



MESOAMERICAN BARRIER REEF SYSTEMS PROJECT (MBRS)



TRAINING COURSE MANUAL

TRAINING IN TECHNIQUES FOR FISHERIES CO-MANAGEMENT IN THE MBRS REGION

(Revised for Web Publishing)



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**CONSERVATION AND SUSTAINABLE USE
OF THE
MESOAMERICAN BARRIER REEF SYSTEMS PROJECT
(MBRS)**

Belize – Guatemala – Honduras - Mexico



Training Course Manual
Training in
Techniques for Fisheries Co-Management
in the MBRS Region

Based on the
“Training in Co-management of Marine Fisheries Resources in the
Mesoamerican Barrier Reef System Course”

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PREFACE

Within the region of the Mesoamerican Barrier Reef System there exists a wide diversity of fish and invertebrate species with high economic value, which at the same time are fundamental to the maintenance of the health of the reef ecosystem. To date, approximately 60 species of corals, 350 species of mollusks and more than 500 species of fish have been recorded.

In this way, the marine environment plays an essential role in the economy, culture and traditions within the MBRS region. These tight relationships must be understood holistically in order to propose effective management of the activities that make use of the coastal and marine resources.

The MBRS Project promotes the conservation of coastal and marine resources, and also supports the sustainable development of the fishing communities, whose principal economic income comes from harvesting marine resources. The levels of pressure on these resources could become unsustainable if it does not involve the participation of the fishing communities in the conservation and management of these resources.

In response to this need, the MBRS Project applied itself to the task of organizing and coordinating a regional training event on Techniques of Co-Management of the Marine and Coastal Resources, focused on the conservation and management of these resources, with the participation of fishing communities, who in turn, during the process, strengthen their own economy, as the principal users.

The Natural Resource Management Specialist (NRMS) of the Project Coordination Unit defined the profile of the delegates, ensuring the participation of key actors, such as representatives of Fisheries Cooperatives, the authorities responsible for the control and regulation of fisheries activities, and managers of Marine Protected Areas. They were asked to bring to the training, examples of co-management of fisheries resources in their countries, in order to be able to present case studies.

Likewise, the NRMS of the PCU developed the Terms of Reference (ToR) to ensure the professional quality of the training facilitator, provided guidance on the tasks to be undertaken, and defined the structure and content of the training course and the manual.

The process involved the participation of a facilitator, to prepare the preliminary training material, under the supervision of the NRMS of the PCU, and using the documentation provided by him. In accordance with the ToR, the facilitator delivered the training to 20 delegates from Belize, Guatemala, Mexico and Honduras, collected the inputs from the participants and developed the final version of this manual, incorporating the comments of the NRMS of the PCU.

During the training, questions related to the following were discussed: How to involve the fisherfolk in co-management? How does it benefit the fisherfolk to become involved in the management and conservation of the fisheries resources? What type of incentives will co-management offer? How will the fisherfolk be convinced to change their attitude and protect the resources on which they depend for their livelihood?

Additionally, successful and unsuccessful examples of co-management of fisheries resources, involving fishing communities within the MBRS region and other countries, were reviewed. It is our intention that the current tool could be used in widespread training courses and serve as a

guide in the process of formulating programs for the co-management of marine and coastal resources.

With this manual, the MBRS Project reaffirms its commitment to produce support material for the conservation and sustainable use of the marine and coastal resources, with the participation of different sectors of society, governmental and non-governmental organizations, thereby promoting participative spaces for decision-making.

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1. TRAINING PROGRAM

DAY 1

Morning

Introduction and presentation

Self identification (Elaboration of matrix 1)

Recapitulation

Afternoon

Presentation of Study Case One

Co-management of fisheries in the Philippines

Reading assigned for the day:

The voice of the fishermen; and,

Two to tango: the role of government in fisheries co-management (Pomeroy and Berkes 1997)

DAY 2

Morning

The question of the day: What is co-management? Concepts and definitions

The fishing activity and fisheries management for the different MBRS countries

Discussion related to the previous day reading and conference.

Afternoon

Towards the formulation of an hypothetic case

Field trip: a visit to a fish / shell-fish market

Working groups (resolve the same hypothetic case with only one variant per group)

Night

Social and cultural activities. Cooking recipes of MBRS

DAY 3

Morning

Comparing and contrasting results from the analysis of the study of the hypothetical case

Study of case: mini-case fisheries of Gambia

Training evaluation and final comments.

Noon

Closure

2. INTRODUCTION

FUNDAMENTAL ISSUES

The course seeks to present techniques of co-management to groups of fishermen from the representative communities located all the long area of the MBRS Project. Due to the diversities of its populations (nation, ethnic, class, language) the course requires a plural vision and the use of a variety of methods to confront their needs.

THE ISSUES COVERED IN THIS MANUAL INCLUDE:

- How to involve fishermen in the co-management?
- How will fishermen benefit from participating in co-management and conservation of fisheries resources?
- What type of incentive will be offered by co-management?
- What will be the reasoning for the fishermen to change their attitude and participate in the protection of the resource on which they depend for living?
- Provide tips for the training manual on co-management of fisheries.

METHODS

Participatory research looks for the participation of the community in the process of discussion of the existing knowledge related to the facts and events that surrounds resource utilization. Participatory research must be seen as a systematic way of learning, gesticulating, intervening and changing the reality of the marine resources. It is pretended that the communities no longer be objects (of study, participation, etc.) but rather become subjects.

The results expected from the participants:

It is expected that participants in the training course participate actively in conferences and discussions. Also they are to share abilities, knowledge, ideas and experiences. It is also required that they read the assigned material, and cooperate in the construction of the training manual. Finally, participants are expected to reach out to other co-nationals, and follow the rules of the game, including participation, tolerance and respect.

TRAINING MANUAL

DAY ONE

Morning:

Introduction and presentations of the course

3. THEMATIC UNIT 1:

Who are we? Identification of the course participants

It is expected that course participants will get to know each other. There are different ways of self introduction (self identification). In this course we will use verbal introductions, which will be followed by the location on a map of the participant's areas of interest and further in the first matrix.

Self-identification Matrix (elaboration of the first matrix)

Self-identification (Matrix 1) Information included in the first matrix:

- Geographic localization
- Local, regional, national, and transnational.
- Cultural characterization
- Groups with Creole, Garifuna, Maya Yucateco, Q'eqchi', Mopan, Mestizo or latino tradition and ascendance
- Economy and trade activities (subsistence and/or accumulation)
- Fishing activity
- Fishing methods, areas and species targeted
- Responsible organisms and/or activities
- Government agencies and NGO's
- Other forms of knowledge of the environment, traditional knowledge, archeology, etc.
- Tides, currents, winds, reefs, shoals and banks, etc.
- Other members of the community and close communities
- Problems with the management of the marine resources
- Relationship with other institutions
- Religious community, development, health, education, housing programs, etc.

MATRIX 1: WHO ARE WE? (EXAMPLE)

GEOGRAPHIC LOCATION	ETHNIC / CULTURAL GROUPS	ECONOMIC ACTIVITIES	INSTITUTIONS	ENVIRONMENT	PROBLEMS IN RESOURCE MANAGEMENT

OTHER TECHNIQUES FOR PARTICIPANT INTRODUCTIONS

One requires the formation of pairs of participants. After the formation of pairs the participants interview each other for five minutes and then they take turns introducing their partner. This includes the description of their partner including his/her name, the type of work activities, the expectations for the training, and what are his/her personal relaxing activities such as hobbies, etc.

RECAPITULATION

It is important at this point to sum up the information presented through the morning session. The map and the first matrix should be read to corroborate the information consigned, fill up empty spots, or to question confusing data.

DAY ONE

Afternoon:

4. THEMATIC UNIT 2:**CASE STUDY PRESENTATION: A LESSON LEARNED**

This is a conference type activity that seeks to **present lessons** that can bring light and experience into the **questions affecting the productive activity** itself. It is anticipated that this case study presentation will **create a reflection with a systematic order** for the reading of the day.

LESSON LEARNED: A SUCCESSFUL STORY

B.M. Kalton, R.S. Pomeroy and A.M. Salamanca. 1977. The marine conservation project for San Salvador: A case study of fisheries co-management in the Philippines. ICLARM.

San Salvador is an example of how a fishing community designed, used and respectfully observed the laws and fisheries regulations with the advice and assistance from the government. The fishermen also accomplished the creation of a reserve in a local area. Moreover they are currently reporting illegal fishing activities and are managing the use of the resources with support from the government.

OVERVIEW:

San Salvador is an island village in the Philippines that has been inhabited by three generations of residents. The original migrants were farmers without any fishing tradition and by the end of the 1960's fish and coral were abundant and there were no use conflicts. Later on in the 1970's, new migrants from a different ethnic group arrived to the village initiating the aquarium fish market, and a change toward the destructive fishing methods occurred.

BACKGROUND INFORMATION

By the end of the 1980's, a reduction of the fisheries resources and the destruction of the corals began to be perceived. The average capture decreased from 20 to 1-3 Kg. per fishing trip. Snappers, groupers and damselfish were depleted, and live coral cover was only about 23% of the sea bottom. The government had financial and regulatory limitations and the fishermen were not integrated as to take collective action. Later on, a local NGO helped the fishermen and the local government to restore the fisheries through coral reef management techniques.

CONTEXTUAL VARIABLES INCLUDED IN THE ANALYSIS:

The biological, physical and technological attributes of the island including boundaries, nearby cities, communication, fish abundance and capture methods, state of the environment, etc. were identified. Some of the market attributes indicated a direct export market for the aquarium fishes.

An analysis of the fishermen communities indicated that they were characterized by the included low income, fishing dependent, cultural heterogeneity of its members. The institutional and organizational attributes of the local government and legislation were also characterized. Finally the location and mapping of the resources of the island was conducted.

TECHNOLOGICAL CHARACTERISTICS:

First the fishing equipment was described. Until the 1960's only traditional, non-destructive methods such as hook and line, nets and harpoons were used. By the 1970's a change towards destructive methods such as explosives and the use of sodium cyanide was set off when the market for aquarium fishes was developed. This was linked to immigration of people from a different area. By 1989 a reserve area was created and the use of destructive methods was forbidden. The methods currently in use include municipal bag net, compressor, hook and line, nets, and harpoons. Municipal bag net uses lamps to attract fishes to the nets.

BIOLOGICAL ATTRIBUTES:

With the creation of the reserve area, some benefits were observed. There was an increase of captures, and the abundance of fishes and lobsters increased in the reserve. Also new fishing areas were discovered when the fishermen started looking for new fishing grounds.

The main stakeholder groups included in the analysis were individual fishermen and fishermen associations, fish trades and merchants, the protected area management board, the municipal government, and all non-organized groups of men and women. All the stakeholder groups (except those not organized) have formal and legal status. Other groups included people conducting other activities such as farmers, market salesmen, construction workers and boat and ship builders.

INCENTIVES FOR COOPERATION AND PATTERNS OF INTERACTION**INCENTIVES FOR FISHERMEN**

First it was acknowledged that the fishermen depend of the fisheries resources and they need to recognize the necessity to revert the tendencies in the reduction of the captures. In other words, the fishermen expressed their concern for protecting the resource that sustains their livelihoods. Fishermen also toured better kept areas to help them evaluate the conditions of their own resources and the need to create a marine sanctuary and reserve.

The creation of a reserve area was agreed upon, where fishing inside the sanctuary was prohibited, and the use of destructive fishing methods inside the reserve was stopped. Some of the tangible benefits of collaborative efforts included fish yield increase, NGO sponsoring, and the enhanced social and political standing of the community leaders.

REACTIONS OF THE FISHERMEN

As was expected, not everyone was happy. Aquarium fishermen particularly lost income, and the lack of alternatives for the first year made conditions extremely difficult for them. The second year the situation got better with the introduction of new fishing methods, the creation of artificial reefs, and new fishing grounds were sought out.

Aquarium fishermen pointed out, probably in revenge(?), the use of other destructive methods such as seine nets, which were eventually banned. After this, seine net fishermen who in the beginning supported the creation of the sanctuary, later on withdrew their support.

INCENTIVES FOR THE GOVERNMENT AND NGO'S TO PARTICIPATE

Initially the government expressed their willingness to improve the social and economic conditions of the people and their preoccupation for the sustainable management of the coastal resources.

Another incentive for the government was to work towards food security, and the acquisition of additional funds for surveillance and law enforcement (boats, radios, salaries and food for the coast guards). Overall the government saw better problem solving capacities, consensus building, and conflict resolution.

INCENTIVES FOR ALL

Among the incentives for all stakeholders was the goal to give back the power and responsibility to the local government. Also better legislation and vigilance of the laws was achieved. Finally a National Award was granted to the community, recognizing the achievements in resource management.

CHARACTERISTICS OF SUCCESSFUL CO-MANAGEMENT INSTITUTIONAL ARRANGEMENTS

First among the characteristics of successful arrangements is the recognition of the existence of a problem in the availability of resources, and the respect and enforcement of property rights. The influence of fishermen in project planning and the participation of the affected stakeholders are also crucial to secure the support of local leaders and the cooperation among fishermen. It is also important that fishermen depend on fishing as the principal source of income, and that they know the project objectives to develop a positive attitude toward the regulations. Legal presence, political support, and community cooperation will also help achieve co-management success. The existence of pre-established schemes of supervision and evaluation and the presence of tangible benefits of the co-management arrangements will help reinforce incentives to collaborate.

TODAY'S HOMEWORK

READING AND ANALYSIS OF THE FOLLOWING DOCUMENTS

1. "The voice of the fishermen" for the fishermen participants, and
2. "Two to tango: the role of government in fisheries co-management." Robert S. Pomeroy and Fikret Bakes. 1997, for functionaries and NGO's.

DAY TWO

Morning:

THE QUESTION OF THE DAY: CO-MANAGEMENT

“...once there was a monkey hanging from a branch inside the deep forest, who saw a beautiful and vigorous tarpon fighting against the river current. When the monkey saw this he thought of the anguish the tarpon was feeling, as it seemed to be drowning, going out of breath and next to dying. Then he decided to help. He let go all his weight over the end of a branch that bent above the river and after a clever overtake with his hand, the monkey pulled the tarpon out of the water”

5. THEMATIC UNIT 3

CO-MANAGEMENT: DEFINITION AND CONCEPTS

This presentation seeks to show the participants the definitions and categories involved in co-management. This will work as an introduction to the next activity regarding the dynamics of fish production.

WHAT IS CO-MANAGEMENT?

BACKGROUND

Fishery managers increasingly recognize that fisheries cannot be managed effectively without the cooperation and participation of fishermen to make laws and regulations work. Moreover, the growing realization of the need for increased participation by resource users in fisheries management can be seen in a wide range of policies and programs worldwide.

Co-management uses the capacities and interest of local resource users and communities, complemented with the ability of the government to provide legislation, surveillance and mechanisms for conflict solving. Co-management is not a regulatory technique, but rather it must be seen as a flexible management strategy in which the creation and maintenance of a forum for the stakeholders, resource users, and the government to participate in, is permitted. Some of the activities conducted in this forum are the creation of regulations, conflict management, power sharing, development of leadership, dialogue and decision taking, and the generation and sharing of knowledge.

Fisheries co-management is defined as an arrangement in which government agencies, the community of resources stakeholders (fishermen), no governmental organizations and other resource users (fish-dealers, boats owners, merchants, etc.) share the responsibility and the authority in the management of the fishery.

COMMUNITY-BASED RESOURCE MANAGEMENT OR CO-MANAGEMENT?

The difference between community-based resource management and co-management lies on the level of government participation and when the government becomes involved in the management process. In community based resource management the government plays a minor role, while on co-management arrangements, the focus is on issues and also on a partnership arrangement between government, the local community and resource users.

SPECTRUM OF CO-MANAGEMENT ARRANGEMENTS

There is a wide spectrum of co-management arrangements (Figure 1.2. from Tomada de McCay 1993 and Berkes 1994), including:

- Consultative:** Institutional structures for government to consult with user-groups and fishing communities exists, but all decisions are taken by government.
- Cooperative:** Government and user-groups/fishing communities cooperate together as equal partners in decision-making.
- Delegated:** Management authority (mainly for setting operational rules) is delegated to user groups/fishing communities and government is informed on decisions taken.

THE TYPE OF CO-MANAGEMENT ACCORDING TO THE ROLE PLAYED BY GOVERNMENT AND RESOURCE USERS INCLUDE:

- Instructive:** Minimal information exchange
- Consultative:** Consultation exists
- Cooperative:** Cooperation as equal partners
- Advisory:** User advice to government and
- Informative:** Delegation of authority to users

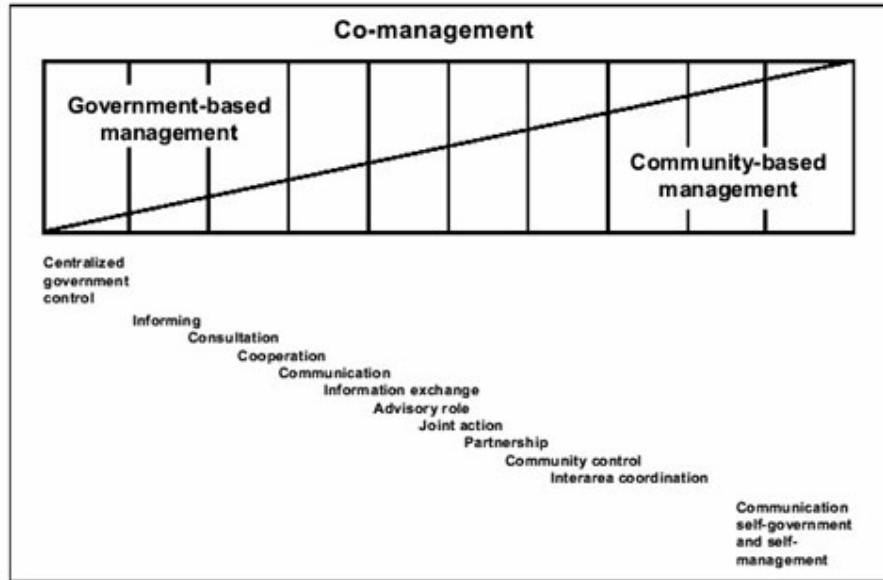


Figure 1.2. The continuum of possible co-management arrangements.

Another guideline that is important to keep in mind is that there are no co-management recipes, only recommended methodologies and matrices. The success of a proposed management measure also lies on the appropriation by the fishermen of such a measure. It is important to recognize that the fishermen are already managing the resources, successfully or not, as they are in day-to-day contact with the resources but sometimes lack analytical and communication skills.

COMMON PROPERTY RESOURCES THEORY

Harding wrote in 1968, in his famous essay “The Tragedy of the Commons” that “... Freedom of the commons brings ruin to all”. This passage can be interpreted as when resources are limited and publicly owned, it is rational for each individual to overexploit them, even though this will result in tragedy for the group. For this situation Harding proposed the following solution: privatization or government control.

Common property resources theory tries to find answer to the questions of, who holds property rights? Who regulates the fishery?

There are several possible property regimes, including:

Communal property: Resources belong to a community that can exclude and regulate use.

State property: Government owns resources and dictates rules on behalf of all citizens.

Private property: An individual or corporative holds rights to exclude other and regulates resource use, and

Open access: No property rights at all.

THE PROCESS OF CO-MANAGEMENT

The implementation of a co-management process includes the Pre-implementation Phase, the Implementation Phase, and the Post-implementation Phase.

THE PRE-IMPLEMENTATION PHASE

The process starts with problem recognition by fishermen, followed by an open discussion about the problem. Next comes a process of negotiation, consensus building, and the development of agreement on a plan of action. Fishermen may seek assistance from outside agencies (government or NGO's) at this point in the process which concludes with an initial approval for the project from different levels of government.

THE IMPLEMENTATION PHASE

This phase focuses on resource management, protection, conservation and rehabilitation. This is normally achieved through regulation, policy, community and economic development in a effort to development alternative and supplemental livelihoods. Community services and infrastructure together with capability building and institutional support play an important role that leads to people empowerment and participation. Final steps in the implementation phase are the development of education, leadership, conflict management and organization mechanism.

THE POST-IMPLEMENTATION PHASE

During this phase the evaluation of project activities is conducted, plans and activities are adjusted as needed and the replication and extension of results to other communities.

The Fisheries co-management research framework should include important indicators and decision taking arrangements. The patterns of interaction and the co-management outcome will depend on a clear view of the following attributes of the fishery and the community:

BIOLOGICAL AND PHYSICAL ATTRIBUTES

1. Species
 - Single or multi-species?
 - Sedentary or migratory?
2. Boundaries
 - Physical
 - Administrative
 - Restriction in access to fish resources
3. Health status of fish habitats
 - Spawning and nursing area

- Fishing grounds
 - Pollution
4. Level of stock exploitation
 - Decreases in total catch over time
 - Catch per unit effort (CPUE) increase or decrease
 - Stock assessment.
 5. Characteristics of fisheries
 - Industrial,
 - Artisanal
 - Fishing technologies and gears used
 - Physical range of fishing operations
 - Seasonal variations in fishing activities
 6. Utilization of catches
 - Fresh
 - Salted
 - Dried
 - Smoked
 - Fermented
 - Frozen
 - Canned
 7. Market attributes and indicators
 - Subsistence or market fishery
 - Proportion of the catch Sold/consumed?
 - Market structure
 - Are there many buyer/sellers?
 - Other market segments attended by women?
 - Market orientation
 - Local, domestic, international
 - Value of products

6. THEMATIC UNIT 4:

THE FISHING ACTIVITY: HOW THE DIFFERENT COUNTRY CASES WORK

Fishery dynamics and other related activities for the different countries are presented. Work based on matrix similar to Matrix 1, “Who are we” is compared to The Voice of the Fishermen document.

SECOND MATRIX

Includes information on fishing activities dynamics, all participants involved with the fishing process, and factors such as who fishes and who distributes and sells the different fishery products. It also includes the diverse forms of participation, fishing gears, boats and large fleet owners, other aspects such as traditional fishing practices and systems, the specific uses of areas, special permits and rules, or any new regulations in practice. What is the benefit of participating in a SAM project, in terms such as tourism as a productive activity the relations with government organizations?

Example of Matrix 2: The fishing activity.

COUNTRY	SPECIES	FISHING GEARS	PROCESSING	MARKET
Mexico	<ul style="list-style-type: none"> • Shrimp • Cuttlefish • Lobster • Sierra 	<ul style="list-style-type: none"> • Free diving • Compressor • Traps 	<ul style="list-style-type: none"> • Salted • Iced 	<ul style="list-style-type: none"> • Coasts • Hotels

OUTDOORS ACTIVITY FOR THE TRAINING COURSE:

A visit to a fishing center (market or landing place in Belize, cooperative, fishing community) is suggested. The objective of this activity is to allow participants to analyze the dynamics of the fishing activity *in situ*. This also allows for a more informal exchange among participants.

DAY TWO

Afternoon:

7. THEMATIC UNIT 5:**TOWARDS THE FORMULATION AND ANALYSIS OF A HYPOTHETIC CASE**

Provide tools to build questions that later support formulations and analysis of a hypothetical (or real) case and the lines that can be used to analyze these examples. The use of a hypothetical case is preferred when the participants cannot agree on a unanimous real case.

HYPOTHETIC CASE FORMULATION

Groups of four people will be assigned to work with the same hypothetical case, but based on four variants, i.e., a resort, hurricane, immigration from other areas, or national boundary related problems.

HYPOTHETIC CASE: CARACOL VILLAGE

The characteristics of Caracol Village are:

1. Located on the coastal zone on mainland, with a bay with a large river input.
2. There is free access to fishing; no current regulations are in place.
3. It is a degraded area. Symptoms include decrease in catches, increase on fishing pressure, and reduction in fish size.
4. The fishery target species include snook, shrimp, lobster, and conch.
5. Fishing groups include artisanal gill net, free diving, and the use of try nets.
6. Product processing is fresh with ice.
7. Tourism development project: a large, 100 room hotel will be constructed soon.
8. Commercialization characteristics: fish products are sold on beaches, local market, or for exportation, middle men also operate.
9. No other current economic activities in the village.
10. Long fishing tradition, 300 years old.
11. No leadership or social organization present.
12. Only elementary school available.
13. One church, one bar, and one football team are the only leisure activities presently available.
14. Access to the village is only through a dirt road which is closed during the rainy season

VARIANTS FOR THE FOUR GROUPS ARE:

1. Large hurricane, broken coral, sedimentation, and toppled mangrove trees.
2. Large immigration of people from mainland area, who are agriculture oriented.
3. Large industrial fleet is asking permit from the government to start fishing in the area
4. Financial problems alcohol related, bad social habits and family problems.

HYPOTHETIC STUDY CASE ANALYSIS RESULTS**GROUP 1**

Variant: A hurricane struck resulting in broken coral, sedimentation, and toppled mangrove trees.

Group recommended procedure:

1. Conduct a study to evaluate damages caused by the hurricane to both ecosystems and species.
2. Promote the restoration of damages.
3. Limit fishery activities on affected reef areas.
4. Promote community organization to help with the suggested actions.
5. Evaluate the development of alternative projects that can profit from the topped mangrove trees for fuel or charcoal or handcrafts with broken coral.
6. Only local people should be able to continue fishing.
7. Propose catch regulations.
8. Government should provide financial help for repairing damaged boats, gear and structures.
9. With new motors and boats, explore new fishing areas.
10. An emergency zone should be declared and economic resources from public funds to rebuild the damaged infrastructure should be sought.

GROUP 2

Variant: Immigration. A hurricane destroyed a small village in some part of the country and the government wants to send 100 families to settle in Caracol Village.

1. Talk with the leaders of the small village and tell them what can be done to integrate these people into the village.
2. People in the village do not want to increase the number of fishermen, even though there is a portion of land behind the village.
3. The government and the villagers agreed to give a piece of land to the new 60 families. New settlers are getting organized and promised to give back the credit they are receiving to install and buy machines. They can live in Caracol Village, cultivate and sell, and also sell to nearby communities.
4. Government also agreed to build a Hotel and provide employment to 20 more people and to build an ice factory to give work to another 10 persons and benefit the town.

Condition

They will only give this land to people who have live there for five years.

GROUP 3

Variant: Industrial fleet. An industrial fleet is asking for authorization to start fishing in the area.

1. Fishermen recognized the problem and contacted an NGO which helped them contact a government representative.
2. The government representative visited Aldea Caracol, presented the project and provided more information.
3. Not convinced, the fishermen asked for support to get organized and created and legalized the fishermen association.
4. Fishermen asked the NGO to share the money with them
5. NGO explains that it is not possible to give money but they can elaborate a project and ask for support and credits.
6. Organized fishermen ask that the 300 years old traditional fishing right of the people be recognized.
7. The government representative has convinced them of the benefits of the project and now fishermen agree to authorize only half of the proposed fleet.

8. The NGO thinks this project is wrong and that it should not be authorized, but some fishermen want it. The NGO offers to conduct a study to demonstrate how harmful the industrial fleet is.
9. Conflict resolution: The NGO proposed fishing in certain areas. Fishermen asked for support and equipment.
10. A mistake was made allowing the NGO to be the fishermen's interlocutor.
11. The fishing gear is changed and the fishing area is determined. It is agreed to accept the industrial fleet project for one year and to repair all damages.

GROUP 4

Variant: Financial problems related with alcoholism, bad social habits and family problems among the village people.

REASONS:

- Few employment opportunities,
- Access roads,
- Low academic level.
- There is no control of resource usage

SOLUTIONS:

- Improve roads, services, and the participation of an NGO.
- The NGO must improve education in the village and create a small credit fund for fishermen. The government can also support with scholarships. Sport activities and a program against alcoholism can help to improve the situation.
- The NGO and fishermen can organize a cooperative and fisherman can receive training on financial management.

DAY TWO

Night:

CULTURAL ACTIVITY

With the occasion of the training course in Belize, the participants produced the following MBRS list of seafood recipes, collectively called “MBRS flavor”. Another option is to conduct a gift exchange, especially if those gifts are handicrafts produced by the fishermen.

RECIPES

1. MACHUCA (Honduras):

Ingredients: onion, garlic, black pepper, hot pepper, coconut, seafood consome, an entire fish (or conch), and plantains (green or ripe).

Preparation: cook plantains while grinding coconut. Strain coconut and obtain coconut milk. Boil coconut milk with all spices, and cook fish in this soup. Crush plantains. Serve all ingredients together or separate.

2. TAPADO (Guatemala):

Ingredients: fried fish, blue crab, conch, shrimp, green plantain, coriander, onions, tomato, rice, yucca, badu, malanga, albahaca, bananas, salt, pepper, coconut milk, and achiote.

Preparation: mix coconut milk and water (2 to 1) and boil. Add the other ingredients except seafood items to the coconut water boiling mix and boil for 15 minutes or until cooked. Crush bananas, make little balls, and add them to the mix. Add fried fish, blue crab, conch and shrimp. Cover for 2 to 5 minutes. Serve in a soup plate. Cook rice on coconut milk and serve separate. Accompany with an octavo de venado or liter of beer.

3. FLAMBÉED FISH (Mexico):

Ingredients: a whole fish, onions, beer, habanero pepper, consome, salt, pepper, olive oil, powdered garlic, and coriander leaves.

Preparation: fry the onions and other ingredients (except beer) in olive oil. Fry fish separate with salt, pepper and lemon (marinate). Serve fish in a plate and add all fried ingredients. Eat with a beer.

4. CONCH FRITTERS (Belize):

Ingredients: one pound conch fillet, black pepper, garlic salt, salt, sweet pepper, habanero pepper, baking powder, half a pound flour, oil, water and onion powder.

Preparation: boil conch meat until color change, and then cut in small pieces. Mix flour, baking powder, peppers, and water until a thick dough is obtained. Put conch meat in a bowl and add pepper, salt, garlic salt, and mix. Combine this with the flour mix. Heat oil and add a teaspoon of conch – dough mix and turn when color changes. Withdraw from oil and place on a paper towel.

DAY 3

Morning:

8. THEMATIC UNIT 6:**CASE STUDY PRESENTATION: ANOTHER EXAMPLE OF CO-MANAGEMENT?**

Lecture type presentation of an outside of the region study wherein the diverse mechanisms from a government perspective are introduced. A case study analysis where tension between artisanal and industrial fishermen exists.

Njie M. and Mikkola H. 2001. A Fisheries Co-management Case Study The Gambia. Social, Economic and Policy Aspects of Fisheries. Naga, The ICLARM Quarterly (Vol. 24, Nos. 3 & 4) July-December 2001.

OVERVIEW

Artisanal (small-scale) fishing is an extensive, low input activity that uses simple fishing (gill net encirclement) and processing techniques. Target species are pelagic fish (clupeids), and the product is destined for domestic market. On the other hand, industrial fishing, is high investment, and targets demersal species. Processing is done at factories, and the product is destined for the export market.

The Fisheries sector employs some 36,000 people, mostly in artisanal fisheries, while most processing and marketing is conducted by women. Other activities include canoe construction, outboard engine repair, fuel wood sale, and small commerce practices.

HISTORY

Farming is the traditional occupation in the coast, with fisheries in second most important place. Recent immigration of skilled fishermen from other region has occurred. Fish smoking is the main processing and it requires large amounts of wood which leads to deforestation. Poor condition of roads has limited market expansion and the access to fisheries extension services. Finally, fish handling, processing, marketing, and distribution facilities are non existent.

EARLY DEVELOPMENT EFFORTS

During the 1960's, the government introduced an artisanal fisheries development strategy, aimed at increasing catches and employment through capital lending. Benefits were slow, however, due to the top-down approach adopted by the government. Finally, in 1979, with European Economic Community (EEC) funds, Community Fisheries Centers were created.

Objectives of the Community Fisheries Centers

- raise the income of fish workers through increased catches
- increase consumption of fish by improving processing, marketing and distribution
- increase rural job opportunities (by increasing Gambian participation in the sector)

- develop industrial and artisanal fisheries in an integrated manner
- diversify the economy and intensify economic activities in the fisheries sector
- improve national socioeconomic standards

HOW DOES CO-MANAGEMENT WORK?

Through improvement in the process of organization and institutionalization. Fisheries Department extensionists were posted at landing sites with the goal of fisheries data collection, supervision, research, and extension activities. The creation of User group associations was also developed.

QUESTIONS:

Is this co-management?
Are they headed in the right direction?

PRESENTATIONS OF THE READINGS ASSIGNED THE FIRST DAY

“The voice of the Fishermen”

Conclude course activities with a presentation of comments and analysis of the document, including aspects of geographic location, species caught, number of fishermen, fishing gear, and market and processing conditions.

“Two to Tango”

How can you apply these lessons from the reading to conditions in your country or some other MBRS country?

9. INDIVIDUAL COUNTRIES TRAINING PLANNING

TRAINING PLANNING FOR THE INDIVIDUAL COUNTRY COURSES

It is suggested that as many fishermen as possible participate, 35 at least. The training will be coordinated by National MBRS coordinators. Financial support to cover transportation, hotel and meals for participants will be provided. Course instructors will be the participants at the Belize training course. A training manual will be available.

What elements should be included in the two-day training?

Objectives include presentation of co-management techniques that are available. Create consciousness in participants to work under co-management arrangements. Ensure government and NGO participation.

COUNTRY TRAINING COURSE STRUCTURE

DAY 1:

Morning

Presentation (objectives of the activity)
Participant introduction, definition and concepts of co-management

Afternoon

Identity matrix with opportunities for action and solution to problems
Case study presentation (Cayos Cochinos, Banco Chinchorro, Pacto de Caballeros, or Bahia de Amatique)

Evening

Social activity, dinner, and humor, fishermen tales

DAY 2:

Morning

Identification of a conflict case
Group formation and role play assignation (government, NOG, and fishermen).

Afternoon

Group results presentation
How to improve current co-management activities
Closing, course evaluation and comments, evaluation form

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11. ANNEX 1

INSTRUCTOR GUIDE

ON THE TRAINING COURSE MANUAL

CO-MANAGEMENT TECHNIQUES OF MARINE FISHERIES RESOURCES IN THE MBRS REGION:

The co-management techniques in the MBRS region training course manual constitutes a series of thematic principles and mechanisms for their implementation in an educational process for a working adult population. It constitutes the guide of execution of activities presented in the Course Manual. This is a sort of curricular guide enlarged by the proposal of some support tools for the work in groups.

Being a pedagogic type activity, it is fundamental that the person that implements the course has verbal and symbolic communication abilities. Many people can have excellent academic and scholarly preparation, but lack pedagogic abilities. Since this is an activity with pedagogic ends, the didactic material is of great value for the effectiveness of learning process.

All those that participate in the course must follow the rules: Equal treatment (there are no preferences), to each according to their capacity, to each according to their necessity. All dynamics, sentence or metaphoric allegory will not be enlarged if it is not accompanied by a comment. (i.e. *once there was a monkey...*)

ABOUT THE COURSE

The course work sessions seek to demonstrate thematic units. They are worked into the daily dynamic with its natural division of morning and afternoon and the coffee breaks. But the facilitator should look to achieve units of knowledge before entering into recesses. The information consigned by the participants is hoped to be register progressively in maps and matrices (to work in the paper sheets) which will allow, through its reading for a constant recapitulation of the discharge information, and provide a connection to a new thematic area. Contrary to other workshops or events here the chronogram is a complex division of activities, the thematic areas provide some freedom and they also force you to be more creative.

ABOUT THE REQUIRED TEACHING MATERIAL

Big sheets of paper (bigger than the Bristol board or those used in a Rota folio) are needed. It is suggested that rolls of Kraft paper, which allow you to work in the matrix, be used, and that they remain in display as a working tool throughout the workshop (it is also a taking note form for the instructor that helps in the process of memoir and results elaboration, but its use is mainly didactic). A wide variety of self adhesive paper cards of diverse colors and sizes, thick and thin markers and tape are also required. Maps of the interest area are needed to work on. It is important to make sure that there is enough paper, clips, folders, pencils, pens, staples and stapler, etc. available at all times.

Work portfolios should be given to the participants at the beginning of the training course. They should include paper, pencil, pen, programs of activities, and photocopies of all reading material. It will be nice to identify the portfolios with the particular event. The portfolios fill a space in the house as educational material which is limited in the rural houses (all this depends on the magnitude of the event and the budgetary roof). It is advisable to distribute diplomas or certificates of participation. Since programs such as MBRS allows a formative processes to the beneficiary population, a diploma or certificates can help with future qualifications.

FUNDAMENTAL ASPECTS

How to involve the fishermen in the co-management? How would the fishermen benefit involving with co-management and conservation of the fishing resources? And what type of incentives will co-management have? How convincing will they be for the fishermen to change their attitude and to be devoted to protect the resource on which they depend on to live?

WORK DYNAMICS

They are many forms and proposals that social work has provided for working in groups. This has been a concern that is accentuated when working with rural communities such as with fishermen. The social sciences have developed a field methodology called "participative observation," that has lead towards "participative investigation". In such a way, this will be the line that models the dynamic of this workshop; the "participative investigation" as a first approach to the reality, like a systematic form of learning, and as an answer of action, intervention and modification on the object of study, in this case, the marine resources.

The knowledge of the sustaining reality, and even when its scenario is very pessimistic, is a sure road that allows for the realization of a medium and long term vision. It is necessary that the participants know the diverse participation degrees and the benefits of participation from the beginning of the training or they would not be able to take solid steps leading into a new administration type or co-administration.

When a pedagogic activity involves more than 18 people and you participate full time, it is recommended that a team of two to three people conduct the educational experience.

GROUP FORMATION

The instructor will always stay attentive to the compatibility and balance in the formation of the groups. This is a component that should not get out of hand. As a learning process, and even in other spheres of daily life, the compatibility, the balance and complement of the work groups are fundamental for success. In that sense you can opt to break representation units (country, groups, ethnic groups) and promote the exchange, disarticulate the units mobilizing one or part of its components or allowing the association for likeness among other variants. An appropriate number for formation of participants for groups is six (6). Let us examine some options for dynamic participation.

PARTICIPATION DYNAMICS

We will present some participation dynamics. These are exercises that allow the instructor to stimulate the participation of the course attendants. There are several options and the participants may know others through the participation in other courses. It is important to remember not to always use all with the same groups.

PRESENTATION BY INTERVIEW

In this technique each of the participants meet, and through an interview, learn about other participants' personal life or community work.

DYNAMIC IN CIRCLES

The work in circles allows a bigger identification among the participants to the event, and helps eliminate differences and assures with more precision the educational process.

THE NET

Beginning with the circle participation, someone transfers a ball of wool but holds one end. The one that receives the wool yarn turns it to another member of the circle, and so forth, always taking care of keeping a hold of the wool. This way it a complex net or spider web is formed.

THE BALL

With the participants circle too, someone throws a ball to another person in the group. The use of examples of common phrases used in Central America such as "pass the ball" is encouraged.

OTHER DYNAMICS

BLINDFOLD AND PILLOWS

It starts with two volunteers. The rest should remain surrounding them in a circle. The rules of the game are that both volunteers blindfolded, and following the indications of the rest of the participants, try to hit each other with a pillow. Until now everything corresponds to a well known game. However, here lies the success of this dynamic. At one point, one of the participants remains with no blindfold and consequently has a clear advantage. This situation will be clear to the rest of participants who will be asked no to tell this situation to the blindfolded one. After some time of search, the game is interrupted and the instructor should put a lot of attention to the reactions and words that the deceived participant makes. It is important that starting from here a motivation to a dialogue and analysis of their vision of what happened and their application to real life is conducted.

GIFT EXCHANGE

The event coordinators suggest that all participants (by group, country, persons, etc.) bring a gift that will be exchanged at a cultural night. This will be organized and the participants will be asked to prepare an act such as a joke, dance, poem, song, etc. to perform. It is a difficult activity and those who participate should not be discouraged. This dynamic encourages co-fraternization and points to an effort among others to co-fraternize and can help to exemplify our study case: co-management.

TRAINING PROGRAM MANAGEMENT

DAY ONE

Morning:

PRESENTATION OF THE COURSE

When initiating the course as well as when concluding it, or when making operative or logistical announcements, it is advisable to designate another person as responsible and not the instructor. This person should help make clear that the instructor is a facilitator and that the work should be carried out by the group and for this they are expected to know and learn about participative research.

THEMATIC UNIT 1

WHO WE ARE: THE PARTICIPANTS IDENTIFICATION

Identity is a dialogical referent that is constructed in relation with others. It is important because it refers to an individual and his/her differences and similitude to others. This is the universe we want to explore.

This activity can be carried out within a particular dynamic. For example, people in a circle can go around giving the word to the different participants. Sometimes they can be asked to write each other's name on an identification card as an aid in getting to know each other.

It will take the whole morning for this activity and it can be divided in two parts with a coffee break. It can be made in two parts, first self identification and second, people characterization (First Matrix).

RECAPITULATION

Recapitulation must take place to guarantee that the information processed is complete and understood by everyone.

FIRST DAY

Afternoon:

THEMATIC UNIT 2**CASE STUDY PRESENTATION: A LESSON LEARNED, SAN SALVADOR, PHILIPPINES**

Presentation of a successful case, with a focus on a learned lesson and to contrast with future possibilities and opportunities for the communities in MBRS region. This is a conference type activity that can be developed with the use of maps, transparencies, etc. The analytic presentation of this study case should provide a framework for the homework activity of the first day.

HOMEWORK OF THE DAY

Reading by each national team or by working groups (according to the instructor's evaluation) of the reports "The voice of the fishermen" for fisherman of the different countries and of "Two to Tango" for government officials and NGO's technicians.

SECOND DAY

Morning:

THE QUESTION OF THE DAY: CO-MANAGEMENT

This question should be answered by itself during the session. It can be written in some part of the board as a question to be answered.

THEMATIC UNIT 3**CO-MANAGEMENT CONCEPTS AND DEFINITIONS**

Presentation of a study case. Definition of the diverse categories considered in co-management.

STUDY CASE

Constitutes the presentation of a successful experience, and allows for an analytical process and reflection for the people involved in this activity. It could be an international, regional, national, or local experience, but it is important to remember that many times the replication of these experiences in different situations can lead to failure. The presentation of the case studies can and should allow for a methodological tool facing other real or hypothetical studies.

THEMATIC UNIT 4

THE FISHING ACTIVITY: HOW THE DIFFERENT COUNTRY CASES WORK

Presentation of the fishing activity dynamics for the different countries and the elaboration of the second matrix.

OUTDOOR ACTIVITY:

Visit to a fishing center (market, cooperative, fishing community, etc.). This activity is meant for participants to analyze *in situ* the dynamics of the fishing activity. Also, it allows for an informal exchange among participants.

SECOND DAY

Afternoon:

THEMATIC UNIT 5

TOWARD THE FORMULATION AND ANALYSIS OF HYPOTHETICAL CASE

HYPOTHETICAL CASE STUDIES

Working with models or hypothetical cases present the possibility of exposing extreme situations that force you to larger and more ingenious reflections and innovations, and to search for new answers to a specific problem. Similarly as with case studies, it is important to notice that these typologies can not be extrapolated as they do not conform to real problems.

Organize four groups and work on the same hypothetic case with four variables.

SECOND DAY

Night:

Cultural event with exchange of presents (See group dynamics)

THIRD DAY

Morning:

THEMATIC UNIT 6

PRESENTATION STUDY CASE: CO-MANAGEMENT OF FISHERIES IN GAMBIA

ANOTHER EXAMPLE OF CO-MANAGEMENT?

Conference type activity to present a case study outside of the region that shows the diverse mechanisms from the government perspective. An analysis of a case on which a tense situation between artisanal and industrial fishermen develops.

Presentation of the readings assigned on the first day. “The voice of fisherman” and “Two to Tango”

Explore the following perspective: How can the participants apply the teachings from these reading to the conditions in their own country?

Evaluation of the training: application of the previously elaborated form. It is important to make emphasis on the section for comments. This will constitute a starting point for future courses.

CLOSURE OF ACTIVITIES AND PRESENTATION OF DIPLOMAS AND CERTIFICATES

12. ANNEX 2

COURSE PARTICIPANTS

Jaime Villanueva Has been working for the Belize Fisheries Department for 20 years. Interested on how a local fishermen can manage resources. Hobbies: diving and dominoes.

Mario Gonzales Chief, Aquaculture Department, Fisheries Secretary, Chetumal, Mexico. Interested in learning techniques of fisheries management. Hobby: reading.

Ramón Cárcamo Works on fishery resources at the Belize Fisheries Department. Interested on monitoring and statistics, and on learning new techniques. Hobby: Chatting, seafood.

Roberto Herrera Researcher on sea turtles, fish and manatee at Colegio Ecosur, Mexico. Interested in learning techniques for co-management in different countries. Hobbies: fishing and sightseeing.

Sergio Guzman Works for UNIPESCA, Guatemala. Interested in learning to communicate with fishermen. Hobby: Tae Kwon Do.

Karla Bu Zapata Researcher at Fisheries Direction in Honduras. Interested in co-management techniques and tools. Hobby: basketball.

Ernesto Roca Fisherman from Livingston, Guatemala. Four years fishing, also works for FUNDAECO. Hobbies: music and football.

Arnold Flores Fisherman at Cayos Cochinos, Honduras. Is 27 years old. Tends to traps. Wants to be listened to. Hobby: football.

Ernesto Pineda Fisherman from Manabique, Guatemala. Fishes with gill net. Interested in sea turtle protection, when they get caught in nets. Hobby: football.

Victor Cordoba Presides over Fishermen Association, Cayos Cochinos, Honduras. Interested in learning so he can pass the information on. Hobbies: beer and punta dancing.

Roberto Pot Biologist, Friends of Nature, at Gladden Spit and Laughing bird Protected Areas, Belize. Interested in biological monitoring and in searching for mechanisms and alternatives for the benefit of the fishermen. Hobbies: sailing and football.

Adoni Cubas Coordinates community participation at Cayos Cochinos Foundation, Honduras. Interested in searching for alternatives for fishermen's economic welfare. Hobbies: movies and swimming in the ocean.

Jorge de Leon Presides over Fishermen Committee at Livingston, Guatemala. Interested in learning about co-management and raising awareness and support from the government. Hobbies: football and track and field.

Jaime Medina Presides over Langosteros del Caribe Cooperative, Mexico. Interested in fostering interchange among fishermen and awareness on resource management. Hobbies: reading and beer drinking.

13. ANNEX 3

MATRIX 1 - WHO ARE WE?

MEXICO

GEOGRAPHIC LOCATION	ETHNIC / CULTURAL GROUPS	ECONOMIC ACTIVITIES	INSTITUTIONS	ENVIRONMENT	PROBLEMS IN RESOURCE MANAGEMENT
-Banco Chinchorro	-Mayas (Tulum)	-Tourism	-SAGARPA	- Mangrove forests	-Illegal fishing
-Punta Allen	-Mestizos	-Construction	-SEMARNAT	-Coral Reefs	-Pollution
-Bahía de Chetumal		-Handcrafts	-UNAM	-Beaches	-Coastal Development
-Isla Mujeres		-Commerce (Fayuca)	-CINVESTAV	-Sea grasses	-Lack of enforcement
-Isla Holbox		-Industry	-SEMAR	-Algae	-Overlooked regulations
-Laguna Yalahau		-Cattle farming	-CAPA	-Islands	-Lack of Coordination
		-Agriculture	-U QROO	- Marshes	-Reduced information
		-Drug traffic	-CONANP	-Mountains	
		-Prostitution	-SEDUMA	-Bays	
		-Ship yards	-CETMAR	-Swamp forests	
		-Merchant ships	-ECOSUR	-Dunes	
		-Maritime transport (sea and land)	-CRIP		
			-SEDE		
			-GEHMANCOR		
			-Inst. Tec. Chetumal (ITCH)		
			-Amigos Siankan		

BELIZE

GEOGRAPHIC LOCATION	ETHNIC / CULTURAL GROUPS	ECONOMIC ACTIVITIES	INSTITUTIONS	ENVIRONMENT	PROBLEMS IN RESOURCE MANAGEMENT
-Gladden Spit	Ladinos (South)	-Tourism	-Belize Tourism Board	-Mangrove trees	-Obsolete Laws
-Belize City	Mestizo (North)	-Casinos	-Belize Fishermen Cooperative Association	-Reefs	-Declaration of protected areas and management plans
-Bacalar Chico	Garifuna	-Natural Pharmaceutical Products	-National Cooperative Placentia	-Coasts	-Marine fields
-South Water Cay	Creole	-Mining	-Coastal Management Institute	-Sea weed	-Illegal fishing methods
-Glovers		-Agriculture	-Fisheries Department	-Islands	-Financial limitation in the fishing department
-Sarstoon Temash		-Shrimp	-Ministry of Nat. Res.	-Marshes	-No information on biological systems
		-Construction Business	-Marine Defense	-Basins	-Economical value of fish.
		-Dockyards	-Friends of Nature	-Bays	-No political support
		-Coastal development	-Belize Audubon Society	-Atolls	-No economical or legislative support
		-Drug-traffic	-University of Belize	-Swamp forests	-National and international illegal fishing.
		-Prostitution	-TRIGOH	-Coastal Lagoons	-Overview of fisheries regulations.
		-Money Transfer			
		-Maritime transport			

HONDURAS

GEOGRAPHIC LOCATION	ETHNIC / CULTURAL GROUPS	ECONOMIC ACTIVITIES	INSTITUTIONS	ENVIRONMENT	PROBLEMS IN RESOURCE MANAGEMENT
- Utila	-Garifuna	-Tourism	-DIGEPES CA-SAG	-Mangrove trees	-Illegal fishing
- Laguna Caratasca	-Payas	-Agriculture	-AVINA Group	-Reefs	-Lack of human and financial resources
-Bruce Laguna	-Ladino	-Cattle farming	-Prolansate	-Beaches	-Disobedience of laws and regulations
- Cayo Cochinos	-Mestizo	-Drug traffic	-SERNA	-Sea grass	-Swamp forests
- Punta Sal	-Misquitos	-Craft industry	-Tourism Office	-Sandbanks	-Pollution
- Armenia	-Caracoles (whites)	-Money transfers	-INT	-Estuary	-Coastal development
- Paralelo 15	-Creoles (blacks)	-Dockyards	-Focagua	-River	-Conflict between industrial and artisanal fishermen
- Vivorillos		- Art of fishing	-Cayos Cochinos Foundation	-Mountain	
- Laguna Waymoreto		-Trade	-IAF		
- Laguna Mico Quemado			-MOPAWI		-Lack of information, knowledge and research
- Rio Motagua			-Protected areas department		
- Cuero y Salado			-COHDEFOR		-Modernize laws
- Laguna de Cacao			-BICA		
			-WWF		
			-CESCO		
			-PNUD		
			-UNAH		
			-Merchant Marine		
			-Navy		
			-PMAIB		

GUATEMALA

GEOGRAPHIC LOCATION	ETHNIC / CULTURAL GROUPS	ECONOMIC ACTIVITIES	INSTITUTIONS	ENVIRONMENT	PROBLEMS IN RESOURCE MANAGEMENT
-Punta Gorda	-Ladinos	-Agriculture	-Banatlan	-Mangrove Trees	-Obsolete laws
-Sarstun	-Culies	-Construction business	-Unipesca	-Beaches	-No fishing order
-Livingston	-Kekchi	-Dockyards	-Fundary	-Sea grass	-Bad fisheries resource management
-Puerto Barrios	-Garifuna	-Crafts	-Capitania Puerto	-Sea weed	
-Rio Dulce (four areas)		-Tourism	-Fundaeco	-Mountains	-Conflict between local fishermen for areas
		-Fishing arts	-CONAP	-Bays	
		-Commerce	-Artisanal Fishing Committee	-Wetland forest	-Contamination because of fertilizers and water products
		-Cattle farming	-Shrimp Cooperative	-Estuary	
		-Merchant ships	-UPEDA	-Reefs	-Conflict between NGO's and fishermen
			-Sarstun Fishing Committee	-Rivers	
			-Manabique Municipality		
			-Garifuna Fishermen Committee		
			-CEMA		
			-USAC		
			-Proarca		

14. ANNEX 4

MATRIX 2 - FISHING ACTIVITY

COUNTRY	SPECIES	FISHING GEAR	PROCESSING	MARKETING
MEXICO	Shrimp Octopus Lobster Mackerel Shark Conch Grouper Snook Snapper Clams	Free diving Compressor Traps Artificial Refuges Trawl net Hook and line Long line Beach seine Harpoons Jimba Hook, Cast net Traps and tackle	Iced Salt dried Frozen Alive Fillet Fresh	Beach Hotels and Restaurants Markets Intermediaries
BELIZE	Shrimp Lobster Conch Snapper Grouper Crab Shark Ronco Negro Cabrilla Kingfish Mackerel Tuna	Free diving Traps Hook and line Harpoons Artificial Refuge Trawl net Cast net Gill net Traps tackle Long line Hook	Iced Salt dried Frozen Alive Fillet Fresh	Beach Cooperative Hotels and Restaurants Market
HONDURAS	Blue Crab Mackerel Shrimp Shark Lobster Conch Clams Crab Grouper Snapper	Diving Hook Gasa Trawl net Harpoon Traps Cast net Gill net Beach seine Hook and line Long line	Iced Salt dried Frozen Alive Fillet Fresh	Beach Hotels and Restaurants Market Export Intermediaries
GUATEMALA	Shrimp Sardine Snook Mackerel Jack Catfish Shark Lobster Tarpon Blue Crab Ray Snapper	Beach seine trawling Gill net Hook and line Harpoon Trawl net traps Long line	Iced Salt dried Frozen Alive Fillet Fresh	Beach Hotels and Restaurants Markets Intermediaries

15. ANNEX 5**TRAINING IN TECHNIQUES OF CO-MANAGEMENT OF FISHERIES RESOURCES****EVALUATION FORM****Course Content**

- A. The planned objectives were reached:
 1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
- B. The program objectives were adequate:
 1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
- C. I had great expectations for this course:
 1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
- D. I am satisfied with this course, considering my initial expectations:
 1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
- E. The course was well organized:
 1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

Some of the following questions are classified on a scale. Please show your choice by circling the adequate number: 1=Very bad (or very little) to 5=very good (or very much)

General Overview

- A. How much value did the course represent to you?
 1 2 3 4 5
- B. The course's format was:
 1 2 3 4 5
- C. The presentations were:
 1 2 3 4 5
- D. The interaction with the trainer was:
 1 2 3 4 5
- E. The interaction with other participants was:
 1 2 3 4 5
- F. How adequate was the course material to you?
 1 2 3 4 5
- G. Was the programming of activities clear?
 1 2 3 4 5

Results

A. Will the material learned help in your work?

1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

B. Were you able to identify solutions to existing problems?

1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

C. Contacts with new colleagues were established:

1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

D. More collaboration among colleagues will be possible in the future:

1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

E. New ways to do things were learned in the course:

1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

F. You will bring improvements upon return to your country:

1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

Program facilities

A. Daily planning was:

1 2 3 4 5

B. Lodging was:

1 2 3 4 5

C. Coffee breaks were:

1 2 3 4 5

D. Visual aids were adequate:

1 2 3 4 5

E. Course instructor quality was:

1 2 3 4 5

F. Course duration was adequate:

1 2 3 4 5

G. It was worth taking time off work to attend to the course:

1 2 3 4 5

Participant Observations

Please, make comments that could improve future courses.

What were the course strong points?

Any course weak points and how would you change them?

4. Please add any other comment that you would like MBRS to consider:

16. ANNEX 6

PARTICIPANTS OBSERVATIONS

1. Which where the course's strong points?

- All points were fundamental.
- Clarifying what is co-management and the different countries fishing forms, were a strong point because they have to be learned so that we can bring back them to our partners back home.
- Identifying the fishing problems for each country with the participation of the sectors related to co-management (government – NGOs – fishermen).
- Cases in which fishermen work with government agencies to change inadequate legislation and manage resources.
- The course's strongest point was the discussion among participants from other countries.
- One of the strong points was the search for a better organization on the coastal area and the fishermen. The clarification of what is co-management.
- The presentation of case studies and the simple presentation for the participant's comprehension.
- The need for co-managing our self and marine resources.
- The participation of the people in surveillance activities.
- The course was very dynamic. I think the strong point was the interaction between the countries and the exercise of the hypothetic case in which we all participated.
- The course's strong point to me was the way co-management is thought of, because is the course's theme. Also the other participants commented about their communities.
- Presented ideas clearly and encouraged participation from participants.

2. Which were the course's weak points and how would you change them?

- In my opinion there were no weak points because all were strong points.
- Very little discussion of how fishermen in the 4 countries will need to work together in the new divisions of the national waters and manage common resources.
- The workshop required more time to study case studies.
- There were no weak points in my opinion as all treated aspects are of great importance for my country, and not only my country but all other countries.
- In relationship with the official sector, focus in a way that knowing the true direction of the opinions.
- All the topics discussed during the workshop were very important.
- I thing the course should last longer, at least one more day as later on we will enable people in our country and preparing an "instructor" in two and a half days in a new topic, is just not enough.
- There were no weak points, and even if there were any, they were still of use.
- Copies of materials, especially cases studies would have been good to read, before the course.

3. Please add any other comment you would like MBRS to take into consideration:

- There should be more exchange among fishermen
- There should be more exchange with fishermen of Cayos Cochinos and Gracias a Dios.
- In the case of Honduras, the system does not end in the west region of the Caribbean coast or in the Bay Islands. Central Region and east of the coast is an integral part of the MBRS. It should be included.

- The training was very good and the instructors were excellent because they know how to express themselves very well. MBRS is very good, and the training we received was also good, I am very happy.
- One serious problem of our region is the influence of international drug trafficking on the morality of fishermen. Not so much drug addiction but the participation of fishermen in the actual trafficking with the resulting disastrous economic and social problem for their communities and their resources.
- Well, adding and making my comments, this MBRS organization is well organized and the people in charge of this course are well specialized, their programming was excellent and the attention was more than good, it was excellent.
- A fishermen exchange should take place, particularly for areas where fishing is in decline and later on, bring fishermen from the visited area to a place where there is co-management.
- Promote workshops and seminars where experiences can be exchanged in regards to the constitution and laws active from each country.
- The accords taken in the different countries by the fishermen to protect their resources should be policies MBRS brings to the governments of the participant countries and in the research projects and surveillance fishermen participate in.
- We would like MBRS to act as a communication link between government and the fishing communities and that we may find good markets for our products and solicit to donors, loans or donations for the fishing communities.
- Well, it is important that social activities be organized by international visiting participants.