increased fish production which could eventually lead to resource overexploitation. Given this concern, countries in the region have been trying to solve the problem and continue to seek appropriate means of properly managing the fishery resources to enhance their respective economies and social well-being of their people.

After the Code of Conduct for Responsible Fisheries was adopted in 1995 as a framework for the development of national and international policies on sustainable exploitation of aquatic resources in harmony with the environment, SEAFDEC regionalized the Code and developed four sets of guidelines on fishing operations, aquaculture, fisheries management and post-harvest practices and trade for the Southeast Asian region. Subsequently, the Regional Guidelines for Co-management Using Group User Rights for Small-scale Fisheries in Southeast Asia also were developed in 2006 as supplementary tools for achieving sustainable fisheries management and combating IUU fishing in our region.

Nevertheless, there is still the need to better understand the concepts of co-management and rights-based fisheries to ensure their successful application in our region. For this reason, we are having this two-day workshop starting today until tomorrow to assess the progress of implementation of co-management and rights-based fisheries as well as to exchange experiences and lessons learned from such implementation. In reviewing the practices adopted in our region with respect to co-management and rights-based fisheries, we will carry out a SWOT analysis to come up with the appropriate and effective fisheries management for the sustainability of the fishery resources and to secure the livelihoods of small-scale fishers.

Ladies and Gentlemen, I strongly believe that this is an opportune time to develop and clarify the application of fisheries co-management and rights-based fisheries as called for in the Resolution and Plan of Action adopted in June 2011. Therefore, I would like to encourage all of you to take active part in the discussions and to share your experiences whether successful or failures as well as provide suggestions and recommendations during the workshop. I am sure that your valuable contributions and inputs would enable us to achieve good governance in coastal and inland fisheries management for the sustainability of fisheries and ensure food security in our region.

Let me welcome you again to the workshop and hope that we will have fruitful deliberations. Lastly, allow me now to declare the workshop open. Thank you very much and have a good day!

Annex 4: Provisional agenda and time table

Thursday 2, February 2012	
0830-0900	Registration
0900-0915	Agenda 1: Opening of the Workshop and Welcome Remark by SEAFDEC Secretary General
0915-0930	Agenda 2: Adoption of Agenda and Arrangement
0930-1000	Agenda 3: Background and Introduction of the workshop
<i>1000-1030</i>	<i>Coffee Break and Group Photography</i>
1030- 1100	Agenda 4: Introduction of Co-management and Rights-based Fisheries applicable to good governance in coastal and inland fisheries management
1100-1200	Agenda 5: Review applicable practice and application of co-management and rights-based fisheries to secure means of livelihood and sustainable coastal and inland fisheries: SEAFDEC member countries experience (Review project, activities or practices initiated by either local community or national government relevant to co-management and rights-based fisheries) - Cambodia, Indonesia, Japan
<i>1200-1330</i>	<i>Lunch Break</i>
1330-1500	Agenda 5: Review applicable practice and application of co-management and rights-based fisheries to secure means of livelihood and sustainable coastal and inland fisheries: SEAFDEC member countries experience (review project or activities or practices initiated by either local community or national government relevant to co-management and rights-based fisheries) (cont' d) - Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Vietnam
<i>1500-1515</i>	<i>Coffee Break</i>
1515-1730	Agenda 6: SWOT analysis to identify competency of applicable practice and lesson-learned on fisheries co-management and rights-based fisheries brought a proper and effective fisheries management for sustainability
Friday 3, February 2012	
0900-1030	Agenda 7: Formulate strategy of promoting co-management and rights-based fisheries by using result of SWOT analysis to achieve good governance in coastal and inland fisheries management.
<i>1030-1045</i>	<i>Coffee Break</i>
1045-1200	Agenda 7: Formulate strategy of promoting co-management and rights-based fisheries by using result of SWOT analysis to achieve good governance in coastal and inland fisheries management. (cont' d)
<i>1200-1330</i>	<i>Lunch Break</i>
1330-1500	Agenda 8: Discussion on the future activities
<i>1500-1530</i>	<i>Coffee Break</i>
1530-1630	Agenda 9: Conclusion and Recommendation
1630-1645	Agenda 10: Closing of the Workshop by SEAFDEC Deputy Secretary General

Annex 5: Strategic Planning in Co-management (SWOT analysis)

Strengths	Weaknesses	Opportunities	Threats	Remarks
Natural resources	Natural resources	Natural resources/productions	Natural resources	Remarks
- Potential productivities	- Degraded coastal resources Measures: (Senegal: rehabilitation, biological rests, MPA and networking, Artificial reefs, responsible fishing practices) SEA: JP: reduction of fishing effort>>relevant rehabilitation measures e.g. seagrass beds Summary: rehabilitation, conservation and improved fisheries management	- Increasing demand in world fish market Measure: promote eco-labelled fish products in communities	- Climate change and natural disasters Measures: raise awareness on the impacts of climate change, be prepared, conduct study to enhance resilience on impact of climate change - information dissemination through multi-media system targeting the fishing communities -conduct research program essential to promote co-management	- Maintain flexibility in plan
-	- Boundaries not clearly defined Measures: demarcation of fishing grounds/boundaries with assurance of clarity (zoning)	- Increasing demand for safe and quality products (e.g. eco-labelled products, BMP products) Measure: improved quality of traditional fisheries products	- Increasing land-based development activities (e.g. destruction of natural habitats, promotion of tourism activities) Measure:	- Minimum requirement if any
-	-		- Improper and irresponsible exploitation of resources Measure: strengthen enforcement, promote responsible fishing gears/practices,	- Must plan for
Human resources	Human resources	Human resources		
- Availability of fisheries production groups (e.g.	- Insufficient knowledge and inadequate	- Improved livelihood opportunities (e.g.	- Habitat degradation Measure: promote	- Must plan for

women, youth)	<p>understanding of co-management</p> <p>Measures: raise awareness through media, education, training on-site. Exchange of experiences and lessons learned from co-management activities, strengthening the roles of extension workers</p>	<p>ecotourism activities, local business ventures)</p> <p>Measure: prepare</p>	<p>precautionary approach to rehabilitation of habitats e.g. seagrass beds, coral reefs, mangrove areas</p>	
- Positive attitude (willingness to cooperate)	<p>- Poverty in communities</p> <p>Measure: improved livelihoods, establishment of community central fish market, promote fish processing and value-adding, promote home stay and ecotourism, change attitude of fishers from amount-oriented to price-oriented catch</p>			
	<p>- Insufficient number of staff to implement activities</p>		-	
	<p>- High aged fishers</p>		-	
Governance	Governance	Governance	Governance	
- Good policy support		-	<p>- Political intervention in management</p> <p>Measure: raise awareness of policy makers and other stakeholders</p>	- Maintain flexibility in plan
- Support of local authorities	<p>- Overlapping jurisdictions among several agencies concerned</p>		<p>- Competitiveness of utilization of resources among users (e.g. conversion of mangrove areas to shrimp farms)</p> <p>Measures: strengthening zoning management plan, participation</p>	- Must plan for

			of all stakeholders in co-management	
- Strong fisheries communities/institutions	- Implementing community officers not given authority in decision-making	-	- Encroachment of illegal fishers Measure: raising awareness through multi-media system, regional/community cooperation of monitoring system (e.g. MCS)	- Must plan for
- Initial legal framework to support	- Insufficient essential research programs	-	-	-
Management practices	Management practices	Management practices	Management practices	
		- Availability of financial support from donors Measure: prepare project proposals for submission to regional bodies/donors	- Strict requirements in international trade Measure: raise awareness on requirements in international trade and supervising/facilitating communities to cope with such requirements, improved quality of traditional fisheries products,	- Must plan for
- Autonomous enforcement by communities	- Insufficient system to sustain enforcement by communities	- Regional policy directives (e.g. ASEAN-SEAFDEC Resolution and Plan of Action towards 2020, relevant regional bodies' management frameworks)	- Inappropriate coastal development Measure: strengthen co-management in the application of integrated coastal zone management (ICZM) plan/spatial plan (coastal and inland)	- Maintain flexibility in plan
		- Improve cooperation among fisheries communities for proper implementation	- Un-continuous/insufficient financial support Measure: justify/prove that fishing communities need assistance to promote co-management, prepare good financial strategy to support	- Must plan for



			activities and good governance of the responsible agencies, create alternative livelihoods in communities	
Geographic areas	Geographic areas	Geographic areas		
- Long coastline				

Annex 6: Strategy: Efficient enhancement of co-management practices in SEA

Objectives:

- 1) To enhance fisheries resources for sustainable use
- 2) To improve livelihoods in communities
- 3) To promote responsible fisheries practices

Measures (based on results of SWOT analysis)	Guidelines
1) Degraded coastal resources <ul style="list-style-type: none"> • rehabilitation, conservation of resources • improved fisheries management 	
2) Boundaries not clearly defined <ul style="list-style-type: none"> • demarcation of fishing grounds/boundaries with assurance of clarity (zoning) 	
3) Insufficient knowledge and inadequate understanding of co-management <ul style="list-style-type: none"> • raise awareness through media, education, training on-site. • Exchange of experiences and lessons learned from co-management activities, • strengthen the roles of extension workers 	
4) Poverty in communities <ul style="list-style-type: none"> • improve livelihoods, • establish community central fish market, • promote fish processing and value-adding, • promote home stay and eco-tourism, • change attitude of fishers from amount-oriented to price-oriented catch 	
5) Climate change and natural disasters <ul style="list-style-type: none"> • raise awareness on the impacts of climate change, • promote preparedness of fishing communities • conduct study to enhance resilience on impact of climate change • disseminate information through multi-media system targeting the fishing communities • conduct research program essential to promote co-management 	
6) Improper and irresponsible exploitation of resources <ul style="list-style-type: none"> • strengthen enforcement, • promote responsible fishing gears/practices, 	
7) Habitat degradation <ul style="list-style-type: none"> • promote precautionary approach to rehabilitation of habitats e.g. seagrass beds, coral reefs, mangrove areas 	
8) Political intervention in management <ul style="list-style-type: none"> • raise awareness of policy makers and other stakeholders 	
9) Competitiveness of utilization of resources among users (e.g. conversion of mangrove areas to shrimp farms) <ul style="list-style-type: none"> • strengthen zoning management plan, • enhance participation of all stakeholders in co-management 	
10) Encroachment of illegal fishers <ul style="list-style-type: none"> • raise awareness through multi-media system, • improve regional/community cooperation on monitoring system (e.g. MCS) • include monitoring systems e.g. habitat and resources degradation 	

monitoring, in co-management framework	
11) Strict requirements in international trade <ul style="list-style-type: none"> raise awareness on requirements in international trade and supervising/facilitating communities to cope with such requirements, improve quality of traditional fisheries products 	
12) Inappropriate coastal development <ul style="list-style-type: none"> strengthen co-management in the application of integrated coastal zone management (ICZM) plan/spatial plan (coastal and inland) 	
13) Un-continuous/insufficient financial support <ul style="list-style-type: none"> justify/prove that fishing communities need assistance to promote co-management, prepare good financial strategy to support activities and good governance of the responsible agencies, create alternative livelihoods in communities involve NGOs and fisheries industries in co-management for long term sustainability 	
14) Increasing demand in world fish market <ul style="list-style-type: none"> promote eco-labelled fish products in communities 	
15) Increasing demand for safe and quality products (e.g. eco-labelled products, BMP products) <ul style="list-style-type: none"> improve quality of traditional fisheries products 	
16) Improved livelihood opportunities (e.g. ecotourism activities, local business ventures) <ul style="list-style-type: none"> Prepare appropriate management plan 	
17) Availability of financial support from donors <ul style="list-style-type: none"> prepare project proposals for submission to regional bodies/donors 	

Annex 7: Closing speech (3 February 2012)

By Mr. Kenji Matsumoto
SEAFDEC Deputy Secretary-General

Regional Workshop on Promotion of Strategic Implementation of Fisheries Co-management and Rights-based Fisheries for Enhancing Good Governance in Coastal and Inland Fisheries Management

2-3 February 2012

SEAFDEC Secretary-General, Dr. Chumnarn Pongsri,
Representatives from the SEAFDEC Member Countries,
Resource Persons, SEAFDEC Staff,
Ladies and Gentlemen, Good Afternoon!

After a very hectic two-day discussion, I would like to extend my sincere gratitude and appreciation to all the participants for your active participation and cooperation during the workshop. Your efforts have indeed led to the success of this workshop and I would also wish to thank those who have worked hard for the smooth arrangements of this workshop.

Ladies and Gentlemen, during this two-day discussion, we really worked hard to attain our objectives. Your suggestions and recommendations have been valuable and have significantly paved the way towards the development of appropriate and effective fisheries management for the sustainability of fishery resources. We also appreciate very much your active involvement during the SWOT analysis where your experiences have counted a lot. Please be assured that the outcome of the workshop will be synthesized, the results of which will be used as basis for the formulation of strategies in planning for good governance schemes for sustainable coastal and inland fisheries resources management in our region.

Lastly, I would like to reiterate my gratitude to all of you for your valuable time and your active participation during the workshop.

Ladies and Gentlemen, as I now declare the workshop closed, I wish you will have safe journey back to your home countries. Thank you!

Part 2: Presentation in the regional workshop

Presentation by the resources persons

**“Introduction to co-management and rights-based
fisheries management”**

by

**Dr. Supaporn Anuchiracheeva
Earth Net Foundation, Thailand
E-mail: nuchanu@gmail.com**

Introduction to Co-management and Rights-based Fisheries Management



*SEAFDEC Workshop on
Promotion of Strategic Implementation of Fisheries Co-management and Rights-based Fisheries for
Enhancing Good Governance in Coastal and Inland Fisheries Management,
2-3 February 2012, Bangkok, Thailand*

Supaporn Anuchiracheeva

1

Unique Feature of Fisheries Sector



2

1. Common Pool (Renewable Natural) Resources (CPR)

- Fisheries industry is based on common pool resources.
- Renewable but destructible. They may be renewed under proper management.
- Ownership of Resources is not clear.
 - Fisheries Resources are migrating across legal borders,
 - Fisheries Resources are not directly visible.
- Ownership of Fisheries resources can be confirmed when fish is actually caught.

3

2. Common Pool Resources (CPR) under Open Access Regime

- It is costly or difficult to exclude potential beneficiaries from obtaining benefits from its use (*Berkes, F., T.M. Farvar, 1989, Ostrom, 1990*).
- ...everybody's property is nobody's property. Wealth that is free for all is valued by no one ... The fish in the sea are valueless to the fishermen, because there is no assurance that they will be there for him tomorrow if they are left behind today (*Gordon, 1954*).
- At present an incentive is to catch as much fish as possible before others do
- Access is free, making exploitation appear attractive and encouraging increased effort levels. Improvements in the environment and other factors (e.g. high price of catch, fuel subsidy) that make fisheries more profitable and promote overfishing.



Specific Biological Resources:

- Multi-species composition in the tropical waters, and single-specie in the temperate zone. Different in stock assessment methodologies and management measures are required.
- Migratory resources and no clear resource boundary.



Why Focus on Managing Coastal Fisheries ?



Why Focus on Managing Coastal Fisheries ?

- Coastal waters are often considered as critical habitats for commercially important aquatic resources.
- High pressure of fisheries problem: open access condition, over fishing capacity, and declining of fisheries resources
- Crucial to develop appropriate fisheries management system and conservation mechanisms which equipped to analyze economic and social issues.



Why Focus on Managing Coastal Fisheries ?

- In ASEAN countries small-scale fisheries constitute the major part of the fishery sector
- Contributions to local food security
- Sustainable livelihoods and poverty alleviation
- Weak sub-sector in terms of financial and technical capabilities
- Require support from the government to maintain social and economic securities in the rural area.



Why Co-management?

- Search for better management options
 - Ineffective centralized fisheries management is the need to change the structure of governance. Fishers can no longer depend on government to solve their problem,
 - Conventional fisheries management approach has been widely called part of the problem rather than of the solution of resource exploitation,
 - The crisis in fisheries and coastal community is pressuring national governments to look for alternative management strategies, (Many gov. view co-management as a way to deal with the crisis)
 - International donors and development agencies constitute another force driving co-management,

9

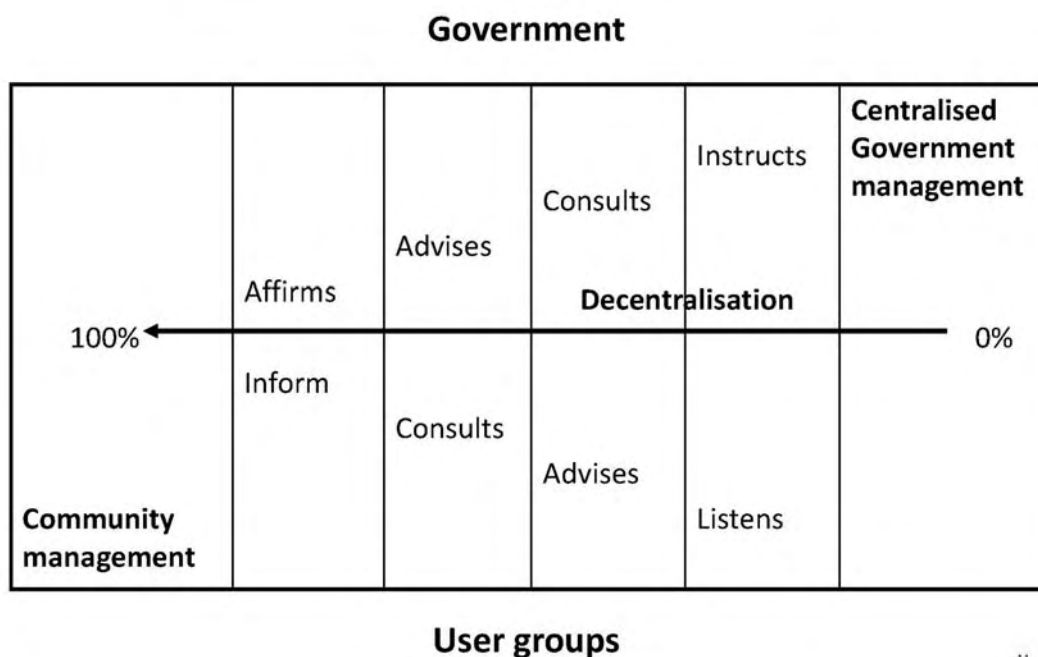
What is Co-management ?

Co-management is defined in different ways by different authors. The difference is not the contradiction of the meaning but it is the degree of participation of the involved parties.

- Sharing decision making, and management functions (*Charles, 2001*),
- Sharing power and responsibility (*Berkes, 1991*),
- Share responsibility for resource management (*Sen & Nielsen, 1996*),
- Collaborative and participatory process of regulatory decision-making (*Jentofe, 1998*),
- Cooperative organization, share responsibilities for management functions. (*Kuperan & Abdullah, 1994*),
- Sharing of decision-making power, responsibility and risk (*NRTEE, 1998*).

10

Co-management spectrum



11

- No one model, but a spectrum of management approaches
- Consider now the roles of the community and of the Government. Particularly with respect to management functions.

12

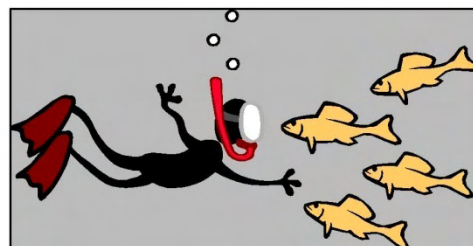
Co-management spectrum

Roles/Management functions	Community	Government
Formulate fisheries policy and management plan		
Make regulations		
Enforcement/patrolling		
Conflict management		
Stock Enhancement		
Capacity building		
Fish marketing		
Facility/equipment Dev.		

Advantage of Co-management

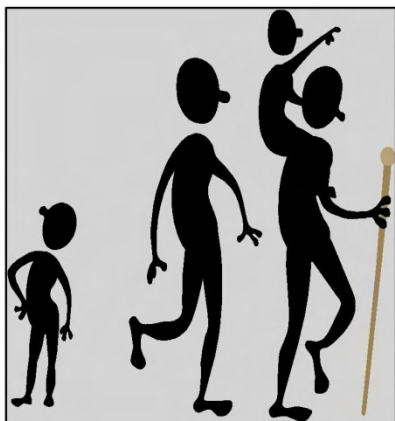
Environmental Gains

- Sustainable utilize fisheries resources: Create ownership on the resources: a powerful incentive, long-term asset.
- Conservation of fishing habitat: coral, mangrove, sea grass..



Advantage of Co-management

Social Gains



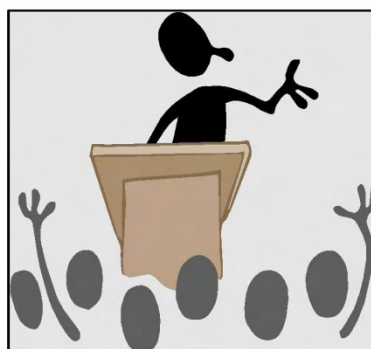
- More open, transparent autonomous management process,
- Minimize social conflict and maintain social cohesion: compliance with rules and regulations
- Create ownership and allow fishers take responsibility for number of managerial functions, allowing the community to develop flexible and creative management strategies that meet fishers' needs and local condition,

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Advantage of Co-management

Social Gains

- Adaptive management: lesson learn and adjustment
- Through the process, communities (individual) are empowering: knowledge, cognitive and practical skill,
- Can make maximum use of indigenous knowledge and expertise,

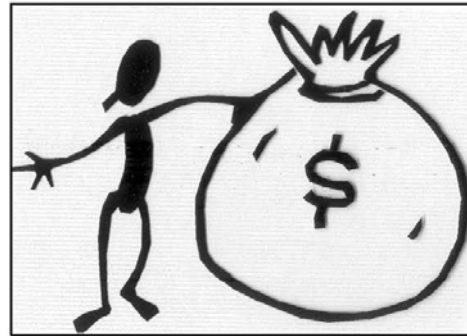


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Advantage of Co-management

Economic Gains

- More economical than centralized system, less spend on admin... and enforcement,
- Sustainable income from fishing occupation,



17

Limitations of Co-management

- Require leadership and appropriate local institution which may not exist in some communities,
- The risk involved in changing fisheries management strategies may be too high for some communities and fishers.
- The cost for individuals to participate in co-management strategies (time, money) may outweigh the expected benefits
- Sufficient political will may not exist,
- No guarantee that a community will organize itself into an effective governing institution.
- Particular local resource characteristics, such as fish migratory patterns, may make it impossible for the community to manage the resource.
- May not be suitable for every fishing community,

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Conditions Affecting the Success of Fisheries Co-management

- **Supra-community Level**
 - Policy support: Administration Arrangement and facilitating co-management
 - Legal support: Legal right to organize and implement co-management
 - External agents: understanding and willingness



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Conditions Affecting the Success of Fisheries Co-management

- **Community Level**
 - Clear defined boundaries,
 - Clear defined membership,
 - Group cohesion,
 - Participation by those effected (inclusivity)
 - Cooperation and leadership at community level,
 - Empowerment,
 - Use rights over the resource,
 - Partnerships and having sense of ownership of the co-management, and
 - Strong co-management institution.

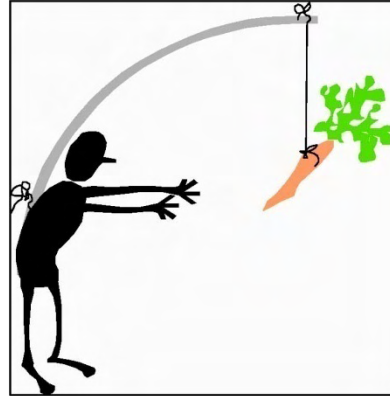


20

Conditions Affecting the Success of Fisheries Co-management

- **Individual Level**

- Individual incentive structure is responded
- Credible rules and effective enforcement



21



Rights-based Fisheries



Eight principles for long-enduring CPR institutions

Ostrom, E., 1990,

1. Clear defined boundaries
2. Congruence between appropriation and provision rules and local conditions
3. Collective-choice arrangement
4. Monitoring
5. Graduated sanction
6. Conflict-resolution mechanisms
7. Minimal recognition of rights to organize
8. Nested enterprises

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Attributes of successful common property regimes, *McKean, 1998,*

1. User group need rights
2. The boundary of resources must be clear,
3. The criteria for membership must be clear,
4. Users must have right to modify their use rules,
5. Use rules must correspond to what the system can tolerate,
6. Use rules need to be clear and easily enforceable,
7. Infractions of use rules must be monitored and punished,
8. Distribution of decision-making rights, and use rights of resources not be egalitarian but must be viewed as fair (acceptable by users),
9. Resolving minor conflicts need to be inexpensive and rapid method,
10. Institution for managing large system, devolution of authority to small components is needed.

24

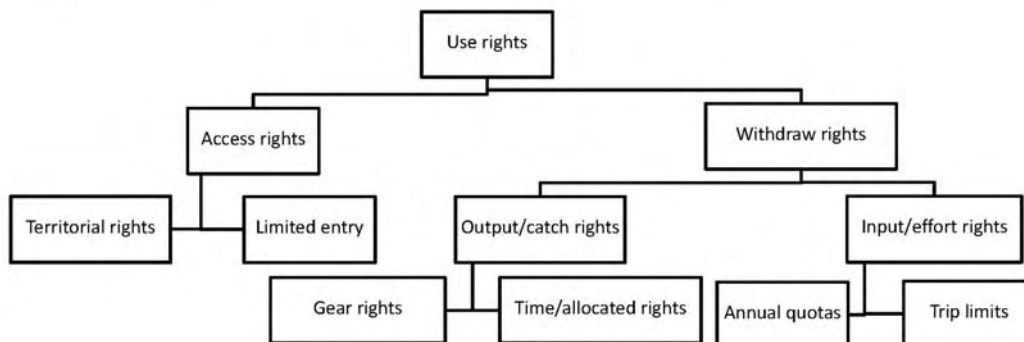
In fisheries management there are three basic type of rights,

L.G. Anderson, 2000,

1. Rights to utilize resources in a designated geographical area, which is Territorial Use Rights in Fisheries (TURF),
2. Input control in designated areas at specified times: licensing (limit amount of capital, labor, etc.),
3. Output control to harvest a specific amount of fish each year: Individual Transferable Quota (ITQ)

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Property Rights consists of use rights (access, withdraw) and management rights. (*Charles, 2000*)



management rights: Co-management is a kind of management right

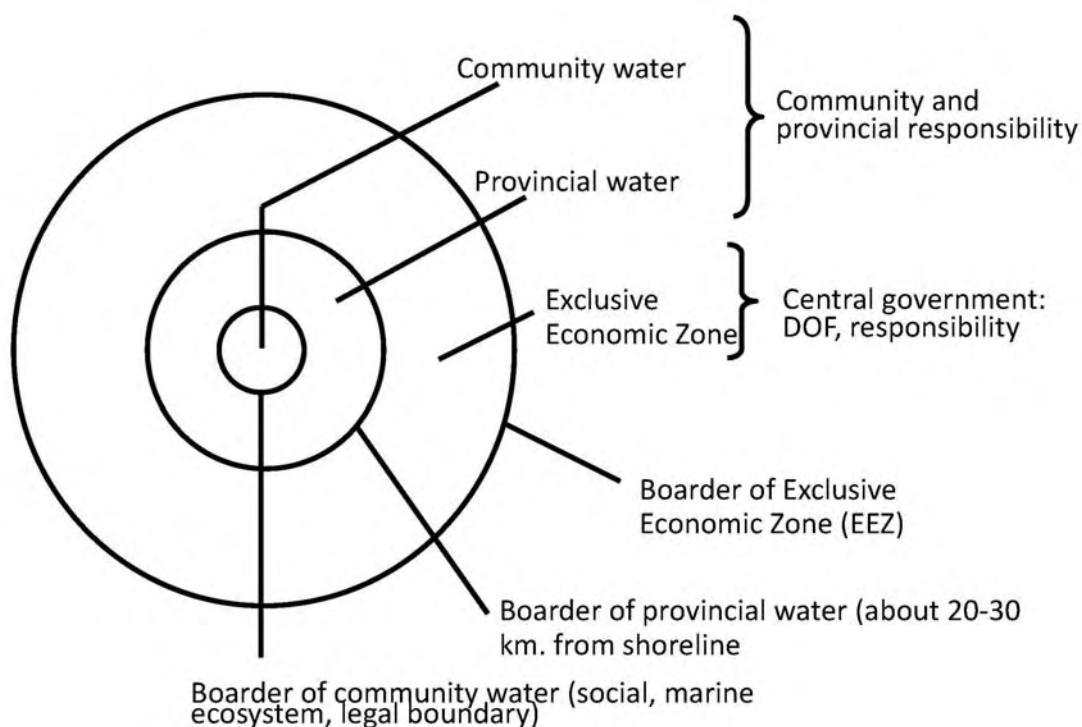
26

Fisheries Management Structure

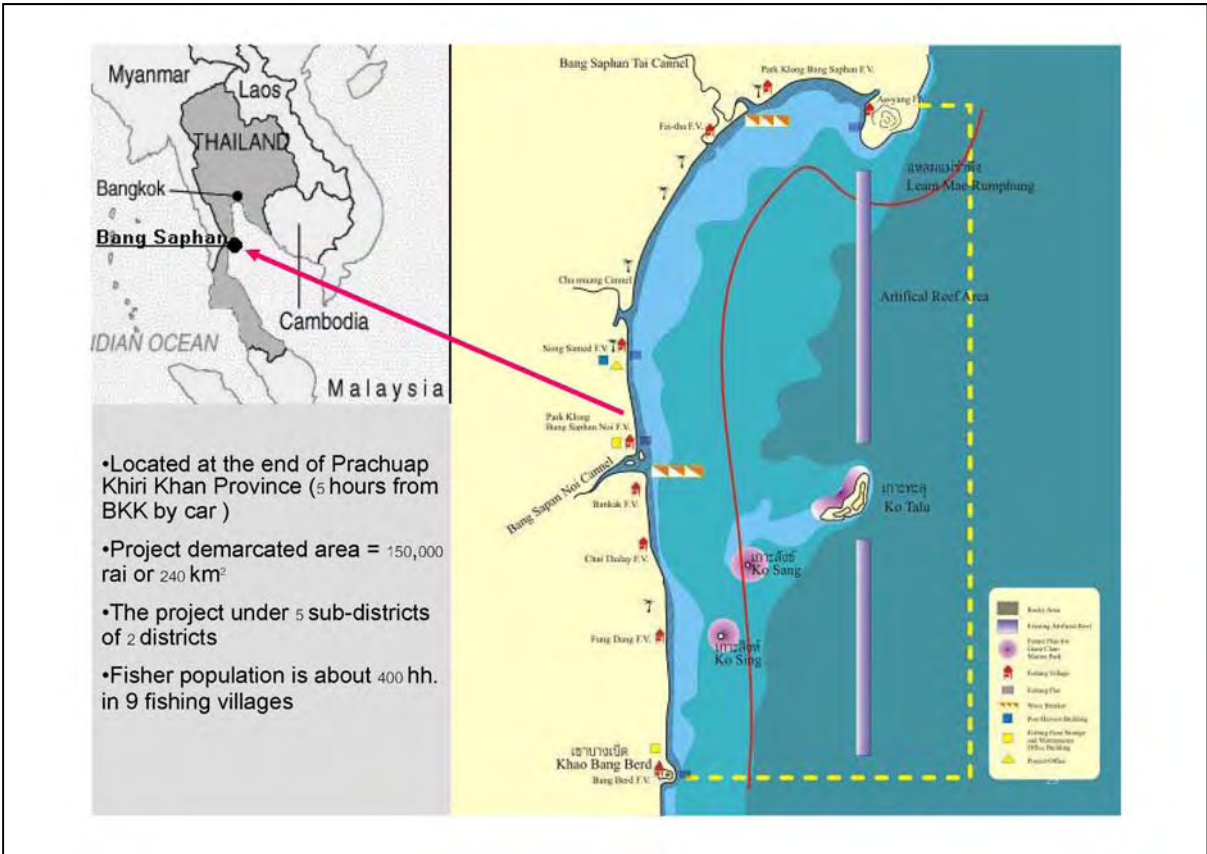
How many Parties/Government Administrative Units should be envisaged under the co-management and rights-based fisheries management system in the country?

1. Central Level: Department of Fisheries
2. Provincial level: Provincial Fisheries Office
3. Community level: Community Fisheries Management Organization

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“SWOT Analysis for fisheries planning”

by

Dr. Kungwan Juntarashote

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SWOT Analysis for Fisheries Planning

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SWOT Analysis History

SWOT analysis came from the research conducted at Stanford Research Institute from 1960 – 1970. The background to SWOT stemmed from the need to find out why corporate planning failed.

What is SWOT Analysis

SWOT analysis is an extremely useful tools for understanding and decision-making for all sorts of situations in business and organizations

SWOT

SWOT is an acronym of

S = Strengths

W = Weaknesses

O = Opportunities

T = Threats

SWOT works well in brainstorming meetings.

SWOT

- A widely used framework for organizing and using data and information gained from situation analysis
- Encompasses both internal and external environments
- One of the most effective tools in the analysis of environmental data and information

SWOT description

- A SWOT analysis generates information that is helpful in matching an organization's or a group's goals, and capacities to the social environment in which they operate
- It is an instrument within strategic planning
- When combined with a dialogue, it is a participatory process

SWOT

Factors affecting an organization can be classified as:

- **Internal factors**
 - Strengths (**S**)
 - Weakness (**W**)
- **External factors**
 - Opportunities (**O**)
 - Threats (**T**)

SWOT: Internal Factors

- **Strengths**

Positive tangible and intangible attributes, internal to an organization. They are within the organization's control
- **Weaknesses**

Factors that are within an organization's control that detract from its ability to attain the core goal. In which areas might the organization improve

SWOT: External Factors

- **Opportunities**

- External attractive factors that represent the reason for an organization to exist and develop. What opportunities exist in the environment which will propel the organization?
- Identify them by their “time frames”

SWOT: External Factors

- **Threats**

- External beyond an organization’s control, which could place the organization’s mission or operation at risk. The organization may benefit by having contingency plans to address them
- Classify them by their “seriousness” and “probability of occurrence”

For the External Factors

		Seriousness of Impact	
		Low	High
Probability of Occurrence	High	Minimum resources if any	Must plan for
	Low	Forget it	Maintain Flexibility in plan

Strengths and Weakness	The internal environment – the situation inside the organization	for example, wide fishing ground, key exporter in fisheries commodities, over fishing capacity, shortage of crews	Factors tend to be in the present
Opportunities and Threats	The external environment – the situation outside the organization	for example, declining of number of fishers in developed countries, regulations of importing countries, competitors in world market,	Factors tend to be in the future

SWOT analysis template

Subject of SWOT analysis: Fisheries Development Planning	
<p>Strengths</p> <ul style="list-style-type: none"> • Capabilities? • Competitive advantages? • Experience, knowledge, data? • Marketing? • Location and geographical? <p>Opportunities</p> <ul style="list-style-type: none"> • Fisheries industry trend? • Technology development and innovation? • New markets? • Competitors' vulnerabilities 	<p>Weakness</p> <ul style="list-style-type: none"> • Lack of new fishers and investors? • Fisheries resources depletion? • Fishery policy? • Fishery management program? • Institutional arrangements? <p>Threats</p> <ul style="list-style-type: none"> • Legislative effects? • Environmental effects? • Political effects? • Market demand? • Competitor intentions?

Create a Plan of Action

- **What steps can you take to:**
 - Capitalize on your strengths
 - Overcome or minimize your weaknesses
 - Take advantage of some new opportunities
 - Response the threats
- **Set goals and objectives, like with any other plan**

For a Productive SWOT Analysis

- Stay focused. Be specific and avoid grey areas. Keep your SWOT short and simple. Avoid complexity and over analysis
- Examine issues from the stakeholders' perspective
- Look for causes, not characteristics
- Separate internal issues from external issues

Caution

- SWOT analysis can be very subjective. Do not rely too much on it. Two people rarely come up with the same final version of a SWOT
- Use it as a guide and not as a prescription

Country papers

Cambodia

Ouk Vibol

Director of Fisheries Conservation Department

Fisheries Administration

Building 186, Preah Norodom Blvd

Sangkat Tonle Bassac

Khan Chamka Morn

Phnom Penh

Cambodia

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**The Regional Workshop on Promotion of Strategic
Implementation of Fisheries Co-management and Rights-based
Fisheries for Enhancing Good Governance in Coastal and Inland
Fisheries Management**



2-3 February 2012



Cambodian Country Presentation

Presented by: Ouk Vibol
Director of Fisheries Conservation Department
Facilitated by: Yos Chantana
Deputy Director of Marine Research and Development
Institute,
Fisheries Administration, Cambodia

1

Outlines

- **General information of fisheries characteristic**
- **Small-Scale Fisheries Management**
- **Concept of Fisheries Co-Management in Cambodia**
- **Royal Government of Cambodia on Community Fisheries**
- **Case Study: Seagrass Demonstration Site in Kampot, Cambodia**
 - Rationale, Goals and Objectives
 - Planned Activities
 - Main Outputs and Outcomes
 - Role of Community Member
 - Role, Function and collaboration of government/institution concerned
- **Way forwards of promoting co-management and/or right-based fisheries for small-scale fisheries management**
 - Positive Impacts of Fisheries Co-Management
 - Main Issues of Fisheries Co-Management
 - Solution for Improving Fisheries Co-Management

2

General information of fisheries characteristic

- Seasonal and permanent wetland cover more than 30% of Cambodia
- Fisheries provide full-time, part-time and seasonal employment for up to 6 million people
- Fisheries sector contributes very significantly to domestic food security, providing over 52.4kg/Year/person, 81.5% of the animal protein in the national diet
- Fisheries production is estimated to be worth around \$200-300 million per year (8-12% of GDP)

3

- ***Vision and major key target for 2010-2019***

Based on its overall goals for the future, the Royal Government's Vision for the fisheries sector is:

- *Management, conservation and development of sustainable fisheries resources to contribute to ensuring people's food security and to socioeconomic development in order to enhance people's livelihoods and the nation's prosperity.*

The key targets for the overall fisheries development programme are:

- Wild fish capture production is stabilized and sustained at not more than 500,000 tonnes per year.
- Rice field fish production is increased by 15% annually, to reach 500,000 tonnes per year by 2019.
- Aquaculture production is increased by 15% annually, to reach 185,000 tonnes per year by 2019.

4

Small-Scale Fisheries Management

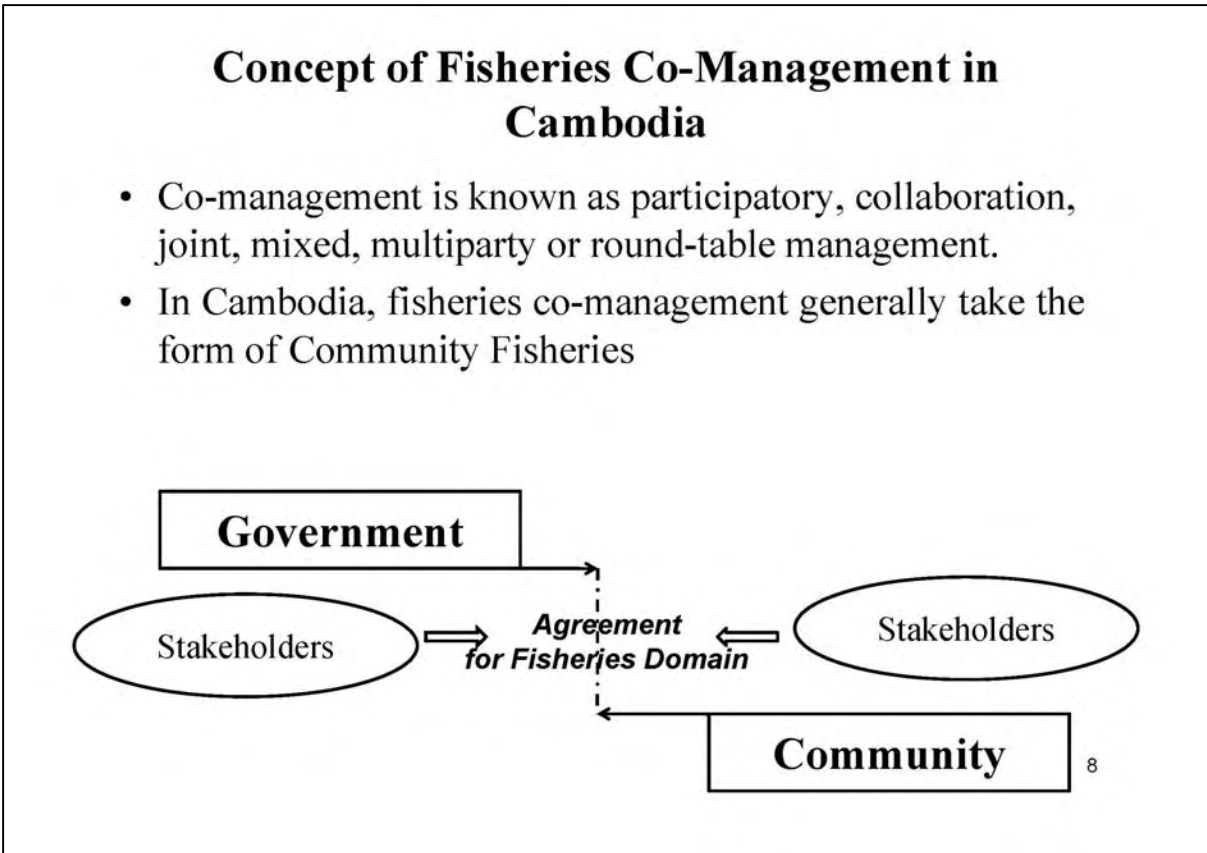
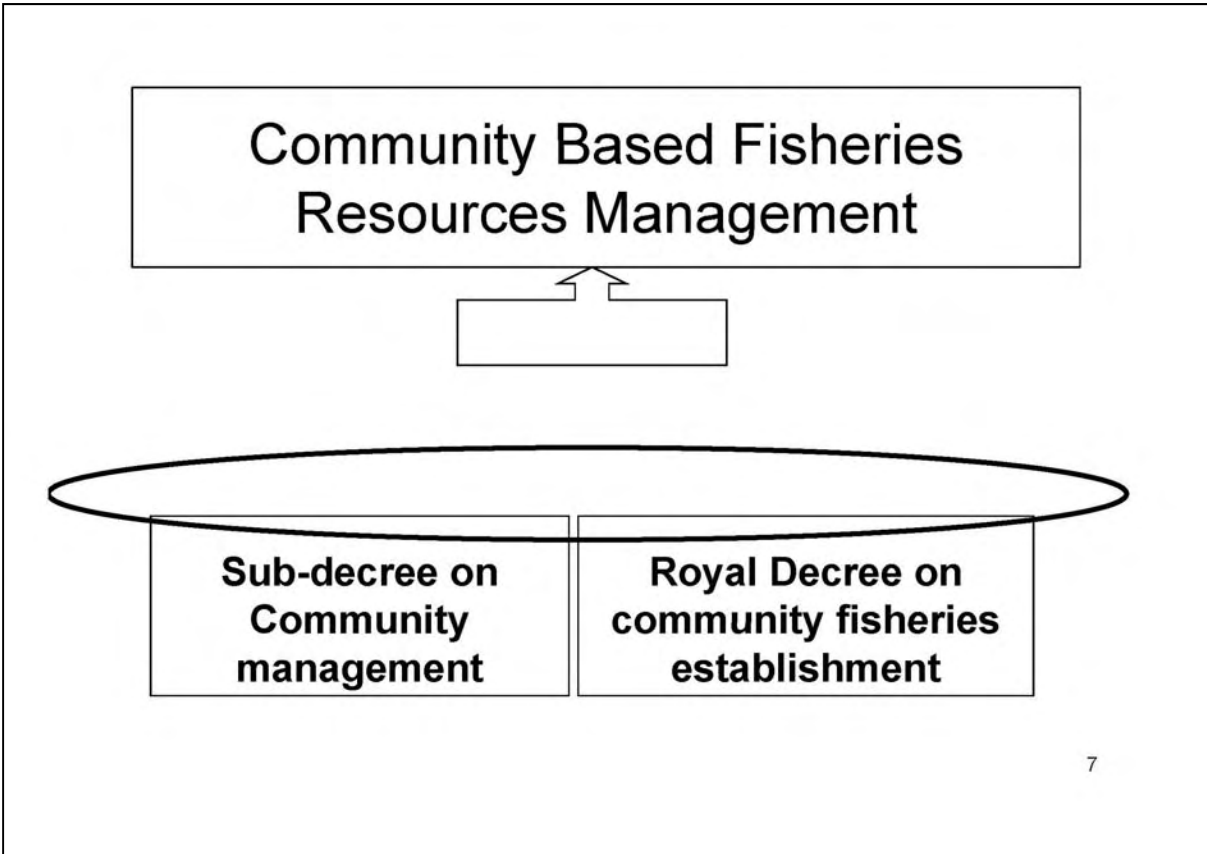
- Fishing practice is classified into 3 types:
 - Industrial-scale: *shall be operated only in fishing lots of inland or marine fishery domain at deeper water over than 20m by using large scale fishing gears with license*
 - Middle-scale: *shall be operated only in the open access area of the inland or marine fisheries domain at deeper water over than 20m by using middle scale fishing with license*
 - Small-scale fisheries: *shall be operated at anytime in the open access area and in the family scale fishing areas by using small scale fishing gear identified in the MAFF Proclamation.*
- Many conflicts between small scale and middle scale occurs along the coastline

5

Small-scale fisheries Management

- A majority of fishing in Cambodia are small scale
- The total fish catch production from small-scale has highest proportion comparing to others
- In addition, the small-scale and rice field fisheries have a combined production of 48-66% of total fish production
- Due to the encouragement from the Royal Government of Cambodia, small-scale fisheries is falling under the management regime of community fisheries (*Community Based Fisheries Resources Management*)
- So far, 470 community fisheries established and on operation

6



Royal Government of Cambodia on Community Fisheries

- Encourage the effective establishment of community fisheries by empowering local communities
- The Minister of Agriculture, Forestry and Fisheries, is entitled to allocate part of the Fishery domain to the Community Fisheries that live inside or around the fisheries domain as community fishing area
- The community fisheries have to sustainably manage their own areas following the plan, procedure and guideline of community fisheries.
- The Fishery Administration can provide the technical support to local community and evaluate and monitor the implementation of communities fisheries.

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Project/case study for small-scale fisheries management with concept of co-management and right-based fisheries

Seagrass Demonstration Site in Kampot, Cambodia



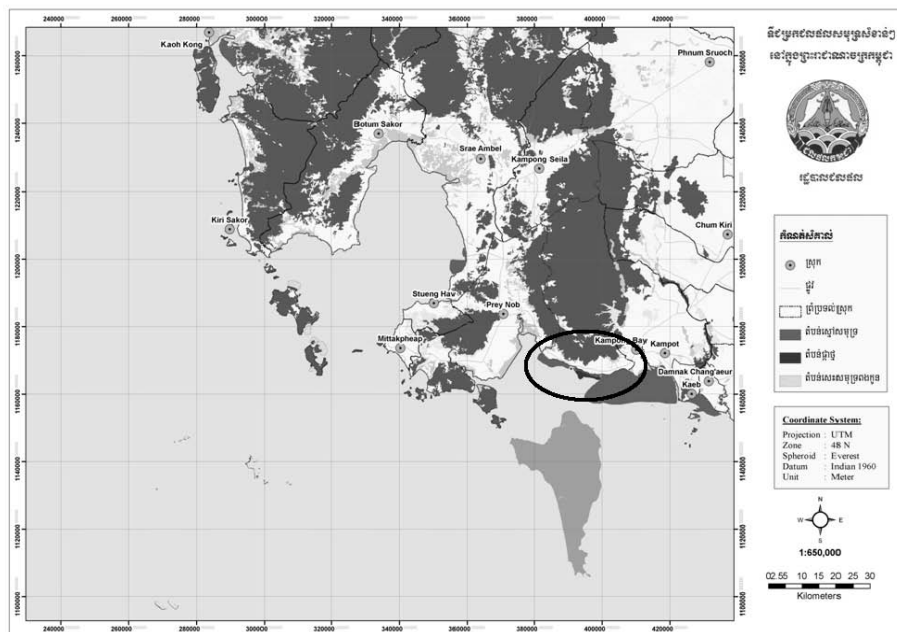
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Rationale, Goals and Objectives

• Rationale

- Kampot Province contains one of the largest areas of seagrass in the South China Sea
- Many local people are dependent on the marine resources for nutritional requirements and income generation
- Current patterns of use are however not sustainable: Trawling, motorized push netting, over-fishing and transboundary fishing problem
- Urgent need to develop a co-management plan that encompasses the needs of the various stakeholders, whilst at the same time conserving the resources

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- **Purpose**

- *To conserve seagrass habitat and biodiversity through enhancement of more sustainable uses of the seagrass habitat, and reduction of the impacts of human activities, through the application of a new co-management strategy.*

- **Goals**

- *To reduce the threats to seagrass habitats in Kampot Province by applying a co-management strategy and plan developed by the participating stakeholders to ensure more sustainable use of the marine resources.*

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Planned Activities

- Five main components of planned activities were designed for implementing
 - Component 1: Project Management
 - *National Actions*
 - *Bilateral Actions*
 - Component 2: Data and Information for Management Plan Purpose
 - Component 3: Development of Joint Management Plan
 - Component 4: Enforcement
 - Component 5: Public Awareness and Training

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Main Outputs and Outcomes

- A Management Board (MB) was established and chaired by the Provincial Governor with member of provincial technical departments, provincial military police and navy to provide oversight to project implementation.
- A Management Advisory Group (MAG) was established by Deika of Kampot Governor. This MAG is now chaired by Kampot Fisheries Administration Cantonment to manage project operation. The MAG worked closely with community and fishermen
- Due to transboundary issue, joint management meeting between Kampot and Phuquoc has done at all levels
- A team formed from community members were established by MAG to patrol and conduct monitoring in the conservation areas

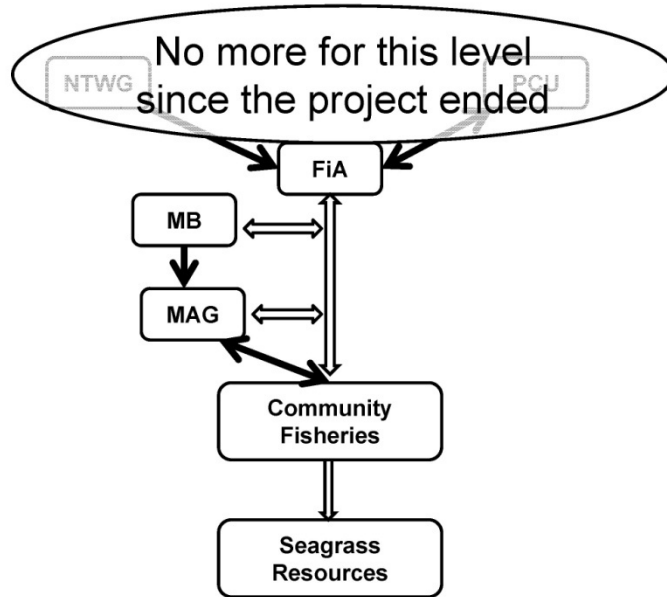
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Main Outputs and Outcome

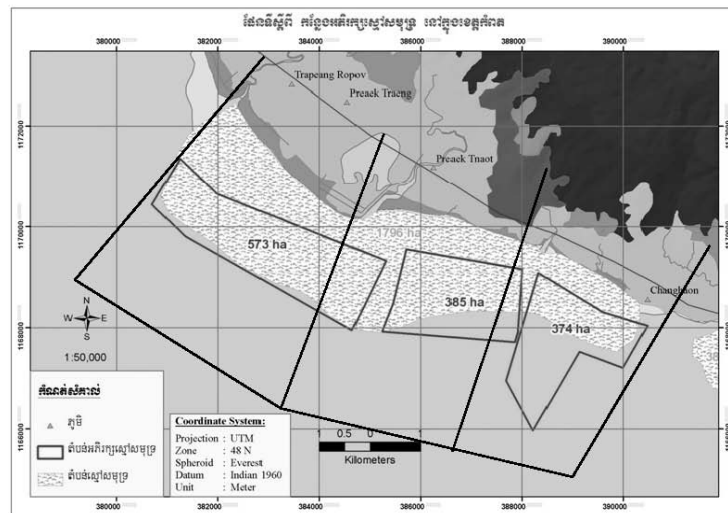
- Based on biological, socio-economic research and agreed by community, 900ha (22.5%) of seagrass out of 4,000ha of community area was put under the conservation form and the rest kept for small scale fishing
- So far, 450 concrete poles and 200 concrete boxes were dropped within the conservation area
- Community ranger regularly patrol and conduct monitoring
- Community officially recognized and registered by MAFF in march 2011
- Seagrass coverage increased from 35% to 65%
- Fish, shrimp and swimming crab catch from outside area increase by 15%
- Illegal fishing activities decrease from 80% down to 15%

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Chart of Management Framework



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Role of Community Member

Stakeholders	Roles
<p>Local Communities: Local fishers, Local communities, Village leaders, Seaweed farmers, Schoolchildren, Buddhism monks, Low income groups who entirely depend on seagrass,</p>	<ul style="list-style-type: none"> - Being the main target group; - Direct involving process of planning and implementing seagrass demonstration site; - Participating in patrolling, zoning and regulating; - Participating in training, study tour and site visit; - Supporting in raising public awareness; - Involving in alternative livelihood initiatives.
<p>Private sector: Commercial Fisheries Owners, Fish Processors, Transporters, Whole Sellers, Seaweed middlemen, Small businessmen. Tourists resort owners (potential),</p>	<ul style="list-style-type: none"> - Potential contributing to the conservation and management; - Attending training courses on sustainable resource uses and tourism development; - Participating in eco-tourism modelling.

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Role, Function and collaboration of government/institution concerned

Stakeholders	Roles
<p>National Government Agencies: FIA (MAFF),</p>	<ul style="list-style-type: none"> - Implementing the Demonstration Site; - Co-ordinating among members of MB, MAG, local authorities and donors - Facilitating joint activities with relevant institutions . - Supervising and guiding the implementation of the project; - National networking; - Monitoring and evaluation
<p>Local Authorities: Kampot Provincial Governor. Provincial-Technical Departments: KPFAC, DAFF, DoE, DoT, DRN, Border Army etc. District Governors.</p>	<ul style="list-style-type: none"> - Being members of MB and MAG; - Consulting (sub-contracts); - Supporting and participating in management and implement activities; - Supporting in law enforcement, research, and field trip; - Participating in awareness raising, policy and plan development; - Attending training courses, workshops and study tours;
<p>NGOs: DANIDA, JICA, UNDP/Small Grant Fund, FAO</p>	<ul style="list-style-type: none"> - Providing training courses on alternative jobs; - Participating in awareness and planning and developing strategy for management and conservation of resources; - Providing existing information and data of the site. - Providing additional fund

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Way forwards of promoting co-management and/or right-based fisheries for small-scale fisheries management

21

Positive Impacts of Fisheries Co-Management

- CF right has been empowered as fishers can speak out on fisheries issues, and approach official body for help
- Illegal fishing has been reduced markedly
- Most CFs conduct regular patrols and monitoring of their areas
- Some CFs have dropped concrete boxes, artificial reefs to prevent trawling operating
- Most CFs have received external support and funding

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Positive Impacts of Fisheries Co-Management

- Apart from fishing, CF members are engaging in a wide range of livelihood activities
- Many CFs have initiated and organized public meetings and forums with other stakeholders including villagers, village heads, schools, commune councils, communal police, provincial fisheries, NGOs, and navy

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Main Issues of Fisheries Co-Management

- Poor enforcement of fisheries laws is a constant problem for CFs due to poor intervention from local authorities or Provincial fisheries Cantonment
- More active of Co-management while having income or incentive support
- Illegal fishing is definitely much reduced, but still continues

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Solution for Improving Fisheries Co-Management

- Authorities who are falling in fisheries law enforcement need to be made accountable
- CF establishment and protection of fish sanctuaries should receive continuing support from government and donors
- Stronger efforts are needed to have the remaining un-registered CFs complete all of their documentation especially maps so they can be approved by the Ministry of Agriculture, Forestry and Fisheries
- Income generation for CF must be highly considered

25

THANK YOU
SO MUCH
FOR YOUR
ATTENTION



26

Indonesia

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**INDONESIA Country Report to the
Regional Workshop on Promotion of Strategic Implementation of Fisheries Co-
management and Rights-based Fisheries for Enhancing Good Governance in Coastal
and Inland Fisheries Management
SEAFDEC 2-3 February 2012**

1. Introduction

Indonesia is the world’s largest archipelagic nation, with 17,480 islands, 95,181 km coastline, 3.1 sq.km territorial waters, and 2.7 sq.km of Exclusive Economic Zone. National stock commission reported that total of marine fish stock was estimated 6.4 million mt/year (National stock commission 2009). It is estimated the production in 2010 was reached to 5.039.446 mt (Capture fisheries statistics of Indonesia, 2010). For fisheries management purpose Indonesia waters is divided into eleven Fisheries Management Areas (FMAs) (Figure 1).

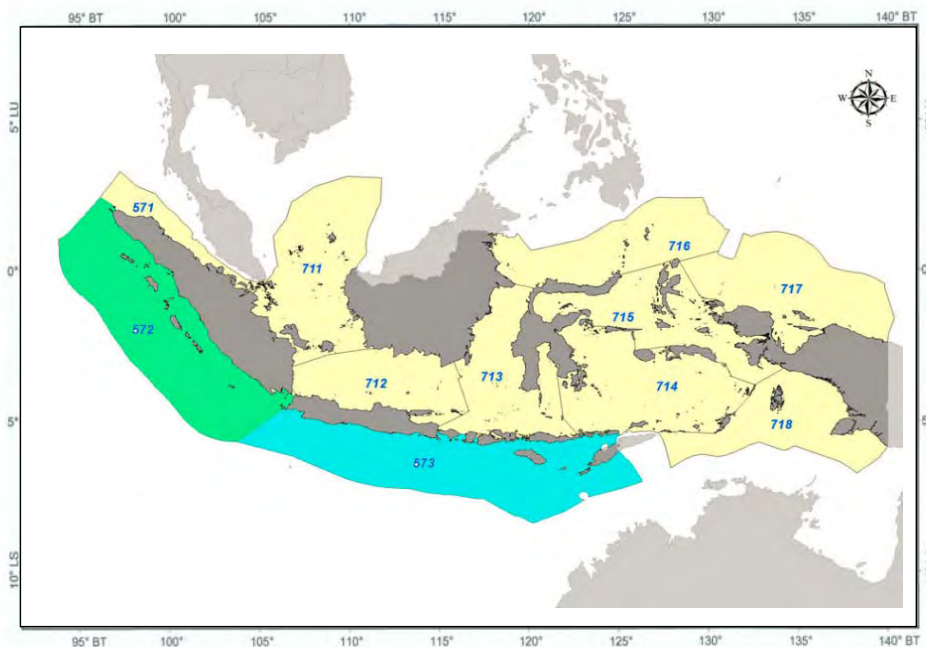


Figure 1. The eleven of fisheries management area in Indonesian marine waters

meanwhile Inland waters of Indonesia has a total area of 13.85 million ha composing of 12.0 million ha rivers and flood plains, 1.8 million ha natural lakes and 0.05 million ha man made lakes (Purnomo *et al* 2008). Total of fish potential yields of the inland waters was estimated to be 3,034,934 ton per yr. It is estimated the production of capture fisheries from inland waters in 2010 was 344.972 ton (Capture fisheries statistics of Indonesia, 2010).

The population of Indonesia stood around 237 million in 2010 (BPS 2010). In Indonesia most of the employed population (41.2 %) worked in the agricultural sector. The number of marine water fishers were about 2.620.277 (577.656 fishing households), and The number of inland openwater fishers were 457.835 in 2010 (313.849 fishing households) (Capture fisheries statistics of Indonesia, 2010). it is estimated that no less than 55 % are look after their livelihood from small scale fisheries sector.

Indonesia has faced complex problems involved in the managing of small scale fisheries. The fishery has very long been adopted an open access principle and recently trying to

understand and implement the limited access principle, precautionary principle, ecosystem approaches to management, Sustainable Livelihoods Approach, participatory methods and co-management as well as adaptive management and so forth. The challenge in applying these principles is the factual that the fishers community structure have very large number of fishers with low level of education or even illiterate and the level of poverty that laid in the region while mostly fishing is the main activities for their livelihood

In the other hand, the local wisdom in line with the principles of fisheries co-management has been practiced in several provinces in Indonesia since a long time ago for example “Sasi” in Maluku that prohibited harvesting natural resources including fishes for a period of time and in certain location. In Aceh there is common tradition with no fishing for every Thursday afternoon to Friday afternoon thus at least 4-5 days off for fishing within a month. Looking into these practices, our ancestors already have wisdom to limit their utilization on natural resources and have already practiced the principles of sustainable livelihood approach.

There are many issues related to the small scale fisheries both marine and inland waters in Indonesia. This report however, describe the example of co-management practice in Indonesia from inland fisheries with a combination between culture based fisheries and co-management applied to man-made lake in Wonogiri.

2. Institutional and Legal Background

All laws and regulations dealing with natural resources including fish have their roots in the 1945 Constitution, in particular Article 33, Sub-Article 3, which provides the legal basis for State control over Indonesia’s land and waters and the natural resources. According to UU RI No 31/2004 that revised in UU RI No 45/2009 concerning fisheries on article no 6 sub article 2 that fisheries shall be manage by the government with the involvement and participatory of community. The involvement of provinces and district government in the implementation of co-management is also mentioned in UU RI No 32/2004.

3. Case study for small-scale fisheries management with concept of co-management and right-based fisheries .

Rationale of the project/case study: issue and limitation

As a case study of small scale fisheries that have already take into practiced co-management fisheries in inland water is culture based Fisheries (CBF) that applied in “Wonogiri” man-made lakes. The culture based fisheries commonly implemented at man-made lakes or on small lakes through restocking fish from the cultured fishes to the suitable habitat. The restocked fishes could then forage food from the natural resources and growth normally, this practice is often combined with the aquaculture fisheries using floating cages. The combination then allow the fishes outside the floating cages consume or utilized the fish meal escaping from the cages, this practice could help reduced the waste of fish meal from the water body. Currently the CBF with co-management and right based fisheries has already been adopted as one of innovative fisheries management for inland waters in Indonesia.

Action plan/frameworks to implement the project/case study

To implement the culture base fisheries with co-management and right based fisheries in Wonogiri there are a framework necessary to undertake such activities:

- General overview of the fisheries in the area (fisheries Characteristic, community structure, indetified resources, water condition, a necessary data and information that

could be the best explaining the fisheries). In this case Wonogiri has already enough data and information.

- The involvement of local community together with government in managing and utilizing the resources with the concepts of co-management
- Finding suitable habitat and species prior to execute the restocking
- Execution of stock enhancement through restocking stage
- Conducting monitoring and evaluation as well as catch recording that conducted by designated community groups with assistance from government
- Defining limited take zone and no take zone area (reserve area)
- Defining Protected area ; Spawning and nursery ground
- Conducting Hatching through existing facilities from community and government
- Habitat management including
 - (1). Improving Vegetation and riparian
 - (2). Spawning and nursery ground Habitat rehabilitation and treatment
- Regulation on fisheries management including
 - (1). Best practice of fishing (gear and methods)
 - (2). Fishing season/time and location/fishing ground
 - (3). Setting Total allowable catch
- Consistent Assistance to fishers and community with adaptive management principle.
 - Assurance that the benefits greater than cost consequences
 - Active participatory among involved groups with similar objectives
 - Clear regulation with a factual implementation

Fishers participation in the project/case study

1. Fishers are participated in the following areas:
 - a. Agree to have introduced species/restocking/stock enhancement
 - b. Comply to not use destructive fishing , and not operate gill net with less than 2.5 inch mesh size
 - c. Not fishing within reserve area
 - d. Conducting self surveillance to the practice that prohibit by law and consensus
 - e. Providing seeds to be restocking
 - f. Contribute and paid levies for 1000 IDR /kg caught fishes
 - g. Participate actively in the training, public awareness etc conducted from government

Role, function and collaboration of government/institution concerned

1. Provide training required by fishers and community
2. Provide any legal and management measures required to ensure the sustainability of the resources
3. Provide hatched fishes to restocking
4. Facilitate regular meeting and coordination among fishers and government
5. Partner for fishers communities (fishing and aquaculture activities) in solving emerging problem or conflict
6. Conducting catch recording, monitoring and evaluation with the support of community.
7. Issued fishing right to the fishers and control the effort not exceed the carrying capacity of the resources

3. Way forwards of promoting co-management and/or right-based fisheries for small-scale fisheries management

In the future it is encourage to the government and community involved in the small scale fisheries to adopt the principle of co-management and right base fisheries as already stated in the national regulation. There are also spaces to have combination with other innovative management such us Culture based fisheries as long as it is not worsen the resources. In conducting the concepts of co-management there opportunities, constraints and need as pointed below:

Opportunity:

1. Fishers welcoming to any technology or management concepts introduced to them and have positive response as long as the technology demonstrate benefit to them
2. Fishers are more aware to the sustainability of their environment and resources
3. New recruitment of the fishers are more skilled and educated persons
4. There are existing fishers groups with similar background, culture and interest

Constraint:

1. Mostly the community involved in the small scale fisheries has a low level of income
2. There are invasive fishers from outside that difficult to cooperate with the existing tradition and practice
3. Habitat degradation due to anthropogenic activities
4. Climate change, environmental change.
5. Unstable price of fish especially during peak season
6. Lack of funding

Need:

1. More training and education to the fishers
2. Strengthen Monitoring and evaluation as well catch data recording
3. Build a better marketing and added value product.

Acknowledgement:

We acknowledge the support Southeast Asian Fisheries Development Center (SEAFDEC) for invitation and funding support to attend the meeting. We also particularly thanks to Dr. Endhay Kusnendar SEAFDEC Council Director for Indonesia for his directing to us to attend this meeting.

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The Implementation CBF and Co-management On the Patin Resources At GAJAHMUNGKUR



INDONESIA

Endi Setiadi Kartamihardja ¹⁾ and Fayakun Satria ²⁾

Research institute for fish resources conservation and treatment ²⁾

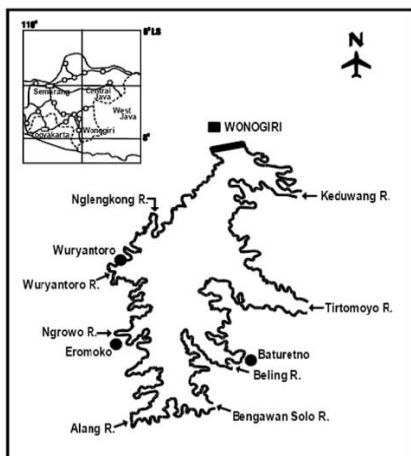
Research Center for Fisheries Management and Conservation ¹⁾

Research and Development Agency for Marine and Fisheries

Ministry of Marine Affairs and Fisheries



Description of “Gajahmungkur”

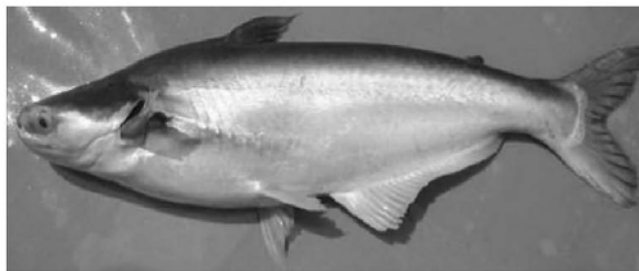


Parameter	Initial	Current
Maximum size (ha)	8.800	7.800
Minimum size (ha)	3.800	3.600
Depth max (m)	35,00	20,0
Depth Average (m)	8,50	6,0
Water Volume (km ³)	0,75	?
Coastal line (km)	110,0	?
Length Max (km)	13,86	?
Average width (km)	6,35	?
Tide fluctuation (m)	11,00	?

Relative density of fishes

No	Local name	Scientific name	1988	2002	2009
1.	Tawes	<i>Barbonymus gonionotus</i>	++	++	+++
2.	Bader	<i>Barbodes bramoides</i>	++	+	+
3.	Genggehek	<i>Mystacoleucus marginatus</i>	++	++	+
4.	Lukas	<i>Cyclocheilichthys apogon</i>	+++	++	++
5.	Palung	<i>Hampala macrolepidota</i>	++	+	+
6.	Nilem	<i>Osteochilus hasselti</i>	+	+	+
7.	Sogo	<i>Mystus nemurus</i>	++	++	++
8.	Garingan	<i>Mystus nigriceps</i>	++	+	+
9.	Kutuk	<i>Channa striata</i>	+	+	+
10.	Lempuk	<i>Callichrous bimaculatus</i>	++	+	+
11.	Sili	<i>Macrornathus aculeatus</i>	+	+	+
12.	Mas	<i>Cyprinus carpio</i>	-	+	+
13.	Nila	<i>Oreochromis niloticus</i>	-	+++	+++
14.	Patin Siam	<i>Pangasianodon hypophthalmus</i>	-	+++	+++
15.	Betutu	<i>Oxyeleotris marmorata</i>	-	++	++
16.	Bawal	<i>Colossoma macropomum</i>	-	+	+

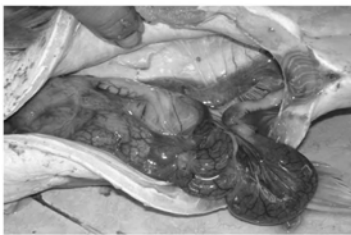
What is Patin?



- Patin siam, *Pangasianodon hypophthalmus*
- Synonym. *Pangasius hipophthalmus*/*P. sutchi*
- Introduced from Thailand in 1972
- Indonesia → 12 species, e.g. patin jambal, *Pangasius jambal*.
- Adult: 2-3 year, weight: 1,5-2,0 kg

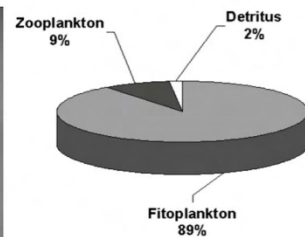
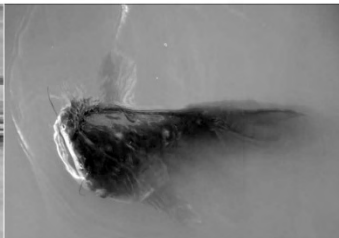
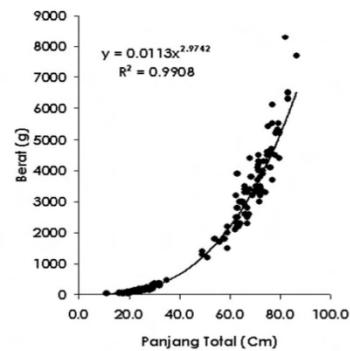
Why Patin introduced at Gajahmungkur

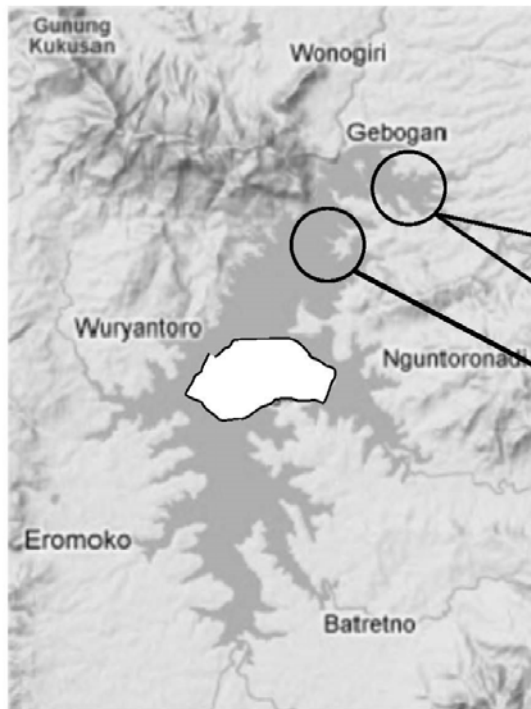
- Objectives of introducing "patin":
 - Fulfill the empty ecology niche that not optimally utilized food resources
 - Increase fish production
- Stock enhancement/Restocking start in 1999-2002 (wonogiri)
- Initial Number of patin restock : 30.000 individual



How "Patin" Growth at Gajahmungkur?

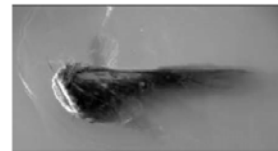
- Growth: 8.7-13.1 g/hr,
- Fecundity: 271.700-1.177.250 egg → TL: 67,0-82,7 cm, W: 3000-5500 gram
- TL: 67,0 cm dan W: 3000 gram → Maturity stage
- Brooder distribution mainly close the floating cages





Spawning and Nursery ground for "Patin"

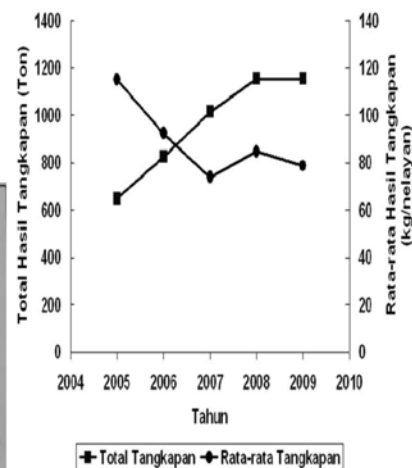
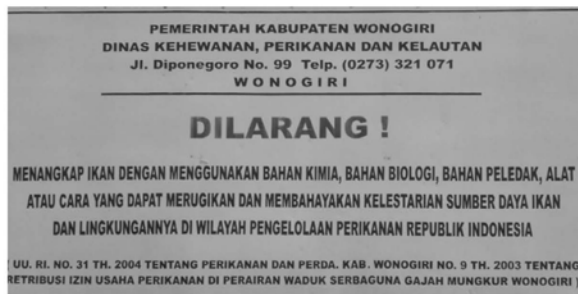
- Spawning Ground: Sungai Keduwang
- Nursery Ground: muara Sungai Keduwang
- Brooder Stock at Floating cages (KJA) at Cakaran



Why "Patin" Resources require a better management

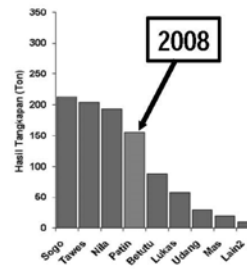
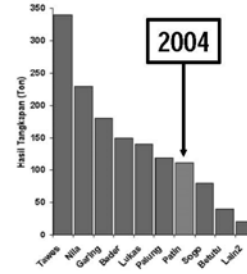
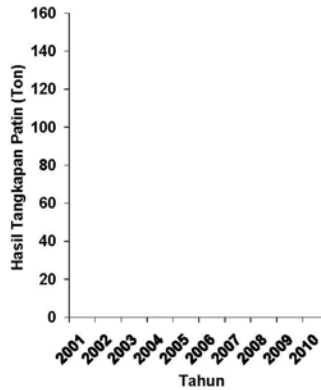
Problems arise:

- Total Production 2006-2008, increase, level off on 2009;
- CPUE Decrease
- Require improvement on resource management of "patin"

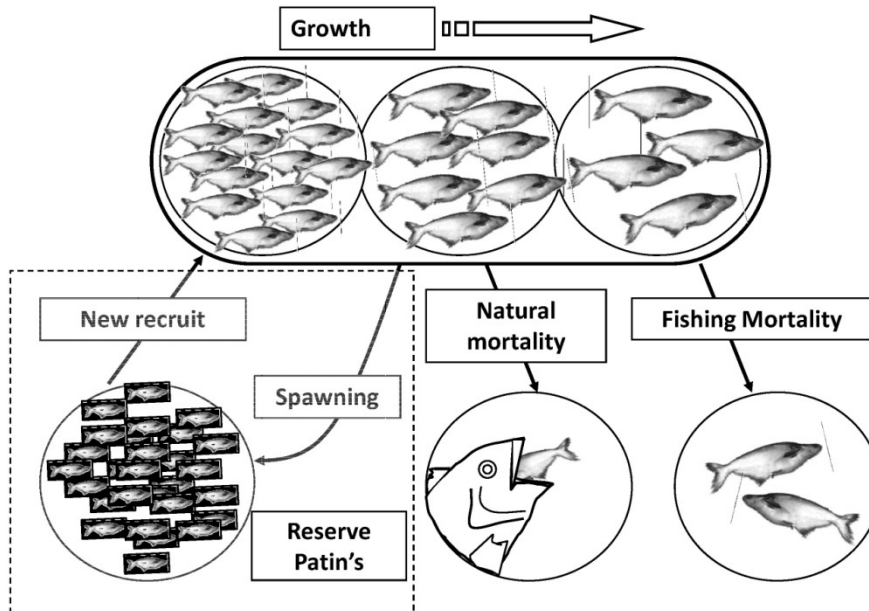


Catch of patin

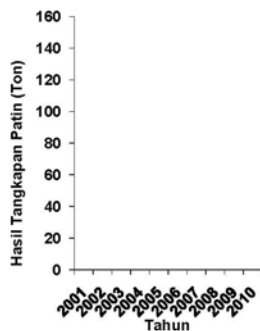
- **Catch of patin**
 - ranked 7th (2004); → moved to the 4th (2008)
 - Since 2005-2007 has stable catch in average: 155 ton/year



Why conserve/reserve area required for patin



co-management between fishers groups and aquaculturist group



- Provision of conservation/reserve area for patin brooder at floating cages area.
 - Build a commitment between capture fishers and aquaculture fishers
 - Cooperative works that have advantages on
 - Avoid conflict on water resources utilization among fishers
 - Assure the security surrounding floating cages area, with no fishing activities.
 - Conserve the brooder stocks
 - Add food resources for Patin that not fully utilized by caged fishes from the floating cages.
 - Assure the spawning area for brooder patin surrounding the floating cages
 - Reduced eutrofication resulted from floating cages (both from excessive fish meal and fish debris)

Management measures to optimize patin production and maintaining its sustainability resources

- Defining the reserve area for patin:
 - Spawning and nursery ground at "Muara Sungai Keduwang"
 - Brooder at location of floating cages "Cakaran"
- Regular Stock enhancement from Cakaran brooder's
- Surveillance and law enforcement on fishing practice
- Strengthen Catch monitoring
- Strengthen management
- Improve Fish handling and processing
- Development of marketing system

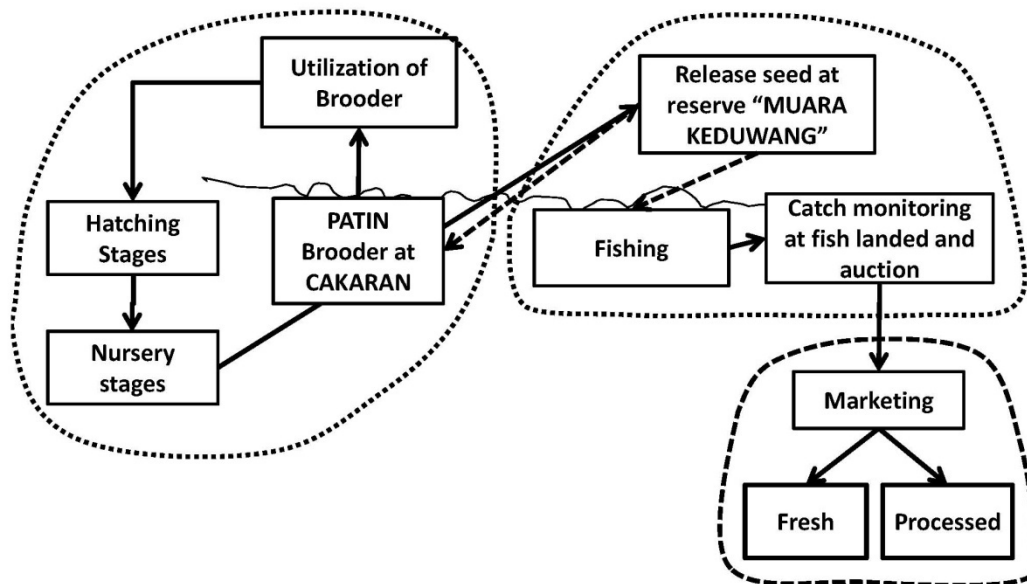
Fishing Practice

- Fishing Licensed (42) → district level MMAF (involvement leader group)
- Not allowed to catch in the reserve area
- Gill net > 2.5 Inch
- 1 kg > 1000 IDR (Levies) > seeds (100 IDR) > restock

Stake holder involved in the co-management

- **Fishers (Capture, Aquaculture and trader)**
- **Government**
- **Others: Boat maker, Fishing gear maker, trader, food processing, capital/funder)**
 - **Tourism**
 - **Industry**
 - **Hotel**
 - **Transportation**
 - **NGOs**
 - **Researcher/Academic**

Sustainable Resources of "Patin" at Gajahmungkur



Culture Based Fisheries (CBF)

- The involment of local community
 - (co-Management) → Community and Goverment.
- Restocking → Suitable habitat and species
- Management technique → (stock enhancement) → (restocking) ikan → monitoring (defining groups- community and Government)
- Defining limited take zone and no take zone area (reserve area)
- Defining Protected area ; Spawning and nursery ground

Continued CBF

- Hatching: community and government
- Habitat management including
 - (1). Vegetation riparian
 - (2). Spawning and nursery ground Habitat rehabilitation and treatment
- Regulation on fisheries management including
 - (1). Best practice of fishing (gear and methods)
 - (2). Fishing season/time and location/fishing ground
 - (3). Total allowable catch
- Consistent Assistance to fishers and community with adaptive management principle.

Constraints

- Mostly the community involved in the small scale fisheries has a low level of income → Poverty issues on the community → food for live
- There are outsider fishers that difficult to cooperate with the existing tradition and practice
- Habitat degradation due to anthropogenic activities (Waste from industrial)
- Climate change, environmental change.
- Unstable price of fish especially during peak season
- Raw product vs processed value added product
- Weak Market chain
- Nelayan andon → outsider fisher not comply the existing regulation

Opportunity

- Fishers welcoming to any technology or management concepts introduced to them and have positive response as long as the technology demonstrate benefit to them
- Fishers are more aware to the sustainability of their environment and resources
- New recruitment of the fishers are more skilled and educated persons
- There are existing fishers groups with similar background, culture and interest
- Government more aware to small scale fisheries

Closing

- **Introduction and stock enhancement of patin on Gajahmungkur wonogiri has successful and positively increase production and income of local fishers.**
- **There were conflict among groups and increase of utilization of the resources without appropriate management → decrease the CPUE since then required a better management**
- **CBF with Fisheries co-management and fisheries right based is appropriate to adopt and develop in the area, and now the condition better.**
- **Management measures required to apply:**
 - **Defining reservation area for Patin**
 - **banning destructive fishing gear such us “branjang’**
 - **Effective Surveillance with actively involved the local fishers group**
 - **Catch monitoring system**
 - **Strengthening Fisheries management body**
 - **Development post harvest technology and marketing**



Japan

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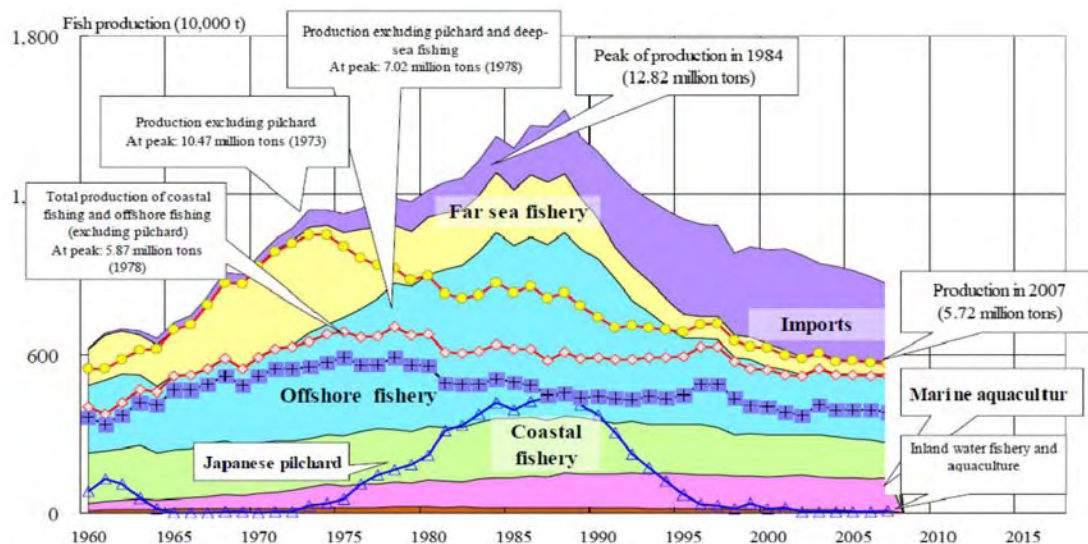
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Japan's experience in co-management and right-based fisheries

February 2012

Changes Japan's Fish Production and Imports



Roots of Fishery Management in Japan

○ In the Nara era (710–784),

Unsustainable fishery called “*kokugyo*” (private monopolization of fishery resources, taking all the fish in an area by draining a pond or using poison) became a problem.

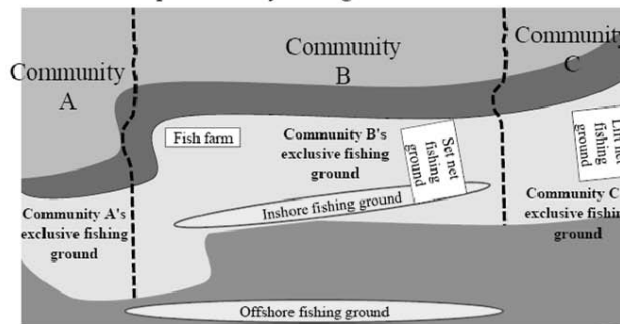
→ An Imperial order was issued that all people shall be allowed to equally use mountains, rivers, groves, wetlands and coastal areas.

○ In the Edo era (16th -18th Century),

The shogunate indicated a principle;

→ Inshore fishing grounds shall be used and managed by local fishing communities, while offshore fishing grounds shall be common area.

Basic Concept of Fishery Management in the Edo Period



Current fisheries management scheme in Japan

Measures Based on Consensus Among Fishers (self-imposed measures)

Official Control Measures

Input Control

- Number of vessels
- Vessel size
- Fishing gears and fishing method

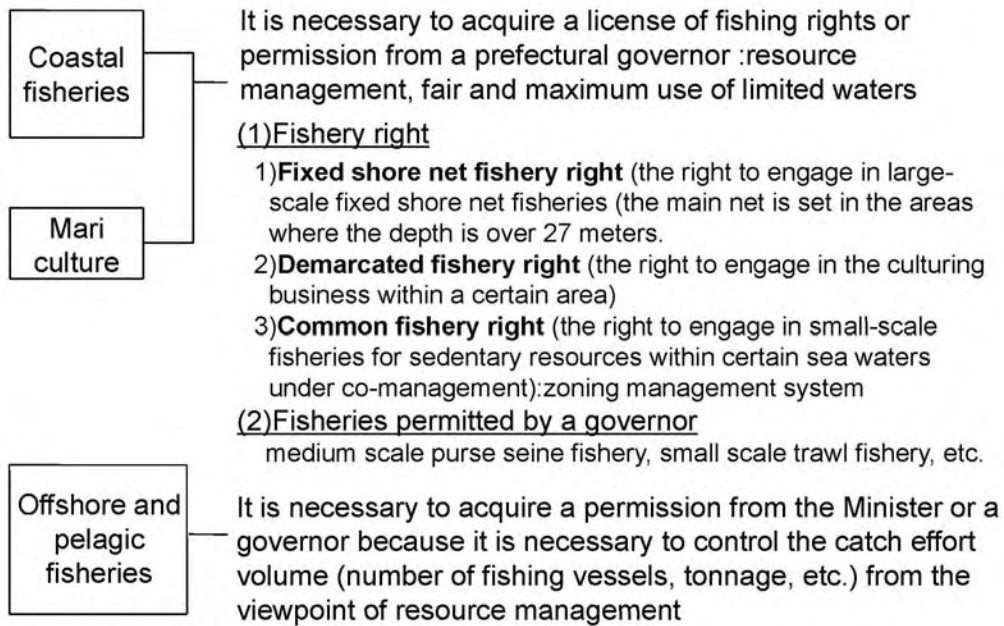
Output Control

- Total Allowable Catch(TAC)
- 7species

Technical Control

- Fishing period (e.g. protection of spawning stock)
- Fishing zone (e.g. protection of spawning and/or nursery areas)
- Mesh size of fishing net (e.g. protection of juvenile fish)

Overview of the Fishery Rights System and the Fishery Permission System



Management system in coastal waters in Japan(Official) -1

Zoning management system in place in coastal waters off each prefectures, based on the common fishery right licensed by the prefectural governor based on the Fishery Act.

- (1)Area, number, etc. of the fishery rights are decided by the governor in consultation with fisheries coordination committee, members of which are comprised with fishers' representatives and experts on fisheries.
- (2)Each fisheries cooperative association (FCA) are entitled the common fishery right in a certain area with strict limited entry system (territorial use right).



Management system in coastal waters in Japan(Official) -2

Zoning management system in place in coastal waters off each prefectures, based on the common fishery right licensed by the prefectural governor based on the Fishery Act.

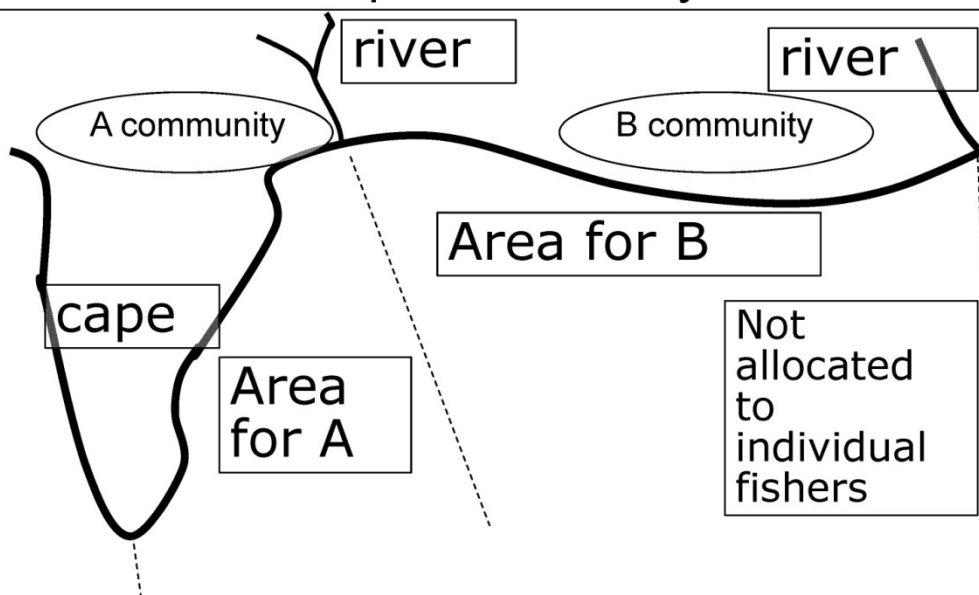
(3) Member fishers of FCA are obliged to conduct fisheries in accordance with Implementation Regulations of the fishing right, which are developed by themselves and authorized by its prefectural Governor (co-management).

e.g. time/area closure,
limitation of fishing method, capture size

※Around 1,000 FCAs exist in Japan



Territorial Use Right (not quota) is allocated in Japanese fishery.



Management system in offshore waters in Japan

Fisheries are conducted with central or prefectural governmental regulations based on limited entry system.

1. Relatively small-scaled fisheries with limited operating areas off each prefecture;

→ managed by its prefectural governor

2. Relatively large-scale fisheries with wide operating areas

→ managed by the central government.



Measures Based on Consensus Among Fishers

Resource Recovery Plan(RRP)

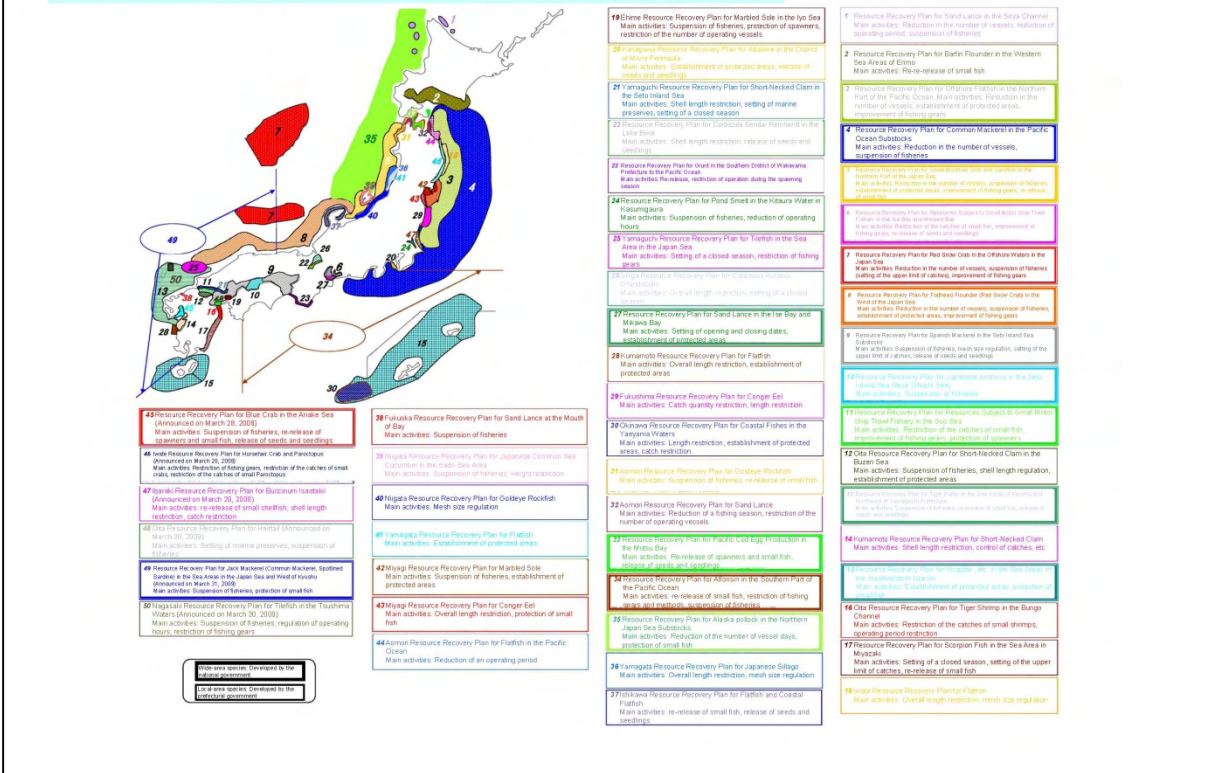
- ✓ Self-imposed measures, in addition to broad and simple official compulsory measures.
- ✓ A management body is established with participation of all the relevant stakeholders (including fishers of various types).
- ✓ RRP is developed and implemented by the body in a certain area for recovery of certain fishery resources.
- ✓ The plan must be authorized by either central or prefectural government depending on the coverage of the area.

Other voluntary measures by fishers

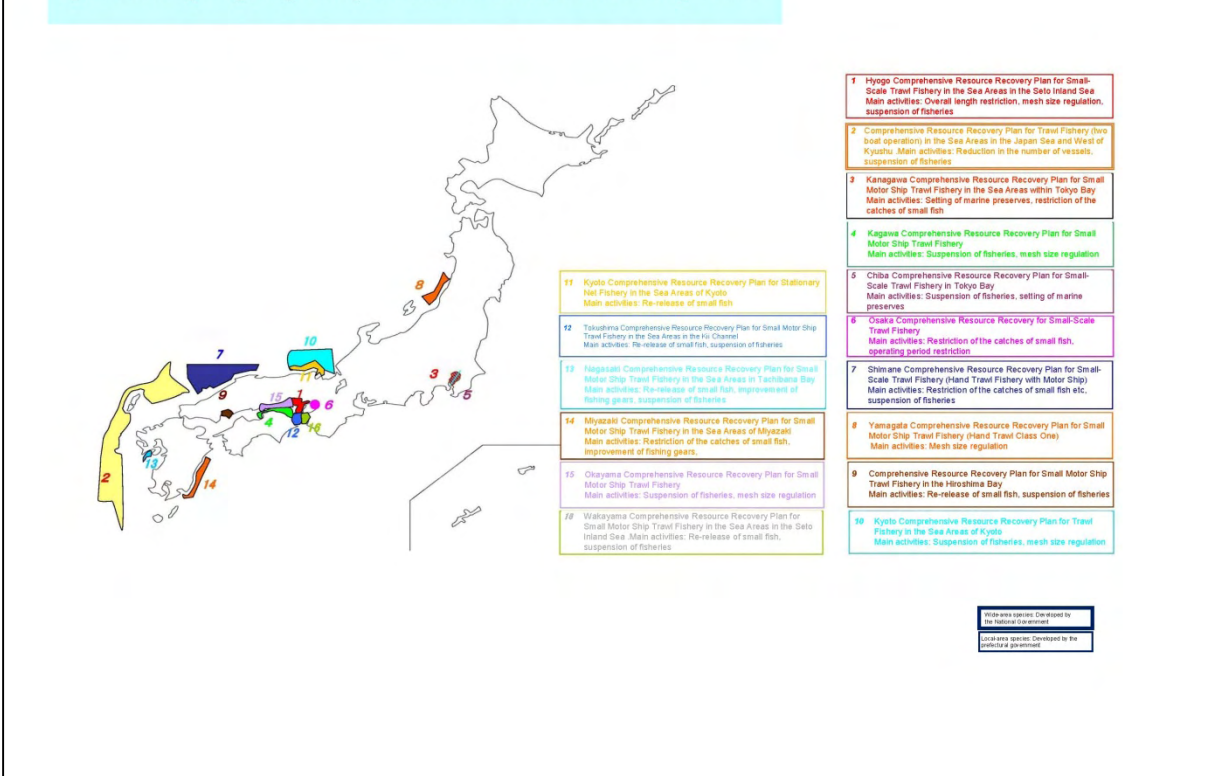
Self-imposed resources management based on consensus among fishers in a certain area.



[Reference] Ongoing Resource Recovery Plans by Fish Species



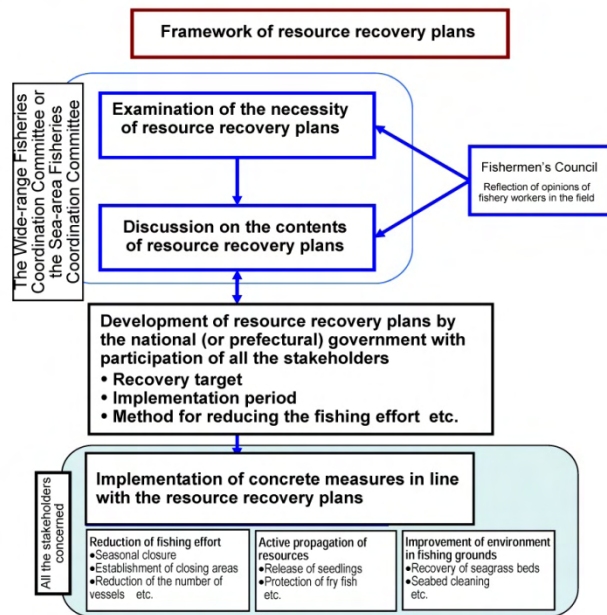
[Reference] Ongoing Comprehensive Resource Recovery Plans



Promotion of Activities based on the Resource Recovery Plans - 1

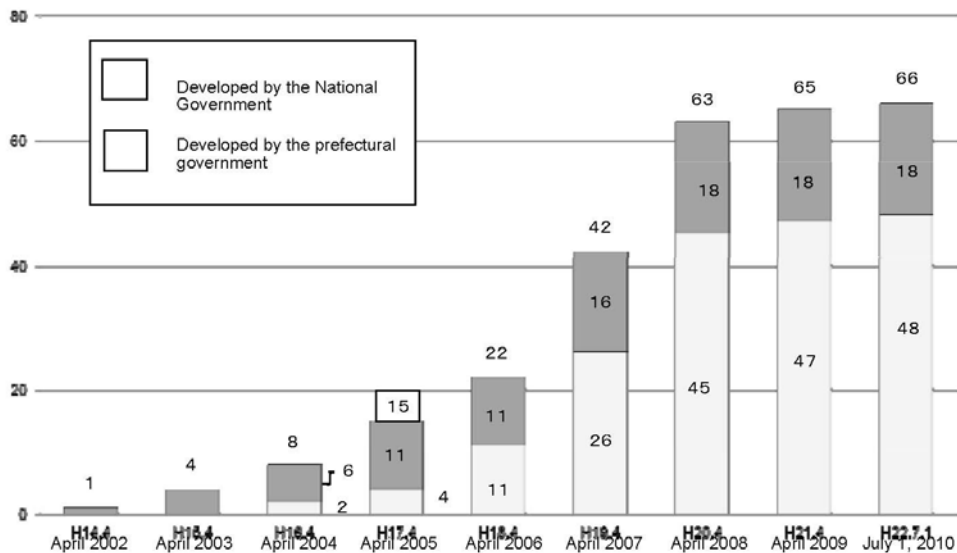
According to the resource recovery plans, the following activities are promoted depending on the characteristics and conditions of targeted resources by setting a implementation period, recovery target, etc.:

- 1) reduction of fishing effort by reducing the number of vessels, seasonal closure of fisheries, establishment of closing areas, etc.,
- 2) active propagation of resources by releasing seedlings, and
- 3) improvement of environment in fishing grounds by recovery/protection of seagrass beds, etc.



Promotion of Activities based on the Resource Recovery Plans - 2

State of implementation of resource recovery plans (as of July 1, 2010)

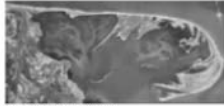


Plan developed by the National Government: for resources which distribute waters off more than 2 prefectures.
Plan developed by the prefectural government: for resources which distribute waters off a prefectures.

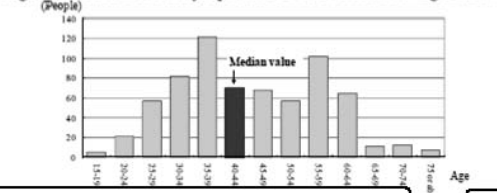
Example of activities conducted by fishers themselves

Fishing Community Taking Actions for Sustainable Use of Local Resources [Notsuke Peninsula, Hokkaido Prefecture]

Toward sustainable use of Hokkai shrimp, voluntary resource management efforts have been made, including restrictions on the use of power-driven vessels, resource surveys conducted before the fishing season, and the establishment of no-fishing zones. Due to efforts to stabilize fisheries income, the ratio of those aged 65 or older in this area is 4.4%, significantly lower than the national average of 34.2%.



Age Distribution of Fishery Operators in the Notsuke Fishing District

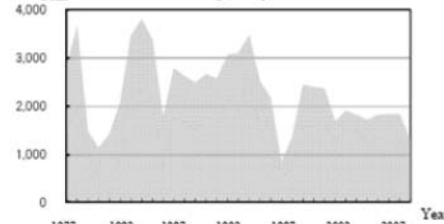


Source: "Fisheries Census" (2008), Ministry of Agriculture, Forestry and Fisheries.

Cooperative and Active Challenges among Communities [Suruga Bay, Shizuoka Prefecture]

Fishers in this district have been conducting joint and voluntary operations for the purpose of managing the resources of Sakurashrimp (*Sergia lucens*) since 1965. They have implemented measures including equal distribution of landed value. Since the effectiveness of this resource management was recognized, the fishery cooperatives concerned acquired certification from the Marine Eco-Label Japan.

Changes in the Catch Quantity of Sakura Shrimp in Suruga Bay

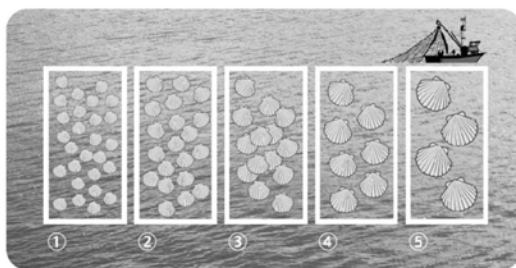


Source: Shizuoka Prefecture surveys.

Example of activities conducted by fishers themselves

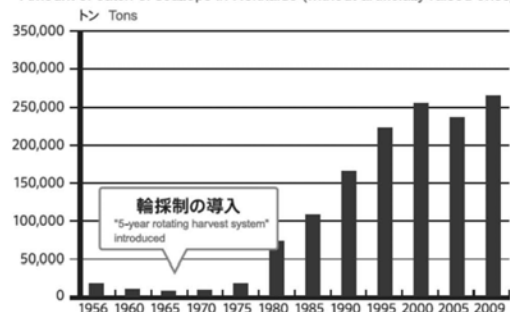
Village including Sarufutsu village in Hokkaido have been voluntarily taking 5-year rotating harvest system in 5-devided fishing ground to ensure sustainable fishery of high quality scallops

5-year rotating harvest system in 5-devided fishing ground



- ① The district where artificially raised juveniles are released in year x and harvested in year x +4
- ② Release : year X-1, Harvest : year X+3
- ③ Release : year X-2, Harvest : year X+2
- ④ Release : year X-3, Harvest : year X+1
- ⑤ Release : year X-4, Harvest : year X

Amount of catch of scallops in Hokkaido (without artificially raised ones)



Other activities conducted by fishers themselves

Fishers, from their experience, are seriously concerned about the need of conservation of marine and coastal environment for sustainable use of fisheries resources.

Cleaning beaches



Conservation/protection and restoration of seagrass beds and tidal flats



Removing spilled oil



Planting woods near the coast



Conclusion

Japan's co-management and right-based fisheries have been conducted on the following basis,

- For the effective management of marine capture fisheries in Japan, central and prefecture governments employ multiple layers of management schemes, which includes **compulsory measures** as well as **self-imposed measures** based on consensus among fishers.
- Various measures for conservation for sustainable utilization of living marine resources are introduced and implemented by fisheries themselves through FCAs (self-imposed measures), including measures introduced under **common fishery right**.
- **Self-imposed measures:** conservation costs are not borne by the government. Those are shared by the members of the local fisher groups, and the benefits (increased future catches or higher product prices) are also shared by the same stakeholder groups.

Conclusion

- **Common fishery rights:** what is allocated to fishers is not fishing quota, but territorial use right. Therefore, fishers' attention tend to be placed upon the quality of areas (habitat) in addition to the status of fish stocks for sustainable use of the right.
- **Fisheries permission scheme:** limited # of small scale fisheries (trawl, puse seine, etc.) are permitted by a prefectural governer off that prefecture.

- **Limitation of new entries** and participation of all the stakeholders are critically important to sustain self-imposed management measures including MPA.
- Under this scheme, fishers have strong incentive to mutually monitor poaching activities for sustainable use of fishing ground under the limited entry system.
- Technical support activities of prefectural governments contribute to organize fishers in a certain area and facilitates the management of resources and fishing grounds.

Lao PDR

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Regional Workshop on Promotion of Strategic Implementation of Fisheries Co-Management and Rights-based Fisheries for Enhancing Good Governance in Coastal and Inland Fisheries Management, 2-3 February 2012, Bangkok, Thailand

Promotion of Strategic Implementation of Fisheries Co-Management and Rights-based Fisheries for Enhancing Good Governance in Inland Fisheries Management in Lao PDR

Akhane Phomsouvanh
Fisheries Division,
Department of Livestock and Fisheries

Presentation Outline

1. General information about fisheries characteristic and small-scale fisheries management in Lao PDR;
2. Project/case study for small-scale fisheries management with concept of co-management and right-based fisheries;
3. Conclusions and Recommendations.

Introduction

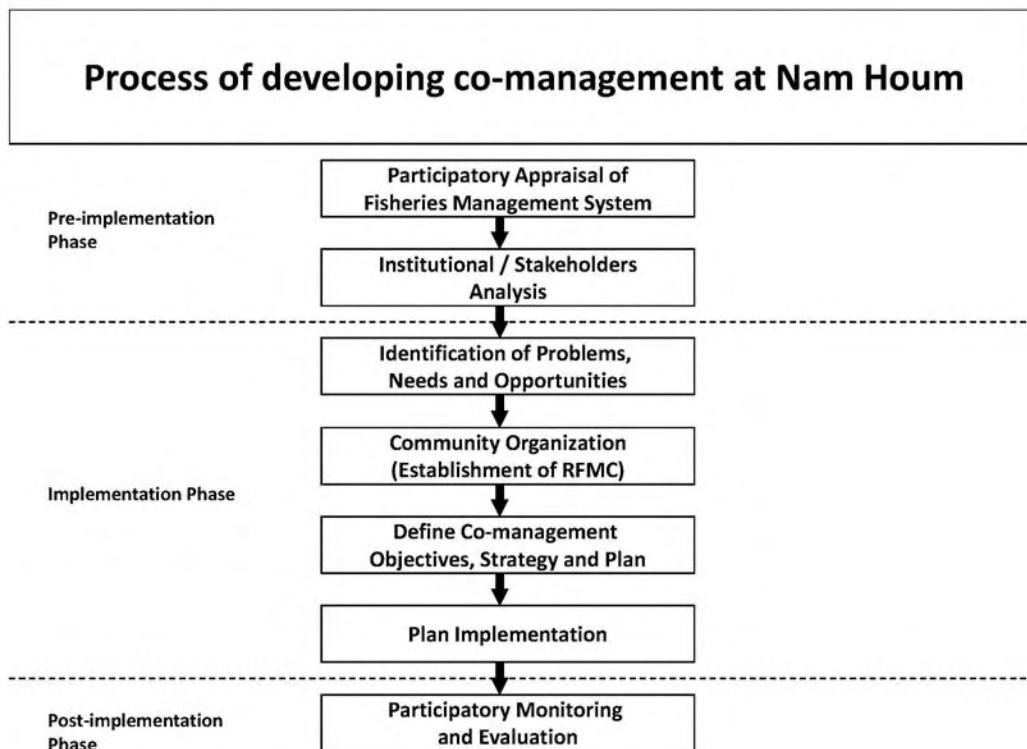
- The Lao PDR is landlocked and mountainous country which lies between China, Vietnam, Cambodia, Thailand and Myanmar.
- The population mainly depend on fish caught in the Mekong River and its tributaries, floodplain, swamps, reservoirs and rice field. These water resources are rich in aquatic biodiversity,
- It is estimated that products from fisheries annually amount to consumption will reach 20 to 25 kg/head by 2020 and make up 48.2% of total animal protein consumed in the country.

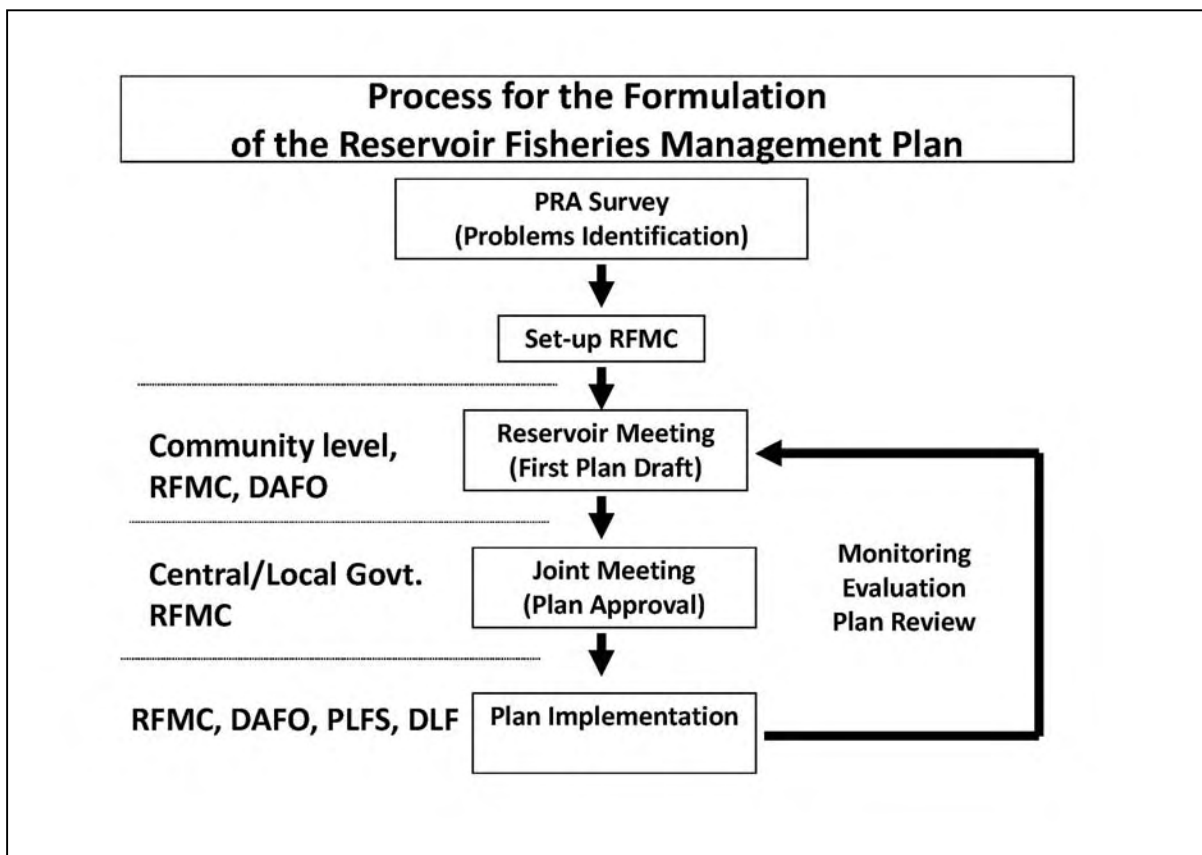
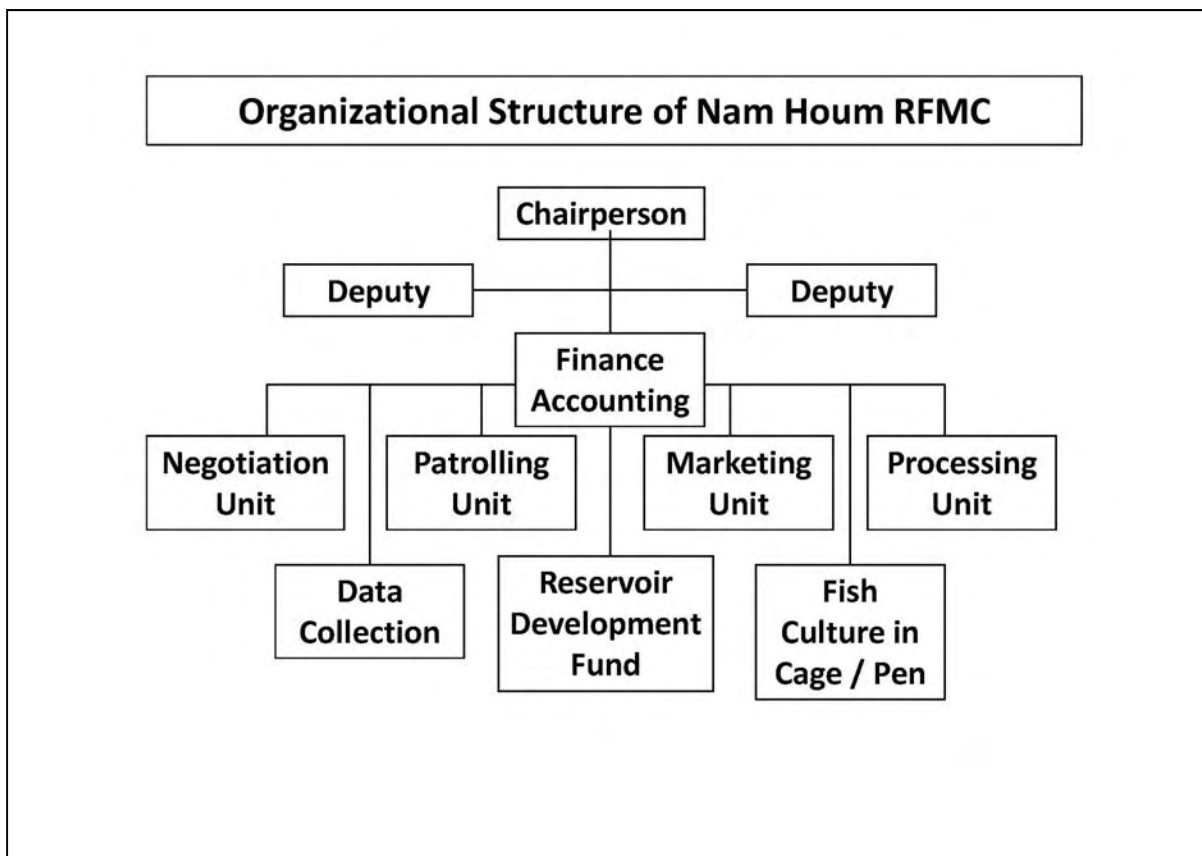


Previous Implemented Projects on Fisheries Co-Management

- The Mekong River Commission (MRC)
 - Mekong River, Reservoirs
- SEAFDEC (Japanese Trust Fund and ASEAN Foundation)
 - Reservoirs e.g. Nam Ngum, Nam Houm
- NGOs / WWF
 - Mekong River and its main tributaries

Case study on Experiences in Developing Co-management of Reservoir Fisheries at Nam Houm





Nam Houm Reservoir Fisheries Management Plan



← The “Reservoir Fisheries Management Plan” will look like this!

- The main activities for year 2008 are for example as following:
 1. Improve RFMC organization and fishing groups;
 2. Create awareness on fishing regulations;
 3. Conduct patrolling of fishery and FCZs during the spawning season;
 4. Stocking / enhancement activities;
 5. Conduct trial on fish culture in cage;
 6. Create reservoir management fund;
 7. Data collection (catch data).



Examples of Co-management Functions Shared Between the RFMC and Local Govt. (DAFO) at Nam Houm

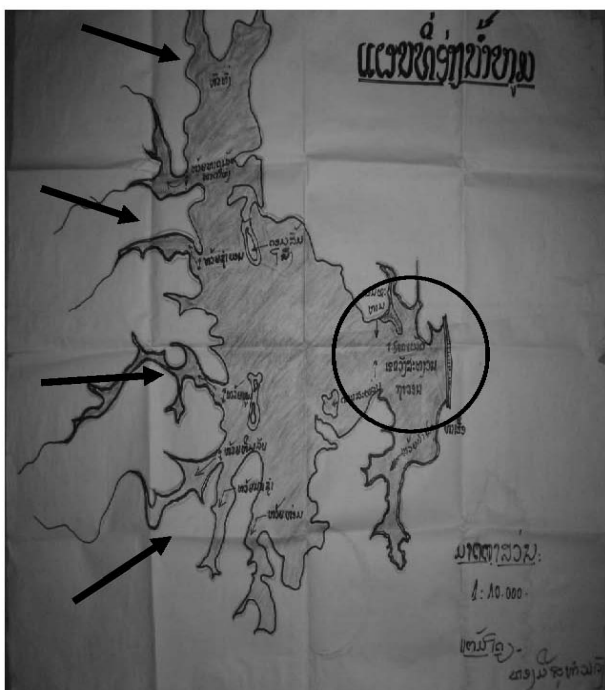
Role / Management function	RFMC	DAFO
Develop / improve fishery regulations	X	X
Enforcement / patrolling	X	X
Stocking	X	-
Fish processing / marketing	X	-
Capacity-building	-	X
Develop reservoir management plan	X	X
Implement reservoir management plan	X	-
Monitoring & Evaluation	X	X

Development of Reservoir Fisheries Management Plan at NH



- The Reservoir Fisheries Management Plan is first developed at the reservoir level with all representatives from the four villages.
- Then, the Reservoir Fisheries Management Plan is brought for joint discussion and approval at the annual review meeting that is organized each year at the central level.
- After that the Reservoir Fisheries Management Plan has been adopted, the local govt. (DAFO) gives technical support for its implementation with assistance from Department of Livestock and Fisheries

Establishment of Fish Conservation Zones

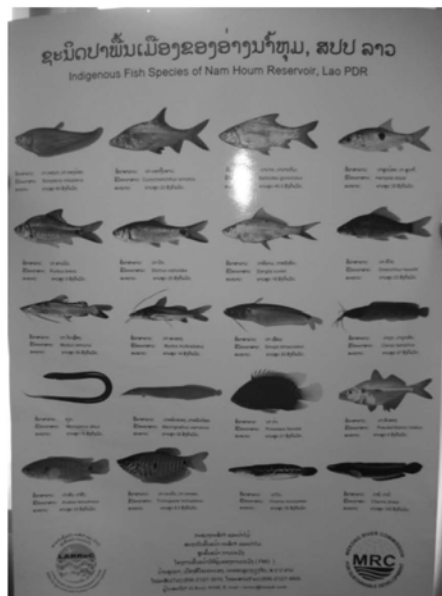
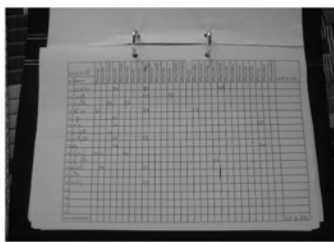


- A permanent FCZ was established in front of the main dam (1,500 m from the dam) and declared as a closed area for all types of fishing gears for the whole year round.
- There are four seasonal FCZs located in headwater areas or small streamlets feeding the reservoir. These zones are declared as closed area during the main fish spawning season that usually starts from May to August.
- These FCZs are regularly monitored by the patrolling unit especially during the spawning season (beginning of wet season).

Capacity Building for Nam Houm RFMC



Participatory Collection of Catch and Market Data



Use of Mobile Hatchery for Stocking at Nam Houm



Enforcement Activities at Nam Houm



- Built display boards and warning signs to inform the local villagers about the fishing regulations and Fish Conservation Zones.

- These warning signs are setup in each FCZ and at boat landing of each village.

- The RFMC conduct regular patrolling especially during the spawning season (May-August)



Fish Culture in Cage at Nam Houm



- At present, there are more than 300 fish cages that are operated by local fish farmers in the reservoir.
- This activity will help the RFMC to create income for their reservoir management fund



Negotiation for Fish Marketing Concession at Nam Houm



- The MRRF component facilitated a Consultation Meeting on Fish Marketing at Nam Houm with the district authorities to negotiate for fish concession.



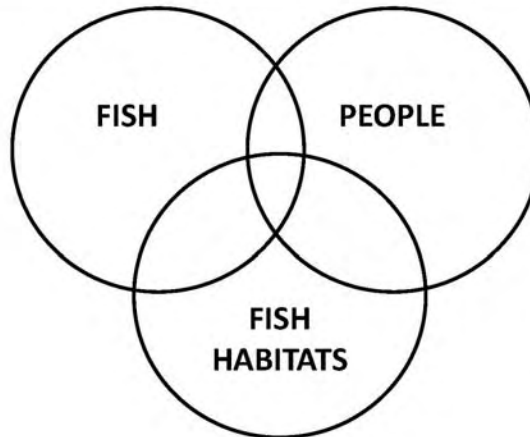
- The period from May to October is the peak season (high catch), in average about 100-200 kg of fish per day can be purchased from the local fishers by the fish collection unit.
- The period from November to April is the period of low catch. In average only 30 kg of fish per day can be collected. The fish prices increase.

Training on Fish Processing



Our Approach to the Management of Reservoir Fisheries in Lao PDR

Fish seed production
Stock enhancement
Catch monitoring
Fish culture



RFMC
Fishing groups
Fish marketing
Fisheries legislation and regulations
Enforcement
Training on livelihood aspects

Protection of Fish Habitats
"Fish Conservation Zone"

To Create Balance Between: Fishing, Fish Stock and Fish Culture

Conclusions and Recommendations

- In the country, many attempts have been made to create local institutions carrying some management responsibilities, but most have failed when it came to ensure their financial sustainability once donors / support withdraws;
- Local govt. agencies are just not well equipped well enough to provide the required services for fisheries management, usually because of technical and financial limitations;

Conclusions and Recommendations (2)

- Importance of clearly defining and specifying the roles, functions, responsibilities and authorities of the various institutions and administrative levels;
- Establishment of effective, financially viable and functioning management institutions at the local level.
- A self-sufficient system must be developed through institutional building exercises if any co-management is to be promoted at all.

Malaysia

Abdul Khalil bin Abdul Karim

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Regional Workshop on Promotion of Strategic Implementation of Fisheries Co-management and Rights-based Fisheries for Enhancing Good Governance in Coastal and Inland Fisheries Management

Bangkok, Thailand
2-3 Feb. 2012



DEPARTMENT OF FISHERIES MALAYSIA

1

COASTAL and INLAND FISHERIES CO-MANAGEMENT

Small-scale fisheries

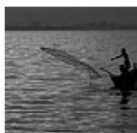


- often referred as artisanal fisheries
- difficult to define
- term apply differently in different countries
- in general, they are involved in using traditional gears
- make significant contribution to nutrition, food security and national economy

2

COASTAL and INLAND FISHERIES CO-MANAGEMENT

The 29th COFI in February 2011 recognised the contribution of small-scale fisheries and recommended that member countries explore how to bring together responsible fisheries and social development in coastal and inland fishing communities.



3

PROFILE OF THE CAPTURE FISHERIES SECTOR 2010

TYPES OF VESSEL	NUMBERS
TRADITIONAL VESSELS	40,874
COMMERCIAL VESSELS	8,039
Trawlers	6,251
Purse Seine	1,121
Anchovy Seine	133
2 Boat Seine	534
CARRIER VESSELS and others	843
TOTAL NUMBER OF VESSELS	49,756
TOTAL NUMBER OF FISHERMEN	129,622

4

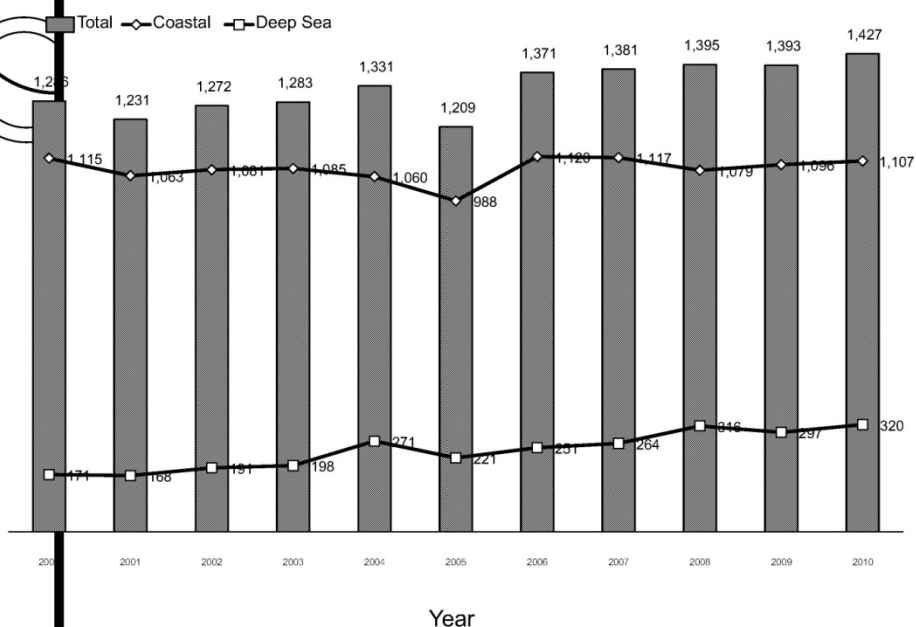
COASTAL and INLAND FISHERIES CO-MANAGEMENT

Category	Numbers
No. local fishers using traditional gears	66,384
No. local fishers using commercial gears	26,672
Total no. of local fishers	93,056
No. of Foreign crews on local vessels	36,566
Total Fishers in Industry	129,622

Note:
Small-Scale Fisheries Using traditional fishing gears with vessels less than 10 GRT mostly in Zone A)

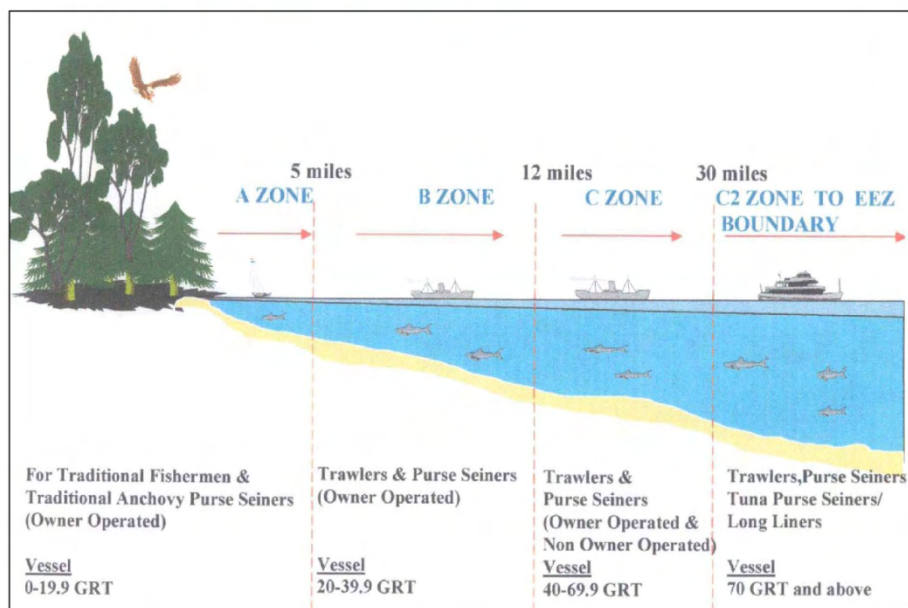
5

CAPTURE FISHERIES ('000 mt)



6

Fishing Zones of Malaysia



7

COASTAL and INLAND FISHERIES CO-MANAGEMENT

Management of Small Scale Fisheries

- ❖ registration of fishers
- ❖ issuance of Identification cards
- ❖ limited entrance – only to locals
- ❖ zoning system
- ❖ technology transfer
- ❖ access for bank facility
- ❖ facilitate relief assistance during natural disasters
- ❖ economic activities to increase income
- ❖ CBFM



8

COASTAL and INLAND FISHERIES CO-MANAGEMENT

CBFM – marine resources

- ✓ The first established in Kuala Teriang Langkawi, Kedah in 2003
- ✓ Cooperation between SEAFDEC/TD and Department of Fisheries Malaysia
- ✓ Co-funded by Department of Fisheries Malaysia / Japanese Trust Fund.
- ✓ Economic activities –income generation, women's group, environmental- related activities, conservation of resources
- ✓ Established a management zone under Fisheries Act 1985 as a Prohibited Area



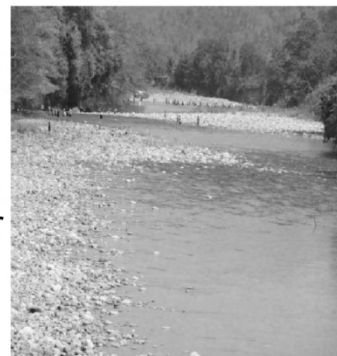
9

COASTAL and INLAND FISHERIES CO-MANAGEMENT

CBFM – riverine resources

“The Tagal ”
- a system of smart partnership between the local community and the government (Dept. of Fisheries)
in :

- ❖ protecting the environment
- ❖ reviving the depleting riverine fish population
- ❖ harvesting in a sustainable manner
- ❖ improving income of the local community



10

COASTAL and INLAND FISHERIES CO-MANAGEMENT

How does the Tagal System work?

The Sabah State's Law can empower the local community to implement the Tagal System through;

❖ Section 58 of the Sabah Natives Courts (Native Customary Laws) Rules 1995

▪ Offender – fine one pig / buffalo / cow

❖ Section 36 of the Sabah Inland Fisheries Aquaculture Enactment 2003

▪ Offender – fine max. RM50,000

– Jail max. 2 years



11

COASTAL and INLAND FISHERIES CO-MANAGEMENT

CBFM – future programmes

✓ cooperation with Kagoshima University

✓ 3 year programme

✓ model fishing village

- site selection

✓ dispatch of experts

- training course

- analysis local problems



12

Myanmar

San Aung

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Street, West Gyogone,

Insein Township,

Yangon, Myanmar

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Regional Workshop on Promotion of Strategic Implementation of Fisheries Co-management and Right-based Fisheries for Enhancing Good Governance In Coastal and Inland Fisheries Management

**The Republic of the Union of Myanmar
Ministry of Livestock and Fisheries
Department of Fisheries**

**Mr. San Aung (Principal of Fisheries Training School)
DOF , Myanmar**

Introduction

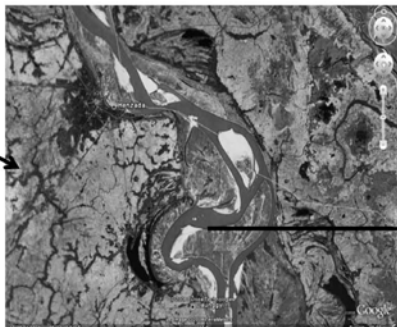
Selected site Duya Inn leasable fisheries
 Hinthada Township, Ayeyarwady Region

Area covered; about 700 acres

Location

Northern end lat 17 34' 15" ; long 95 29' 15"

Southern end Lat 17 31' 47" ; Long 95 31' 1"



Employment

- 1. Permanent ; 60 Persons
- 2. Part time ; 290 Persons (30 co-fishers and 260 venders)

Co-fishers;

- Mostly conducted gill net fishing. Lease holders disbursed fishing implements and buy back the catches. The co-fishery have benefited
- from obtain fish for house-hold consumption.



Fishery

(1) Type

- Culture based fishery

(2) Common Fishing methods;

- Surround net, Fence net, Pull net and Gill net

(3) Common fish catch; Major carps, barbs, carplet, catfishes, spiny eels, snake head, gobies, feather back, half beaks, pipe fish and several small cyprinids. (more than 30 species)

(4) Fishing Season

- Open season; August to April (9 months)
- Closed season; May to July (3 months)

(5) Landing volume; about 400 mt per annum



Objective

•To motivate the sustainability of small-scale inland fisheries, its resources and livelihood of the resources users.

Overall scope of the project;

- 1. Fishers participation in fishers management**
- 2. Reserve conservation area in fishery water**
- 3. Promote processing and value adding fishery products.**
- 4. Fisher group and community participation in extending responsible fisheries management activities.**



Project Activities

Workshop on "Establishment of conservation zone in Duya Inn" during 25-29 April 2009.

- Demarcated conservation zone of about 100 acres and identified by float lines across water surface adjacent to Duya and Baychoung village at the edge.
- Fabricated bamboo frames to fix and support dense growth of water hyacinth so that fish can find niches in there



Women Group Training

- On-site training on value added fish processing for 2 women group from Bay Choung and Pouk Yoo village situated at the edge of fishery water.
- Each of the group has 6 participants



Encourage and supports for women Group

SEAFDEC further encouraged and supported for women group who were trained to value added processing of "Fish cracker " and "fried fish"

- Cooking and kitchen utensils
- Meat grinder
- Packing sealing devices with batteries

Financing of 200US\$ for each of 2 women groups

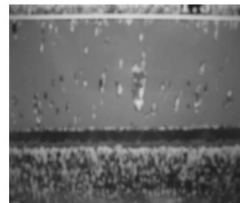
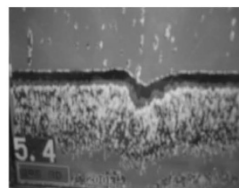


Outcomes

- SEAFDEC evaluation team headed by Secretary –General visited Duya Inn again during 19-23 August in 2009.
- Observation on conservation zone
- Conservation zone has been safeguard from fishing
- Natural fish are gathering to find niches
- Seems more of vegetation rafts to fabricate
- Observation on women group activities
- Women group produced "fish cracker" and "fried fish" with few modification in recipe formulation to meet local taste.

Follow up

- **Conservation zone**
 - **Bottom topography and depth of Duya Inn was conducted with the assistant of SEAFDEC Training Department**
 - **The second conservation zone has been reserved in Yin Taik kone area at the southeast ward**
 - **SEAFDEC provided one day short cut basic training on book keeping and drawing of daily balance sheet for daily expenses and income from selling of the Product.**





Overall benefit

- Trends to sustain natural fish from Duya Inn become obvious
- Increase aware on process of fish conservation has been disseminated
- Extends of fish conservation zone in other fisheries water become in the front of inland fisheries bodies



- Local peoples have learnt value adding of low value fish for better income and supportive to daily life.
- Women groups have demonstrating the means of improved livelihood approaches



Insert fish species in to the Duya Inn for culture based capture Fishery

Sr.	Year	Rohu	Catla	Mrigal	Barb	Total	Remark
1	1999-2000	1000000	900000	100000	----	2000000	
2	2000-2001	750000	200000	50000		1000000	
3	2001-2002	1165339	145595			1310994	
4	2002-2003	1440300	433000			1873300	
5	2003-2004	1614368	785253	90000		2489600	
6	2004-2005	1056100	383855	15470		1455425	
7	2005-2006	1360000	420000	82000		1862000	
8	2006-2007	910000	572000	22000	53000	1557000	
9	2007-2008	962200	220000	220475	176880	1579555	Before Porj
10	2008-2009	1171515	109123		103632	1384270	After Porj
11	2009-2010	972000	167320	113830		1253150	After Pro
12	2010-2011	943510	338610	121940		1404060	After Porje

Monitoring of Duya Inn of fish conservation

According to fish conservation in Duya Inn, increase fish production as follow.

Sr No.	Year	Fish Production (viss)	Remark
1	1999-2000	46627	
2	2000-2001	118935	
3	2001-2002	119273	
4	2002-2003	152858	
5	2003-2004	80373	
6	2004-2005	206709	
7	2005-2006	210182	
8	2006-2007	175400	
9	2007-2008	200830	Before Project
10	2008-2009	205941	After Project
11	2009-2010	211367	After Project
12	2010-2011	312956	Had been produced 172956 viss Remain , to produce 140000 viss

SWOT for Duya Inn of SEAFDEC project

Strong	Weakness	Opportunity	Threat
1. Have income in this Inn for all fishermen	Only one owner And do not income monthly	To be income for livelihood of fishermen every day and month	do not co-operate and Natural resources loss
2. Co-fishery is good	Do not understand on activities	More fish and fishing, Fishery-community	When do not Fishing , no income
3. Alternative income of fishery	No technology of Fishery sector	Wanted to have knowledge and technology of fisheries	
4. Control conservation zone areas	Climate change	To be Co-management	

Conclusion

- (1) According to lessons learnt from Duya Inn, having conservation zone in the Inn promoted fish production.
- (2) Conservation zone areas should be kept in each Inn of Leasable fisheries in Myanmar.
- (3) Need fishery communities for sustainable fishery and livelihoods of fishers.
- (4) Conservation Zone improves environmental conservation and the Fishing folk's livelihoods
- (5) NGO's role is of great help to co-fishery and fishery governance
- (6) Co-fishery enhances good governance in fishery management
- (7) We really appreciate the initiative of SEAFDEC for co-fishery and co-management in Myanmar

THANKS
FOR
YOUR KIND ATTENTION

The Philippines

Nestor D. Domenden

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Government Center, Barangay Sevilla,

San Fernando City, La Union,

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region1@bfar.da.gov.ph

COUNTRY REPORT
NESTOR D. DOMENDEN
 DEPARTMENT OF AGRICULTURE
 BUREAU OF FISHERIES AND AQUATIC RESOURCES

PHILIPPINES

*Regional Workshop on Promotion of Strategic Implementation of Fisheries
 Co-management and Rights-based Fisheries for Enhancing Good Governance
 in Coastal and Inland Fisheries Management*

2-3 February 2012
 THAILAND

INTRODUCTION

Philippines

- ARCHIPELAGO
- 7,100 + ISLANDS

3 Main Islands

- LUZON
- VISAYAS
- MINDANAO

Scale 1:32,000,000 at 5°N
 Mercator Projection

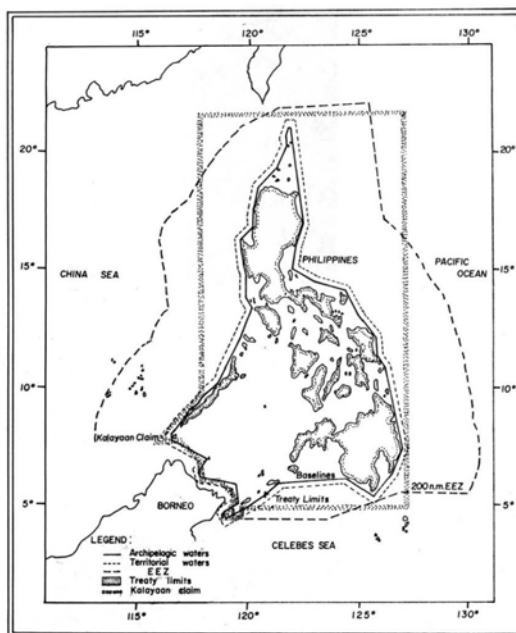
PHILIPPINE MARINE JURISDICTIONAL BOUNDARIES

Fishery Resources

A. Marine Waters

1. Total Territorial Water	2,200,000 sq. km.
Area (including the EEZ)	
a. Coastal	266,000 sq. km.
b. Oceanic	1,934,000 sq. km.
2. Shelf Area (Depth 200 m)	184,600 sq. km.
3. Coral Reef Area	27,000 sq. km. (within the 10-20 fathoms where reef fisheries occur)
4. Coastline (length)	36,289 km.

Data source: BFAR Profile 2009



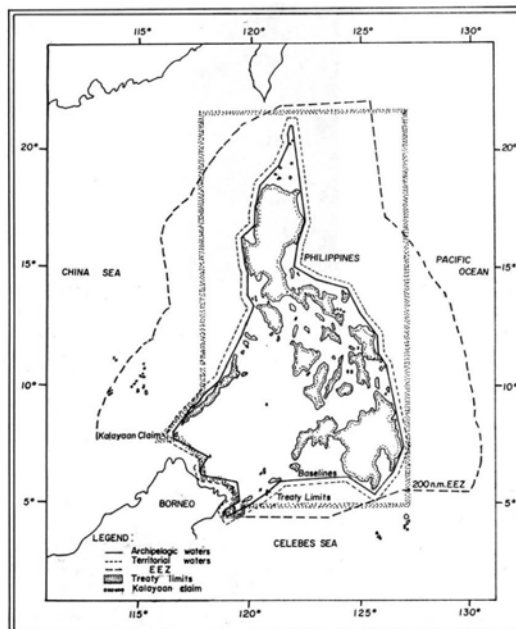
Map of the Philippines showing the limits of archipelagic, territorial waters treaty limits Exclusive Economic Zone

Fishery Resources

B. Inland Waters

1. Swamplands	246,063 hectares
a. Freshwater	106,328 hectares
b. Brackishwater	139,735 hectares
2. Other Inland Resources	250,000 hectares
a. Lakes	200,000 hectares
b. Rivers	31,000 hectares
a. Reservoirs	19,000 hectares

Data source: BFAR Profile 2009



Map of the Philippines showing the limits of archipelagic, territorial waters treaty limits Exclusive Economic Zone

Contribution to National Economy

Fisheries contribution to the Total GDP

- Constant Prices = 4.3% (P58.6B)
- Current Prices = 2.2% (P143.4B)

Fisheries contribution to GVA in Agriculture, Fishery and Forestry

- Constant Prices = 22.4 %
- Current Prices = 15 %

Employment

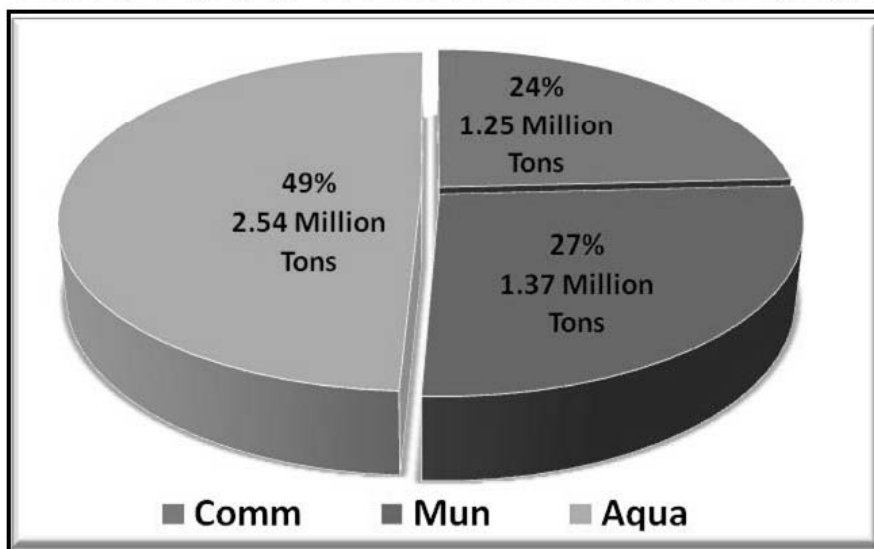
- Aquaculture - 226,195 operators
- Municipal - 1,371,679 operators/fishers
- Commercial - 16,497 operators

Balance of Trade*

- Fishery Exports = 196,521 MT = PhP31.9B
- Fishery Imports = 209,615 MT = PhP10.7B
- Trade Balance = (19,764 MT) = PhP21.2B

Data source: BFAR Profile 2009

2010 PRODUCTION SHARE BY SUB-SECTOR



Fisheries Production: 5.16 million tons

Data source: BFAR Profile 2009

Small Scale Fisheries

“Small-scale fisheries are labour-intensive, and are conducted by artisanal craftsmen whose level of income, mechanical sophistication, quantity of production, fishing range, political influence, market outlets, employment and social mobility and financial dependence keep them subservient to the economic decisions and operating constraints placed upon them by those who buy their production”, according to experts.

*Bay of Bengal News
Vol. IV. Nos. 10-11
December 2006-March 2007*



Municipal fishing boats = 469,807
motorized = 177,627
non-motorized = 292,180

2010 municipal fish production = 1,358,693.97
Marine = 1,159,922.03
Inland = 188,721.94

Small -scale Fisheries Management: Co-management and rights-based fisheries

Co-management

Management approach in which the government share certain authority, responsibilities and functions of managing the fisheries with resource users as partners

Rights-based fisheries

Fisheries where the right to fish or utilize the fisheries resources is licensed or permitted by the competent government authority, giving the licensed fishers access and use of rights to the fishing ground. Such rights are accompanied by obligations to comply with the rules and regulations of the right-based regime

**PROJECT/
CASE STUDY**
(Co-management)

**ESTABLISHMENT OF MARINE
PROTECTED AREA/ FISH
SANCTUARY**
(Bangrin Mangrove MPA)

- established through the national government and co-managed by the local government and the fisherfolk association with funding support

Co-management Scheme

<p>National Government Agencies (NGA) DENR: initiates the establishment BFAR: <ul style="list-style-type: none"> • expansion of area planted • provision of boardwalk, boat and equipment • training for tour guide </p>	<p>Local Government Unit (LGU)</p> <ul style="list-style-type: none"> • Delineation • provision of watch tower/guardhouse and boundary marker • crab culture • funding support for volunteers 	<p>People Organization (PO)/Fisherfolk Association (FA) FARMC</p> <ul style="list-style-type: none"> • labor force in the mangrove planting and maintenance • volunteers for guarding the area 	<p>Non-Government Organization (NGO)</p> <ul style="list-style-type: none"> • assessment of migratory birds <hr/> <p>Private Sector</p> <ul style="list-style-type: none"> • expansion of area planted
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Bangrin MPA Wins in 2011 Most Outstanding MPA Awards

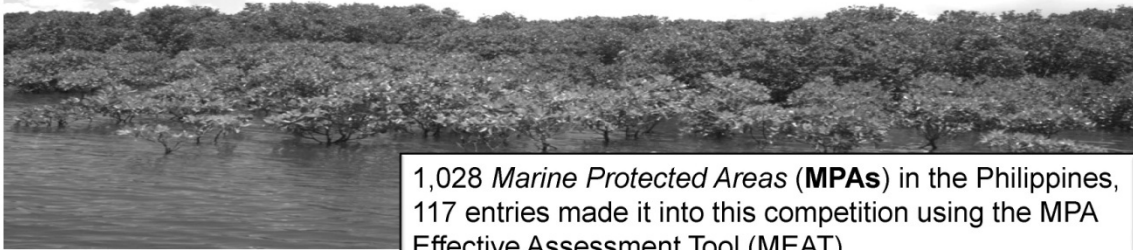


Services Offered:

Licenses Fee	₱20.00/permit
Motorboat Rental	₱800/round trip
Motorboat Fuel (up to 25 persons capacity)	₱90.00
Mangrove Forest Trip with Paddle Boat	₱90.00
1-2 persons/boat	₱90.00
3-5 persons/boat	₱150.00
6-10 persons/boat	₱250.00
11-20 persons/boat	₱350.00
21-30 persons/boat	₱450.00
31-40 persons/boat	₱550.00
41-50 persons/boat	₱650.00
51-60 persons/boat	₱750.00
61-70 persons/boat	₱850.00
71-80 persons/boat	₱950.00
81-90 persons/boat	₱1050.00
91-100 persons/boat	₱1150.00
Additional ₱50.00 in excess of maximum. Bring own bedding.	
Star Building Fee	₱250.00

Bangrin MPA of Bani, Pangasinan won 2nd Place in the 2011 MPA Awards and Recognition or Para EI MAR for Most Outstanding Marine Protected Area on August 31, 2011.

The 2011 Most Outstanding MPA Awards Is held by the MPA Support Network (MSND)



1,028 *Marine Protected Areas (MPAs)* in the Philippines, 117 entries made it into this competition using the MPA Effective Assessment Tool (MEAT)

- a group of over a dozen government, non-government and academic institutions that support local initiatives through coordinated efforts at the national and regional levels
- initiates exchange of best practices of effectively managed MPAs through a national symposium and national incentive system.

In the Ilocos Region, Philippines, there are 67 fish sanctuaries and 19 mangrove sanctuaries co-managed by LGUs and POs/FAs with the fisheries ordinance and management plan and are supported by National Government Agencies and private sector

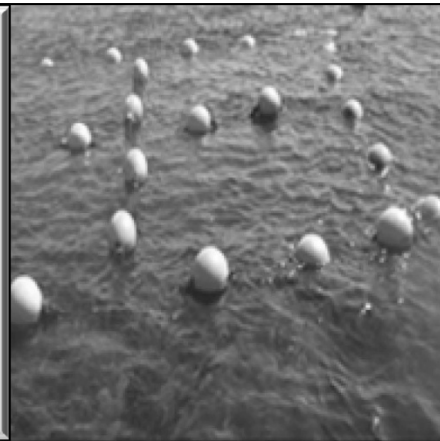
**PROJECT/
CASE STUDY**
(Co-management)

MARICULTURE PARKS/ZONES



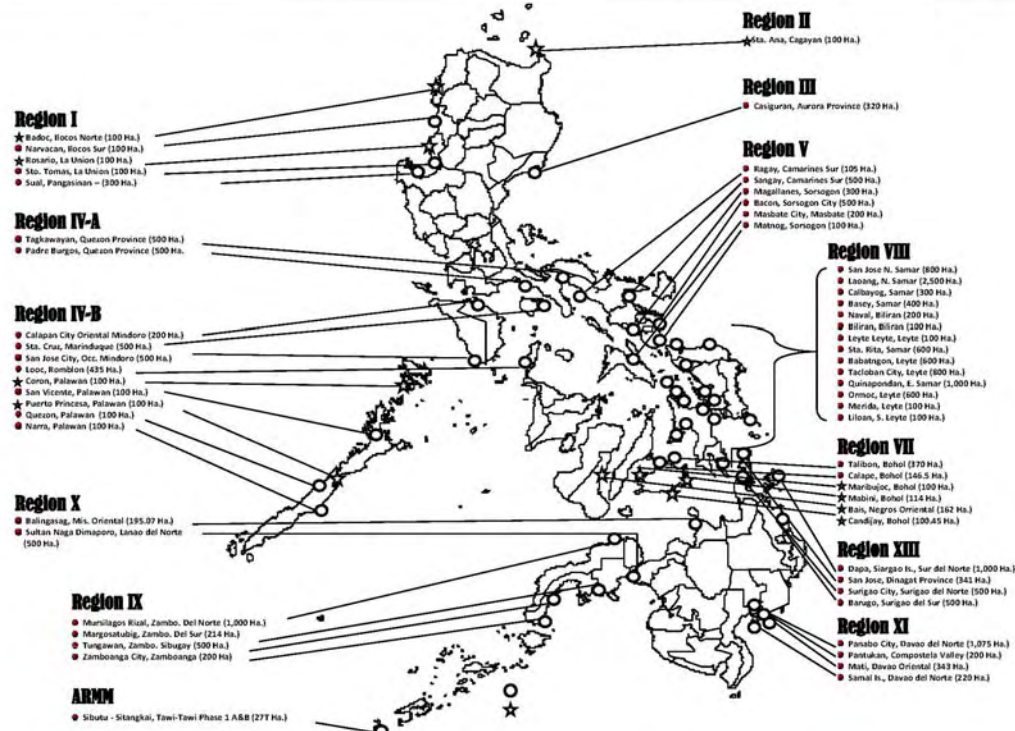
The establishment, development and operation is co-managed by the National Government Agencies (BFAR/DENR) and the Local Government Units

A MARICULTURE ZONE is an area in the sea and adjacent land from 100-400 hectares or with a communal, storm-resistant, mooring system and boundary markers subdivided into individual “farm plots” for fish cage operation, other mariculture techniques, land-based aquaculture, infrastructure facilities , communal fishing ground and navigational lanes



PROJECT/ CASE STUDY (Co-management)	MARICULTURE PARKS/ZONES	
Co-management Scheme		
<p>NGA: Bureau of Fisheries and Aquatic Resources (BFAR)</p> <ul style="list-style-type: none"> • Over-all project administrator • Provide technical assistance to LGUs and interested locators • Provide orientation/training for investors and caretakers • Provide basic infrastructure facilities: mooring system, guardhouse, service/ security boats, solar-powered lighting and security system, PMU office, conditioning facility • Conducts technodemo projects as showcase of technologies 	<p>NGA: Department of Environment and Natural Resources (DENR)</p> <ul style="list-style-type: none"> • Co-manage the MZ project with the other members of the Project Executive Management Council (PEMC) • Issue Environmental Compliance Certificate (ECC) for the establishment of the project • Issue annual permit for the operation • Allow the operation as per DENR-PAMB resolution 	<p>Local Government Unit (LGU)</p> <ul style="list-style-type: none"> • Issue business permit/ clearances that maybe required from the investor • Collect appropriate fees pursuant to existing Municipal Fisheries Ordinance and annual resource rentals from the locators • Co-manage the project and ensure security in the area • Assist in trainings, information drives and promotions for wider awareness and cooperation of residents to the economic activities

Existing Mariculture Park/Zone in the Philippines



**PROJECT/
CASE STUDY**
(rights-based fishery)

SMALL-SCALE FISHERIES

**Registration and
Licensing**
(Deployment of database to the
Local Government Units)

- Enable the registration of fisherfolk
- Eventual issuance of license to the boat and gear used
- Serves as permit to fish in the municipal waters



**Payao/Fish
Aggregating Device**

- Awarded to fisherfolk organization
- Only members are allowed to fish
- Non-members maybe allowed with a certain fee

**PROJECT/
CASE STUDY**
(rights-based fishery)

**AQUACULTURE
(Mariculture)**

Declared Aquaculture Area

- Potential sites for aquaculture (mariculture) is evaluated by the National Government in consultation with other NGA (DENR), LGUs and FARMCs
- Fishcage/fishpens are constructed only within the established zones designated by LGUs in consultation with FARMC concerned consistent with the national fisheries policies
- 10% of suitable water surface area for aquaculture purposes, following proper stocking density, feeding requirement
- Resource rents/permits/user fees are issued by the local government units to set-up fish cages or fish pens

NATIONAL POLICIES/LEGAL MANDATES

- **The 1987 Philippine Constitution – Article XIII Section 7**

Protection of the rights of the subsistence fishermen, especially the local communities, to the preferential use of the communal marine and fishing resources, both inland and offshore

- **Local Government Code of 1991 – Article 149 of RA 7160**

Duly registered organizations and cooperatives of marginal fishermen preferential right to fishery privileges

- **RA 8550 – Section 17**

The duly registered fisherfolk organizations/cooperatives shall have preference in the grant of fishery rights by the Municipality/City council pursuant to Section 149 of the Local Government Code.

- **RA 8550 –Section 68**

The development of fisheries and aquatic resources in municipal waters and bays shall be by the fisherfolk and their organizations residing within the geographical jurisdiction of barangays, municipalities or cities

NATIONAL POLICIES/LEGAL MANDATES

- Republic Act 8550 – Section 69

Establishment of FARMCs at the national level and in all municipalities/ cities abutting municipal waters.

- Executive order no. 774, December 26, 2008

Section 11. Task force on Fisheries

b) With the DILG, the DA shall conduct massive information, education and communication campaigns with coastal local governments to implement section 81 of RA 8550, otherwise known as Fisheries code, mandating that at least fifteen percent (15%) of their municipal waters must be devoted to fish sanctuary.

Opportunity, Constraints of Promoting Co-management and/or Rights-based For Small-scale Fisheries

National agencies are mandated to support the Local Government

-promotion of mariculture promotes co-management and rights-based fisheries

- Subject area environment recovers faster
- Fishing pressure is reduced as employment is created and greater participation becomes evident
- Ownership and value of resource is developed

Resource Management: FARMCs and NGOs support to LGUs leads efforts to manage resources by LGUs FARMCs, POC, and fisherfolk

- In general, insufficient resource of LGUs to sustain achievements made in the project
- Long-term sustainability by the community without strong support from government is something to

Thailand

Suvat Wongsuwat

Fishery Officer, Senior Level,

Department of Fisheries

Fisheries Administration and Management Bureau,

Kasetsart Campus, Phaholyothin Road

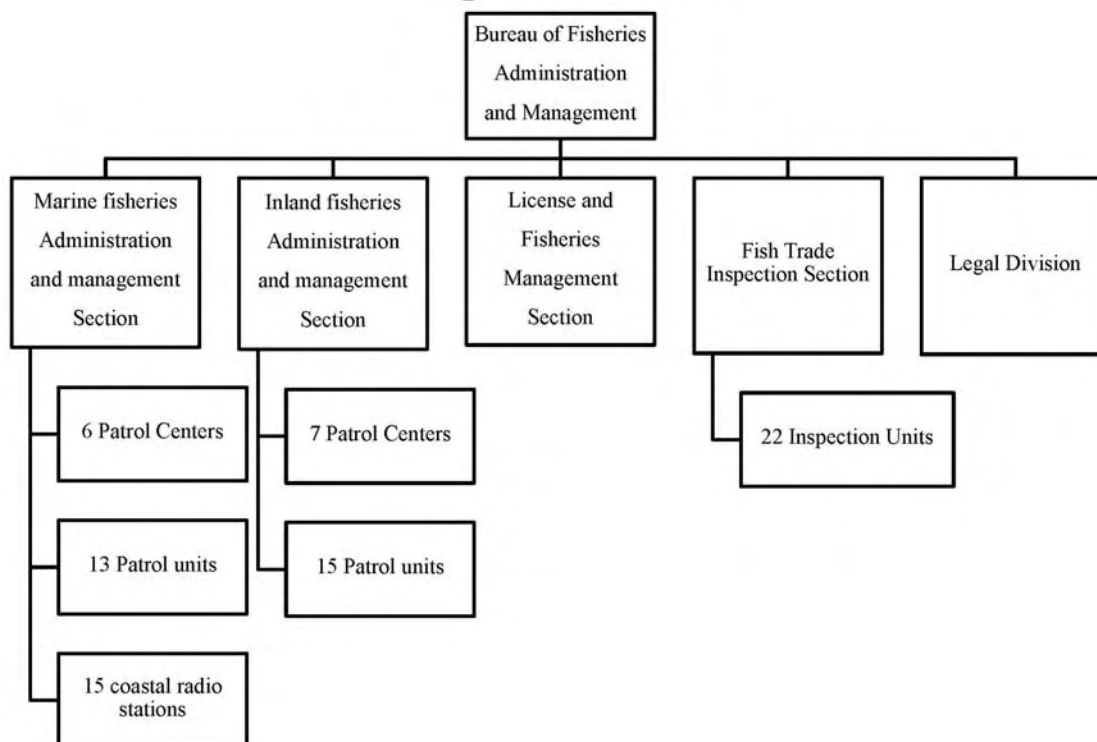
Bangkok 10900

E-mail:suvat50@yahoo.co.th.

Responsibility

Implement various relating acts; i.e. Fisheries Act B.E. 2490 (1947), Wildlife Conservation and Reservation Act B.E. 2535(1992) and other relevant Acts.

Organization



Bureau of Fisheries Administration and Management

**By
Suwat wongsuwat**

Regulation concepts

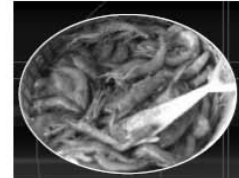
- **Prohibited Fishing Gear**
- **Control of Fishing operation method**
- **Limited size, type and maximum fishing**
- **Closed season**
- **Prohibited species**

Concept

Natural Resources



Emerging replacement



Important Cause

Lack of ownership/Jealousy



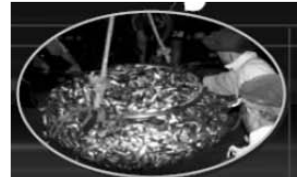
Over Fishing



Respond to Consumer



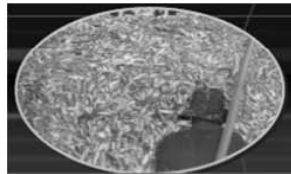
Powerful Tool/Destroy high



 **Catch the season egg**



Catch larvae premature



Project in developing management model

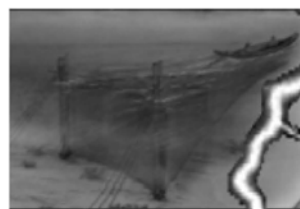


Resource degradation

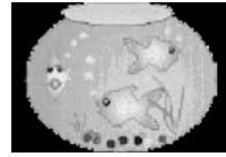


Resource management guideline

Past  **On the arrest**



Present



Strategies 

Generate participation from all sectors

Network conservation

Conservation of aquatic

Do not use prohibited fishing

Fisheries conservation measures

1. Legal measures

2. Social measures

1. Legal measures

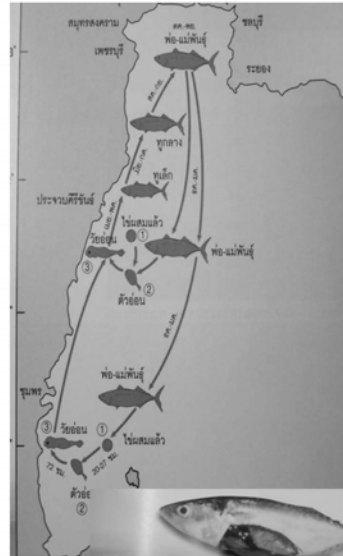
1. The number, type, size and composition of fishing gear
2. Control of fishing gear
3. Protect the environment
4. Control of fishing areas



1. Legal measures

5. Closed season

6. Species conservation



2. Social measures

1. Enhance learning and Aquatic Resources Management, Ex. young fish, Fishery Conservation volunteers.

2. Strengthen the participation of the community social measures



Conservation

Operation in the past

Own Ideas

government

Tell them to do

Present

Resources to the community

Community use benefit

***Responsible for the
management of community***

Participation in fisheries management

government stakeholder



Local government organization

Complicity

- What are the problems?
- The problem came from?



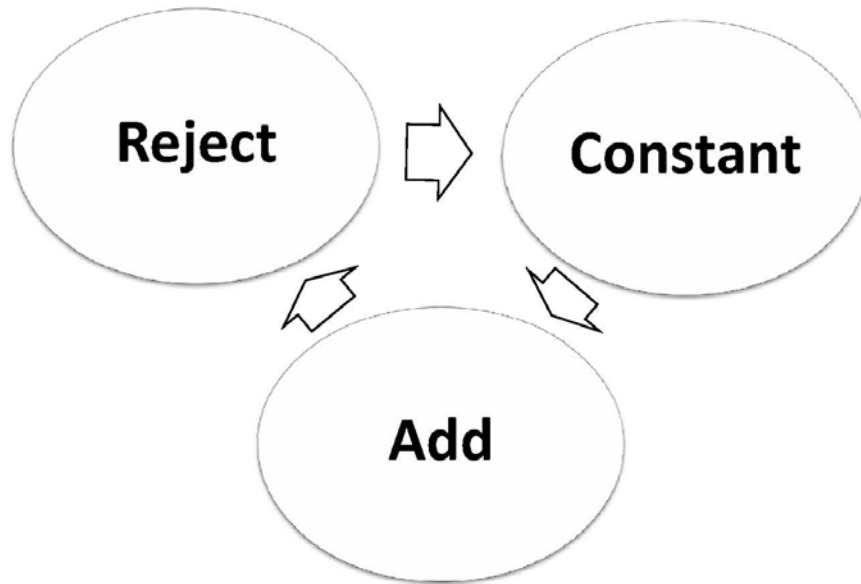
Community must have rule of coexistence

- **Not fishing illegally**
- **Sacrifice of time, labor and money**
- **Prohibited fishing during the type areas.**
- **If there are violations Need to be punished**

Plan of resources management



3 Words



Fisheries management plan



Activity

Goals and measures

objective

The follow up

procedure

Budget

Period

Responsible

Activities along the crabs a community conservation area

- ทาเพื่ออะไร
- ทาอย่างไร? ใช้วัสดุ?
- ทาเมื่อไหร่
- ต้องใช้พื้นที่เท่าไร? กระทบใครบ้าง?
- งบประมาณจากไหน?
- ใครรับผิดชอบ?



Crab bank



Releasing gravid crab which ready to lay egg into the crab bank



Care activities crab larvae



- แหล่งความรู้?
- สร้างงานวนเท่าไร?
- ใช้วัสดุอะไร?
- ต้องของบสนับสนุน?
- ใครรับผิดชอบ?



Surveillance of fishing activities.

เฝ้าแบบไหน?

- เครื่องข่ายเฝ้าระวัง แจ้งข่าวผู้ทำผิด แก่เจ้าหน้าที่
- เฝ้าระวัง กฎของกลุ่ม
- ใครเข้ามาร่วม?
- อาสาสมัครในชุมชน
- ร่วมกับเจ้าหน้าที่
- ยานพาหนะ งบประมาณ?
- รอมทุน
- ขอบทุน ประมง ท้องถิ่น ผู้ว่าฯ องค์กร



Activities to promote eco-tourism



Follow up



Achievement of performance

The coordination of integrate material



เกิดการประสานงานในหน่วยงานของกรมประมงทั้งสำนักงานประมงจังหวัด

The cooperation and support the operation



ผู้บริหารของหน่วยงานอื่นๆ ให้ความสนใจและสนับสนุนโครงการในส่วนภูมิภาคทั้งระดับจังหวัด องค์การบริหารส่วนตำบล เทศบาล

Which friendly relations between the state and public officials



The unity in the community



Revenue increase



Sustainable fishery



Press releases



Vietnam

Nguyen Thi Trang Nhung (Mrs.)

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Cooperatives and right-based management as the core of co-management in VietNam THANH PHONG PILOT SITE (BEN TRE province)



Nguyen Thi Trang Nhung
Vietnamese Fisheries Administration

STATUS OF FISHING COMMUNITIES (1)



- ◎ 28 coastal provinces
 - +125 coastal districts
 - + 20 millions residents (25 % of population)
 - +115 coastal communes depending upon the coastal and marine resources.
 - + 90% fishers are poor, 14% of poorest
 - + The average population growth rate: 2.6%/year (4%/year in some places)
- ◎ Total number of capture households: 150,000

STATUS OF FISHING COMMUNITIES (2)

- ◉ 45% is sandy areas
- ◉ 80% of vessels and boats less 45 HP operating in the nearshore areas
- ◉ Captured species is getting smaller, especially with the high economicaly value species
- ◉ Over-exploited and degraded coastal marine ecosystem and nearshore living resources
- ◉ The destructive gears and capture types (small mesh-size and High rate of by-catch)



Status of Co-management in Vietnam

- ◉ 50 Pilot demonstrations (15 Fisheries models) but not co-management system like in Japan, Philippines....
- ◉ It rather like community-based management than co-management (the role of the local authorities is unclear)
- ◉ Most of Pilot demonstrations are supported by projects of International Organizations reflecting the view and approaches of the donors while the real demands of the localities are not taken consideration and prioritized.
- ◉ Uncompleted legal framework for co-management,



GOVERNMENT FRAMEWORK IN CO-MANAGEMENT

- **Fisheries Laws (2003)**
 - + Promote responsible fisheries
 - + Decentralize fisheries management for local communities
- **Under law regulation on resources protection**
- **Guidelines (SEAFDEC)**
- **Decree 33 (2010) on zoning of marine water area and giving the right to local communities for management.**

THANH PHONG PILOT SITE (Ben Tre Province)

- Started: 10/2008
- Objective: Clam resources management
- Approach:
 - Giving the rights to local communities to manage the coastal area (the area within 6 miles from shore)
 - Co-management with cooperative as the core
 - MSC label for clam



Rationale for Thanh Phong co-management

- ⊙ Coastal fisheries resources was dramatically decreased by destructive fishing activities
- ⊙ Increasing conflicts in clam production areas
- ⊙ Local income is still low
- ⊙ Availability of clam production cooperative in Thanh Phong
- ⊙ EU potential market for clam products



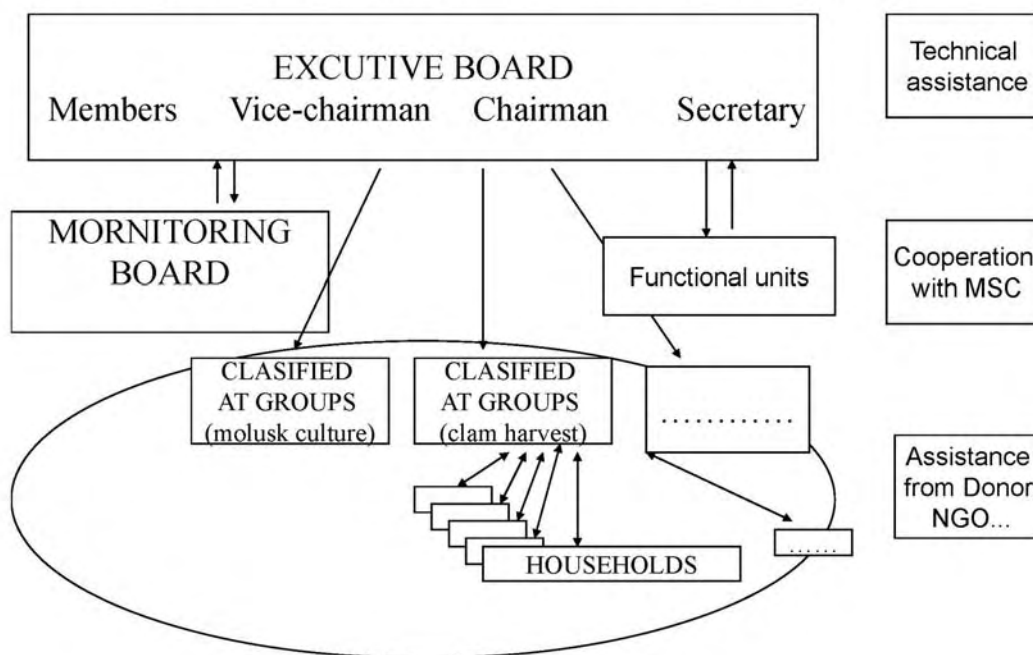
Work done

- Survey, assessment on the communities and stakeholders' conditions, capacity, commitment, and consensus level
- Need assessment on technical supporting of stakeholders in implementing pilot sites
- Management and implementation Plan
- Awareness campaign
- Strengthening cooperative Mechanism
- Legal document on zoning and giving the right of coastal management to local communities
- Technical assistance
- Cooperation with MSC



THANH PHONG COOPERATIVE ORGANIZATION

(Decision of PPC on the right of 254 hecta of clam for management)



Achievements

- Strengthening cooperatives linkages
- Annual income of cooperative members has been increasing from 1.450.000 VNĐ/ 01 labor in 2007 (70 USD) to 7.863.500 VNĐ/01 labor in 2010 (350 USD)
- Clam seed production has been increasing



Challenges

- Much depend on natural seed resources
- Loosen linkage in the production and marketing chain
- Benefit distribution is not completely satisfied by stakeholders
- Insufficient information about the markets (EU..)
- Unstable price
- Uncompleted legal framework



Recommendations

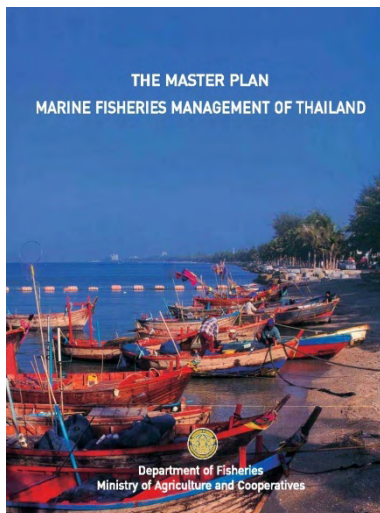
- Finalizing the organization system for core units of co-management such as cooperatives, cooperative groups, production groups, community-based management
- Formulating co-management system taking account of linkage of cooperatives, exploitation groups, market and other stakeholders.
- Decentralizing the right of coastal water management to the local communities. Co-management should be in the framework of right based-fisheries management.



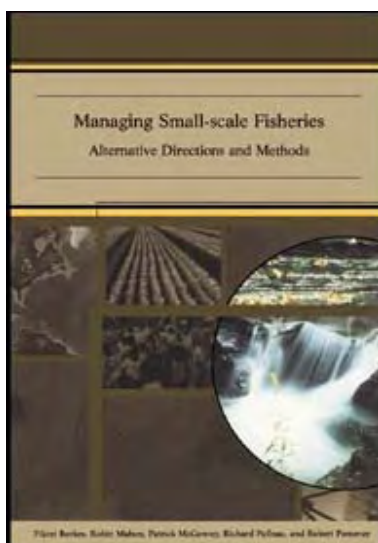
Reference papers in the regional workshop



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Department of Fisheries, Ministry of Agriculture and Cooperative, 2008, *The Master Plan of Marine Fisheries Management of Thailand*, Page 27-29



Berkes, F., et al. 2001, *Managing Small-scale Fisheries: Alternative Directions and Methods*, International Development Research Centre, Ottawa, Canada, Page 212-215, www.idrc.ca/booktique



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