



MESOAMERICAN BARRIER REEF SYSTEMS PROJECT (MBRS)



TRAINING MANUAL ON BEST MANAGEMENT PRINCIPLES FOR MARINE PROTECTED AREAS

(Revised for Web Publishing)



April 2003



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

Belize – Guatemala – Honduras - Mexico



**A MANUAL BASED ON THE
TRAINING IN
THE BEST MANAGEMENT PRINCIPLES FOR
MARINE PROTECTED AREAS
COURSE**

**Conducted in Belize City, Belize
January 13 to 15, 2003**

**Mesoamerican Barrier Reef Systems Project
Project Coordinating Unit
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PROLOGUE

Marine Protected Areas (MPAs) are being used in efforts to protect and manage marine and coastal resources. MPAs have demonstrated their value in the protection and increase in biodiversity and, in this process, they have also generated economic benefits through tourism and improvement in improvement in fisheries.

The Mesoamerican Barrier Reef System region includes more than 60 officially declared MPAs. Nevertheless, in the analysis conducted during the project preparation, it was noted that many of these MPAs have little trained technical personnel, on site, with scientific and technical knowledge or the best management principles for MPAs.

The need for training mid-level personnel within the management agencies and collaborators of the MPAs, as para-biologists and para-taxonomists, has been identified as a key priority for the management of the MPAs and the efficient implementation of their respective management plans.

In response to that necessity, the MBRS Project organized and coordinated training in the best management principles for MPAs, to provide guidance in the implementation of the management plans of the 15 MPAs in the MBRS region.

The Natural Resource Management Specialist NRMS within the Project Coordinating Unit (PCU) defined the profile of the participants, ensuring the participation of key actors, such as field assistants, representatives of non-governmental organizations involved in the co-management of MPAs, administrators and management of the MPAs. They were asked to bring to the training examples of the situation in their countries, relating to this theme, in order to be able to present case studies.

Likewise, the NRMS of the PCU developed the Terms of Reference (ToR) that guaranteed the professional quality of the training facilitator, guided the execution of the tasks to be accomplished, as well as defined the structure and content of the course and the manual.

The process involved the participation of a facilitator, to prepare the initial 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 of the participants, and prepared the final version of the current manual, incorporating as well the comments of the NRMS of the PCU.

This manual on the Best Management Principles for MPAs is written for mid-level personnel in charge of implementing the management plans of the MPAs, employees of governmental and non-governmental agencies, para-taxonomists, para-biologists, involved in the management of MPAs, who can disseminate this material and the information from the training course to their own personnel and other colleagues.

The MBRS Project hopes that with the delivery of this tool, the process of disseminating knowledge will continue in order to help us better face with the daily challenges which we encounter, the management and conservation of the MPAs and with this to achieve sustainable development and balance within our marine and coastal systems.

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UNIT 1. INTRODUCTION

COURSE GOALS AND GENERAL OBJECTIVES

The Mesoamerican Reef Barrier System (MBRS), which extends from Isla Contoy on the north of the Yucatán Peninsula to the Bay islands of Honduras, is recognized, in the Western Hemisphere for its uniqueness due to its length, diversity of reef types and associated species. The MBRS is also an invaluable resource for its socioeconomic importance to the adjacent local communities. Within the MBRS, over 60 areas have been declared Marine Protected Areas (MPA) with different management regimes. It has been amply documented the effectiveness of well managed MPA in the protection of the ecosystems within their boundaries as well as their socio-economic value for the sustainable development of the human communities.

The need for the enhancement of the human capabilities for MPA management in the MBRS region is also well known. The successful implementation of Management Plans in the MPA rests on the continuous renewal of the management skills of their personnel through training. The present course is framed within the goal of the Mesoamerican Barrier Reef System Project of enhancing the protection of the unique and vulnerable marine ecosystems comprising the MBRS. The general objective is to increase local and national capacity for environmental management through education, information sharing and training.

THE SPECIFIC OBJECTIVES WILL BE THE FOLLOWING:

1. To outline, analyze, contrast and compare different management practices throughout the region in order to extract learning experiences for application and identify good practice.
2. To raise awareness among MPA and related personnel to the importance of training as part of the management of the MPA.
3. To familiarize MPA and related personnel to the importance of understanding different training methods to conduct training.
4. To encourage lifetime learning and skills upgrading among MPA personnel.
5. To facilitate the understanding by the participants of the process of communication and to develop the necessary skills for successful communication.

COURSE STRUCTURE, METHODS AND LANGUAGE

The course was delivered in a workshop format with interaction opportunities for the participants. Most of the information presented by the facilitator was enriched with the participant's experiences. Some of the exercises (See Appendix 1) required written documents that have been included in this Manual.

Since the course emphasized best management principles for MPAs and special attention was paid to the need of training methods for adult education and communication skills for MPA staff, the methods used demonstrated suggested strategies such as brainstorming, role playing, small group discussions and the participants were required to use them in their exercises. Over all the participants were exposed to: 1) slides presentation, 2) group discussions, 3) small group exercises, 4) lectures and 5) participant's presentations. After each methods participants were requested feedback on the adequacy of the strategy for training and whether they would use other methods.

Given the social nature of the MBRS region, the course was conducted in English and Spanish.

The participants brought their own particular expectations to the Course which were exposed in the presentation section. As organizers, we expected from them: 1) active participation in discussions, 2) to read assigned materials, 3) that they develop drafts documents to illustrate best management practices in their MPA and 4) design a suggested training session/program for their MPA.

The course evaluation was developed, as recommended in adult education through a consensus between the trainer and the trainees. The exercise consisted in asking the participants, after the discussion of the theoretical aspects of the evaluation as part of the training process, to provide five questions that they would include in an evaluation instrument for this course. The questions were examined by the trainer and with them the instrument was developed. See Appendix 3 for evaluation questionnaire and summary of results.

UNIT 2: MAIN SOURCES OF MANUAL MATERIAL

The guidelines for Best Management Practices in Marine Protected Areas contained in this Manual are the result, primarily, of the experiences brought to the Training session by the participants. This course was sponsored by the Mesoamerican Barrier Reef System MBRS Conducted in Belize City, Belize January 13 to 15. It is designed to be used with other publications and sources of information which cover relevant subjects in greater detail. In particular, users are encouraged to refer to the following:

1. Training of Trainers in Marine Protected Area Management: Training Manual, Module 1. United Nations Environmental Programme (UNEP), Caribbean Environment Programme (CEP) 1996.
2. Guideline for Marine Protected Areas: Edited and coordinated by Graeme Kelleher. IUCN –The World Conservation Union. Best Practice Protected Area Guidelines Series No. 3. 1999.
3. Training for the sustainable management of Marine Protected Areas: A teaching Manual for Training Managers. Francis J., R. Johnstone and T. van't Hof. 255 pp.
4. Commonwealth of Puerto Rico, Planning Board. Management Plan for the Jobos Bay National Estuarine Research Reserve (JOBANERR). 2000.
5. Evaluating Effectiveness: A Framework for Assessing the Management of Protected Areas. Marc Hockings (WCPA Management Effectiveness Task Force) with Sue Stolton and Nigel Dudley (WWF/IUCN Forest Innovations Project). IUCN- The World Conservation Union. 2000.
6. Sharing Innovative Experiences: Examples of Successful Initiatives in Small Island Developing States. Vol 2. The United Nations Development Programme.
7. How Tourism can help protect the environment: a Case Study of the Bonaire Marine Park. Kalli de Meyer. Tourism Focus, No. 9, United Nations Environment Programme Industry and Environment. 1997.
8. Conservation and Sustainable Livelihoods: Collaborative Management of the Mankote Mangrove, St. Lucia. CANARI 1998.
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12. How to Speak and Listen Effectively. Harvey A. Robbins. American Management Association 1992.

13. Project Management Step-by-Step. Larry Richman. American Management Association 2002.
14. Cómo Elaborar un Proyecto: Guía para diseñar proyectos sociales y culturales. (15.a edición, ampliada y revisada). Ezequiel Ander-Egg and María José Aguilar Idañez. Editorial LUMEN/HUMANITAS. 2000.
15. Funding Protected Areas in the Wider Caribbean: A Guide for Managers and Conservation Organizations. The United Nations Environment Programme/CEP, The Nature Conservancy. 2001.

More references may be found in the Bibliography section.

UNIT 3: MANAGEMENT PRINCIPLES FOR MARINE PROTECTED AREAS

The management strategies and practices selected for a particular type of MPA have to be closely related to the objectives that the MPA follows. Based on the management objectives and the criteria for protection and use, the World Conservation Union (IUCN) has proposed six categories of MPAs. Even though, some countries may apply a local category to their Protected Area, such as the denomination *Biotopo* used in Guatemala their management objectives and criteria for designation can be related to the following IUCN categories of protected areas.

I. STRICT NATURE RESERVE/WILDERNESS AREA:

Protection area managed mainly for science or wilderness protection.

A. STRICT NATURE RESERVE: Protected area managed mainly for science.

B. WILDERNESS AREA: Protected area managed mainly for wilderness protection.

II. NATIONAL PARK:

Protected area managed mainly for ecosystem protection and recreation.

III. NATIONAL MONUMENT:

Protected area managed mainly for conservation of specific natural features.

IV. HABITAT/SPECIES MANAGEMENT AREAS:

Protected mainly for conservation through management intervention.

V. PROTECTED LAND/SEA SCAPES:

Protected area managed mainly for landscape/seascape conservation and recreation.

VI. MANAGED RESOURCE PROTECTED AREA:

Protected area managed mainly for the sustainable use of the natural ecosystems.

Can you identify your MPA in any of these categories?

The IV World Congress on National Parks and Protected Areas, held in Venezuela in 1993 proposed the following objectives for MPAs.

- To protect and manage substantial examples of marine and estuarine systems to ensure their long-term viability and to maintain genetic diversity.
- To protect depleted, threatened, rare or endangered species and populations and, in particular to preserve habitats considered critical to the survival of such species.
- To protect and manage areas of significance to the life cycles of economically important species.
- To prevent outside activities from detrimentally affecting the marine protected area.
- To provide for the continued welfare of people affected by the creation of marine protected areas.

- To preserve, protect and manage historical and cultural sites and natural aesthetic values of marine and estuarine areas, for the present and future generations.
- To facilitate the interpretation of marine and estuarine systems for the purpose of conservation, education and tourism.
- To accommodate within appropriate management regimes a broad spectrum of human activities compatible with the primary goal in marine and estuarine settings.
- To provide for research and training, and for monitoring the environmental effects of human activities, including the direct and indirect effects of development and adjacent land-use practices.

Do you have clear objectives for your MPA?

Are the objectives of your MPA in agreement with those mentioned above?

In many instances when a management strategy is implemented and it seems to fail, the cause is the incompatibility between the nature of the MPA and the management objectives. In a 1A MPA category, a management strategy for the sustainable use of the resources by tourists will fail, regardless of its good intentions, because by its classification or definition that MPA should be dedicated exclusively to science.

The following table presents the correlation between management objectives and each MPA category.

TABLE 1:
 MATRIX OF MANAGEMENT OBJECTIVE
 AND PROTECTED AREA MANAGEMENT CATEGORIES
 (After: Francis, J, R. Johnstone and T. van't Hof)

MANAGEMENT OBJECTIVE	MANAGEMENT CATEGORIES						
	IA	IB	II	III	IV	V	VI
Scientific research	1	3	2	2	2	2	3
Wilderness protection	2	1	2	3	3	-	2
Preservation of species and genetic diversity	1	2	1	1	1	2	1
Maintenance of environmental services	2	1	1	-	1	2	1
Protection of specific natural/cultural features	-	-	2	1	3	1	3
Tourism and recreation	-	2	1	1	3	1	3
Education	-	-	2	2	2	2	3
Sustainable use of resources from natural ecosystems	-	3	3	-	2	2	1
Maintenance of cultural/traditional attributes	-	-	-	-	-	1	2

Key:

- 1 Primary objective
- 2 Secondary objective
- 3 Potentially applicable objective
- 4 Not applicable

Are there any discrepancies between your MPA category and the objectives?

UNIT 4: HUMAN RESOURCE MANAGEMENT

“If successful management of protected areas is largely dependent on the skills of the people in charge of them, then training ought to be a priority”.

Gómez-Limón García, J. 2000.

As with any other enterprise, staff is vital for the successful management of MPAs. Kelleher, 1999 states:

The management of MPAs is becoming as sophisticated as that of many commercial organizations, requiring not only technical skills but also a high level of managerial and communication ability. Traditional training for protected area staff tended to focus on specialist areas, such as marine zoology, but this is no longer adequate: today’s MPAs need staff from a wide range of backgrounds with many different skills. In particular, communication skills are vital: protected area managers have to be able to “sell” the benefits of the MPA to the local community, visitors and other constituents. (Page 44)

Training and capacity building must be seen as part of the Management Plan, not as an occasional or sporadic activity. Since, the Management Plan, once approved by all the required organisms, will be the common guide for the activities in the MPA and should reflect the participation of all staff member in their efforts to reach the goals and objectives of the plan, they should all be involved in training, either as trainers or trainees. This is the main reason to include training as a most important aspect of best practices in MPA management. There are many instances in which the successful completion of the objectives included in the Management Plan will require some extent of staff training.

The following section constitutes the summary and highlights of a two-day Workshop session on Training and Communication Skills for MPA management which was delivered in Belize City to representatives of the Mesoamerican Barrier Reef System (MBRS). The objective of the Workshop was to provide managers with the adequate instructional tools to integrate this content in their management practices.

4.1 TRAINING AND COMMUNICATION SKILLS FOR MPA MANAGEMENT

Training refers to a planned effort by an organization to facilitate staff’s learning of job-related competencies. It is based on the premise that lifetime learning is vital to the effective practice of any occupation. Training is more than learning or developing skills: it is the creation of **intellectual capital**; it is the tool to understand and refine the relationship between an MPA and all the external factors that conforms management.

The training needed by MPA staff needs to be inter and cross disciplinary, from aspects of human behavior, beliefs and attitudes toward nature, to the use of cutting edge technology in the field. Regardless of your professional or experiential knowledge, there is no one person with all the knowledge and skills necessary for MPA management. Most of the people working in protected areas have been trained in natural sciences and/or resource management fields,

and commonly the university-level curricula and training courses leave gaps in the integration of theoretical and practical knowledge needed for managing protected areas.

There is ample expertise in the field of training. There are prestigious consultant firms that deal exclusively with training, and of course, as MPA managers you may have the resources to bring them into your region to conduct the training needed. However, as managers, you must also be knowledgeable of the theoretical and practical framework underlying their products. Basically, training should be designed based on problem solving, but this process must be constantly examined and refined as training progresses. This constitutes the **training cycle**. It consists of an assessment phase, design of intervention, implementation of intervention and the evaluation of outcomes.

Regardless of the training methods employed, the content and the substance of the training must grow out of the situations or problems that you have identified in your organization, the culture of the human resources, and the outcomes expected.

Identify performance areas or tasks in your MPA where staff needs training.

4.2 PRINCIPLES OF ADULT EDUCATION

Training for MPA staff relates to adult learning. The strategies and approaches to teaching and learning that we are most familiar with relate to children. These will not be efficient in the adult world.

There is a wealth of recent knowledge on the ways adult learn and it is important to be familiar with them before designing training activities. Educational research reveals that there are different learning styles: not everyone learns the same way and through the same experiences. The theory of Learning Styles (Kolb, 1984) is based on: how information is sensed or perceived, and how is the experience or the information processed. Some people learn through sensing/feeling and watching, others learn through watching and thinking through concepts, while others learn by thinking and doing and there are other people who learn by doing and sensing/feeling.

Even each one of us may learn in a different way with different experiences, but we may have a more dominant style that we prefer. All learning styles are valid and of equal capacity for learning. For the trainer or the teacher, as we all are, this means awareness to the presence of different learning styles in the group, and the need for presenting the materials with different emphasis and strategies.

Educational experts (Knowles, M., Thiagarajan, S., Gardner, H.) have identified some principles about adult as learners:

1. Adults must feel a need to learn. They learn best when they see a need to learn; they want to learn something from each session. The role of the trainer is to facilitate new experiences and opportunities for learning.
2. Adults learn best from active participation. The role of the trainer is to help participants organize themselves into learning activities.

3. Adults learn best by realistic problems related to their everyday/job experience. The trainer/facilitator must be aware that the goals of the learning experience are perceived by the trainers as theirs and make the experience relevant to their needs.
4. Adults learn best in an informal environment. The learning environment is marked by mutual trust, mutual helpfulness, freedom of expression, and acceptance of differences. Physical comfort is essential. Trainer/facilitator must encourage and provide for cooperative learning experiences, discourage harmful competition, avoid being judgmental and participate freely as co-learner.
5. Adults respond well to a variety of teaching methods. Trainer must display diverse teaching strategies to address different learning styles.

4.3 TRAINING METHODS/INSTRUCTIONAL DELIVERY TECHNIQUES

There is an immense diversity of training methods or instructional delivery techniques from which to select those that best match the training goals, the nature of the audience and the time frame for the sessions.

These vary from the traditional classroom style lecture to the more participative activities of discovery and experiential learning. Some training methods will be adequate for large groups while others are more effective when used in small groups. More recently, with the rapid development of the technology, distance learning has become a feasible training method to access distant groups and share experiences. However, each strategy will present advantages and disadvantages, depending on the capability of the trainer, the training environment and the group.

It is important to remember that no matter what strategy is used, the trainer must keep in mind the need to accommodate the different learning styles present in the group. Also, adult learners, we have discussed previously, learn best and prefer activities that provide them with opportunities to participate and experience their learning, rather than to be told what they are to learn. The most important thing is to select what will help the target population learn the most, the best and the easiest.

4.4 NEEDS ASSESSMENT

The training process is dynamic: the core is the organizational objectives. What needs to happen to achieve the goals and objectives of the MPA as stated in the Management Plan? Needs assessment is considered as the first component of the training process, thus effective needs assessment begins with the MPA objectives. Well designed, the needs assessment will expose needs in many areas: organizational structure, procedures, staff needs and competencies and tasks definition.

Some of the needs may be organizational, others training needs, or both. The training needs are those that can be solved through learning. It is essential to have a clear insight of the needs assessment before undertaking training design. If the needs assessment reveal that the gap between what is and what is desired cannot be met by changes in the organizational structure or redefinition of the task, then training may be needed. The following questions will further refine the needs assessment:

- Who needs to learn what?
- Why do they need to learn it?
- At what depths?
- What is the priority of the learning in question?
- What are the priorities in terms of the learners?
- What are the priorities in terms of topics?
- What are the priorities in terms of time/deadlines?

There are different strategies and tools to conduct the needs assessment. It is possible that the MPA has resources to bring in external consultants that will do the needs assessment and the training needed, however, the reality is that in most MPAs the manager or his/her staff has to do the assessment. Any combination of these will provide adequate data:

- Review of employees performance
- Comments from visitors
- Focus groups with stakeholders
- Focus groups with supervisors and managers
- Employee questionnaires
- Testing
- Interviewing

4.5 DESIGNING A TRAINING PROGRAMME FOR THE MPA

This phase of the training process will take the data gathered by the needs assessment and convert it into design requirements. In other words, the trainer/facilitator will translate training needs into goals and measurable objectives, select the basic content, and develop the training activities through which the participants will master the skills indicated in the objectives.

The outcomes of the training are expected to be measured in terms of cognitive and behavioral changes, thus the trainer must bear in mind that there is a distinction between what the participant must know (cognitive/ informational) and must be able to do (behavior/ operational) at the end of the training session. The trainer will also determine the appropriate delivery method, and develop the necessary materials to support and evaluate the participant's learning. In the local context of the MBRS, the MPAs in the design of the training programme one must consider the following:

- The audience: literacy level, ages, gender, occupation, social and economical aspects, cultural characteristics, languages, attitudes, beliefs, opinions, values.
- Sensitivity of the message: appropriate language and style
- Cultural aspects: myths and practices
- Channels to the audience: mass media, local leadership, traditional channels
- Local social structure and organizations
- The geographic location of the group, community or organization

4.6 TRAINING EVALUATION AND FOLLOW UP

As was said with training, evaluation is an essential aspect of the management process. In the adult education scenario, the participants will contribute to the design of the evaluation tool. The data obtained in the evaluation is important for decision making in the future, related to new needs or staff placement. The evaluation should include the following:

- Process evaluation: examines the procedures and tasks involved in the implementation of the programme.
- Impact evaluation: is more comprehensive and focuses on long range results.
- Outcome evaluation: is used to obtain descriptive data of a project and to document short term results.

There are many ways to do evaluation. It is important to gather quantitative as well as qualitative data, to include as many stakeholders as possible in the process and to give prompt feedback on the results of the evaluation.

For a training or capacity building session or project the evaluation instrument should include comments on the following aspects:

- Reaction: Was this session worth it?
- Learning: What did I learned?

- Job relation: How will I use this in my job?
- Organizational results: How does this impact the short or long term goals of the MPA?
- Training process: What happened during the session? Were the resources (human and pedagogical) adequate? Were the objectives met? Were my expectations satisfied?

In 1997, the International Centre for Living Aquatic Resources Management (ICLARM) convened in Manila, Philippines a group of experts and specialists from around the world to develop a Framework for Future Training in Marine and Coastal Protected Area Management. The recommendations from this Workshop were a series of recommendations which have been included in the MBRS session at Belize.

Emphasizing the importance of training at the MPA even further, Kelleher (1999) recommends that a training programme for an MPA should:

- Ensure that staff at every level (including volunteers) are well trained initially and that their skills are continually developed and updated;
- Include formal training in the work place, as well as through external courses;
- Extend to local people, such as fishers, tourism operators and scientists, who are involved in the MPA;
- Where possible, include staff exchanges.

See Appendix 1 for participants exercises suggested for the Workshop on Training and Communication Skills for MPA management.

4.7 COMMUNICATION SKILLS FOR MPA MANAGEMENT

Regardless of the position held in the MPA staff, all personnel, sooner or later, will be required to present or explain something about the MPA to a group. His or her ability to effectively communicate will often be determinant in the achievement of the MPA objectives. It is expected that personnel associated with the education or outreach component of the MPA, and the managers master the communication skills and they can always do the presentations. However, most of our MPAs are short of staff and anyone may be required to make the presentation. There is also communication skills needed for daily staff interaction which should be mastered by everyone. Training for the enhancement or development of communication skills in MPA staff should include the following aspects:

- Understanding the process of communication: the source, the message, the channel and the receiver;
- Guidelines for an effective group communication: what do you need to know in advance about the group;

- Guidelines for a successful presentation: what to use, what to avoid and how to conduct yourself in the presentation.

The development of communication skills depend mostly on practice and constant self evaluation of the presenter. Appendix 1 includes details of the participant's exercises in this section of the MBRS Workshop and the Guidelines for successful presentations.

UNIT 5. BEST PRACTICES IN MPA MANAGEMENT

Learning from the experiences –good or bad- of other MPAs is one of the objectives of this course. A critical examination of the steps followed by the actors in each of the case studies selected will help us understand the rationale and the decision making process. The exercise may save a lot of time and will contribute to the enhancement of the human resources capability in the region. Looking at other's experience, will hopefully stimulate, each manager to be more aware of their own achievements or failures in the implementation of some management strategies. Sharing the experience will all the peers in the region is the goal of this session.

MPA management in different geographical locations throughout the world may face similar challenges. Depending on cultural aspects, management strategies may be successful or failures. However, the more familiar, the MPA manager becomes with the ways that other peers solve their problems the more capable she or he will be to manage its area.

5.1 HUMAN RESOURCE MANAGEMENT

Managing an MPA must be one of the most dynamic activities in the field of natural resource management. On one hand, the environment is constantly changing, either by natural or anthropogenic causes. In the other hand the MPA staff must be prepared to respond promptly to these changes in the way of management strategies. For these reasons the staff must be kept up to date in knowledge and skills to perform in the most effective way.

A common issue among MPA managers in the MBRS region is the lack of staff and financial resources to meet management needs. A well thought training programme in different aspects of MPA management will be an effective tool for efficient use of the staff and available funds.

i. Hol Chan Marine Reserve: Presented by Heider Pérez, MPA Manager

Management Objective(s): Human resource management. To create a team of biologists and other qualified interested parties to secure the livelihood of our marine parks through education and enforcement

Management Strategy (ies): Use staff's human resources to train each other in the different tasks required in the Reserve.

Results:

Daily running of the Marine Park shows the need for more human resources. There are not enough qualified staff members to carry on the expected tasks. It was decided that the qualified staff: biologists, dive instructor, and qualified fish and coral specialists should train each other in their respective specialize knowledge. The strategy used is the mentoring: a non biologist staff will learn from the biologist basic principles of reef ecology, fish and coral identification, while the dive instructor will train another staff member in diving skills

This approach provides an insight of the importance of maintaining, conserving and protecting the reef and its environment, also provides trainees the opportunity to assist others at any given point. They can also assist in the monitoring programme.

With this “in house ”training programme the Hol Chan Marine Reserve ensures the maximum performance of its entire staff in the different tasks needed.

5.2 ENVIRONMENTAL EDUCATION AND INTERPRETATION

Most of the MPAs in the MBRS include education and interpretation in their management objectives. There is a great diversity of strategies to deliver education to the surrounding community through school programs, non formal programs and visitors to the MPA. The goal of this management practice is to enhance knowledge and appreciation of the natural resources of the MPA and traduce this knowledge to active protection and wise use.

i. **Parque Nacional “Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc”.**
Presented by: Adriana Amador González, Head Environmental Education and Communication Department

Management objective: To reduce the negative impact to the ref. from ill conducted recreational water activities.

Management strategy: Training of recreational activities guides

Results:

One of the principal problems faced by a coral reef system is the constant degradation resulting from poorly conducted recreational practices (snorkeling and diving).

Most of these “poorly conducted” activities are closely related to the interaction between the guide and the visitor (tourist). The visitor does not receive from the guide or from any other source adequate information as to the behavior or code of conduct that must be followed during his/her visit to the MPA. Most likely the reef will receive some impact from this visit. Through an extensive needs assessment conducted by staff from the Environmental Education and Inspection/Surveillance Departments training needs were identified as well as a possible group of 1,000 guides in need of training.

Since the MPA does not have the staff to deliver the training, through a Call for Proposals external providers were identified and selected. A course “Guide and Environment: Life Binomium in the Parque Nacional Costa Occidental de Isla Mujeres Punta Cancún y Punta Nizuc”, was designed. The course is delivered by the external resource under contract and the MPA conducts the evaluation and certifies the participants as “recreational water activities guides for the MPA”. At present close to 1,000 guides have taken the course and 90% have been certified.

ii. **The Jobos Bay National Estuarine Research Reserve (JBNERR), Aguirre, Puerto Rico. Presented by Alida Ortiz Sotomayor**

Management objective: To link research results and coastal management to educate JBNEER users.

Management strategy: Define educational policy; train educators on estuarine issues and provide on-site facilities for teaching.

Results:

The Jobos Bay National Estuarine research reserve was established in 1981 as one of the 22 Estuarine Reserves of the United States System. These reserves were designated with the purpose of protecting the estuarine resources and at the same time promote research and public education about the natural resources of the estuaries.

The Education Coordinator has established collaborative projects with the local schools and universities to use the Reserve's facilities as laboratories for school projects and for field trips guided by Reserve's staff. A Teaching Resource Book was produced to serve as a guide for presenting estuarine and coastal management concepts to different groups. Materials may be used for formal curricular materials and for informal sessions with decision makers and stakeholders.

One of the most important aspects of this education strategy is the participation of the scientific staff. The water quality results collected from the monitoring activities and the research conducted in the Reserve is presented to the teachers in Workshops as data for teaching estuarine concepts.

The Reserve has classroom and lodging facilities that teachers may use for longer courses. The successful aspect of this management practice lies on its close interaction with teachers and curricular needs.

5.3 COMMUNITY INTEGRATION

Throughout the world, there is a clear recognition of the need to develop effective partnerships for MPA management, especially so through community participation at all levels of the process and very early on. (Kelleher, 1999).

Special benefits for the MPA and for the community are as follows:

- Management is more effective bringing together the knowledge, skills and know how of the local community;
- Voluntary compliance reduces costs of enforcement;
- Management responsibilities are shared.
- Alliances with local stakeholders can protect resource exploitation from external interests.

- Increases trust between MPA and stakeholders.
- Facilitates long term planning and sustainability.
- Reduces conflicts and disputes among users.
- Increases public awareness and support.
- Integration of social, cultural and economical issues of the community are integrated in the conservation strategies.
- Contributes to a more democratic and participatory society.

i. **Special protected area of Punta Manabique, Guatemala. Presented by Estuardo Herrera, MPA Manager**

Management objective: Provide community participation in the formulation of the MPA Master Plan at the beginning of the process.

Management strategy: Constitute a Consulting Group.

Results:

Five workshops were conducted with different sectors of the community to address the following issues:

1. Presentation of the Plan and formation of the Consulting Group.
2. Diagnostic phase to identify Punta Manabique's resources.
3. Management issues.
4. Final zoning and operational aspects.
5. Presentation of the final Plan to the Consulting Group and Validation.

Each workshop lasted around 5 hours. There was special care in giving constant feedback to the community on the issues presented in the sessions.

Benefits from the strategy:

1. Community participation: all sectors (ranchers, fishers, NGOs, charcoal producers) participated; a Bulletin to inform the community was produced.
2. Establishment of the Consulting Group to collaborate in the management of the MPA.

3. Create a real space for dialogue and negotiation between the MPA and the community.

ii. **Reserva de Usos Múltiples Río Sarstún, Guatemala: Presented by Freddy R. Aquilar González, MPA Coordinator**

Management objective: To register the property of Cerro Sarstún as a core zone within the protected area.

Management strategy (ies): Area has to be measured, negotiate with neighbors and property owners and register the core area within the Reserve.

Results:

One of the difficulties faced in the management of the Reserva de Usos Múltiples Río Sarstún is the lack of official property of the nuclear area within the protected area. It is necessary to measure the area, delimit and draw the adjacent properties and register the property within the government official agencies as public land to be managed under the Reserve's regime. The absence of this process is a limitation to the well management of an area with high natural values within the MPA.

In addition to the technical procedures involved in land appraisal, which involved examination of historical documents of land tenure in the region, new field measurements, use of aerial photographs and satellite imagery, several meetings with the community and other land owners had to be conducted. This process was conducted in all its details by the Non governmental Organization FUNDAECO, which acts as manager of the Reserve.

To integrate the community in the process, and at the same time promote understanding of the reasons behind the management strategy different activities within the Reserve were conducted with community participation. A forestry inventory, bird banding, research on bats population dynamics and behavior, water quality studies and evaluation of the biological diversity in the area. These activities allowed the MPA staff to demonstrate the resource richness of the Cerro Sarstún and the great importance of having it included in the management plans of the Reserve. The interaction through these activities also facilitated a better comprehension of the community's needs and how they could be included in the Reserve's plans.

Subsequent actions will include the training of local tourism guides; promotional activities directed to attract tourism, construction of the visitor center and interpretive trail and construction of bird observation towers.

5.4 RESEARCH APPLICATION TO MANAGEMENT:

Whether the management practice is directed to the humans in the MPA or to the protection of the natural resources, they both need a solid scientific basis for action. The science in the context of the MPA has to be driven by management needs. The goal of the research and monitoring is to enable management to meet the objectives set for the MPA.

Continuous evaluation of the environment in the MPA and periodical needs assessments will give management a clear picture of the research and monitoring activities needed in the MPA.

One of the most sensitive areas in research and monitoring is the relationship between scientists and managers. Even though, they maybe both looking at the same problem, their language, their approach and most important their time frame for an expected result are very different from one to the other. There is a minimum of consensus between scientist and managers that have to be agreed upon. They should try to achieve:

- Common support of the MPA goals and objectives in research and monitoring;
- Mutual understanding of their respective pressures, time frames and reward systems;
- Long term commitment to progress of the MPA, and
- Continuous an open output of information and progress reports on research results and accomplishments.

6. The Jobos Bay National Estuarine Research Reserve, Aguirre, Puerto Rico: Presented by Alida Ortiz Sotomayor

Management objective: To promote research activities which results may be used for management.

Management strategy: Identify areas where research is needed to implement a management; invite researchers to the Reserve and help locate funding sources for research.

Results:

The Jobos Bay National Estuarine Research Reserve was established in 1981 as one of the 22 Estuarine Reserves of the United States System. These reserves were designated with the purpose of protecting the estuarine resources and at the same time promote research and public education about the natural resources of the estuaries.

Each year the Reserve Manager identifies within the scope of the management plan the issues that need research data to solve a problem. The Reserve is surrounded by different industrial activities which generate a diversity of impacts on its estuarine ecosystem: agricultural lands with heavy use of chemicals, petrochemical industries, energy generators with hot water effluents into the bay; sewage runoff from lack of treatment plants, etc.

Scientists from local universities are invited to a one day seminar at the Reserve, where the different research needs are presented by the Manager and the Reserve's scientist. They can also see the monitoring equipment available and the facilities of the research laboratory. Later on there will be a Call for Proposals where the conditions are explained and the available funds are known. All projects require matching funds from the scientist's institution on a one to one rate. All equipment bought with the Reserve's funding belongs to the Reserve and results must be provided to the Manager on the agreed time frame. The Reserve establishes some regulations for the manipulation of organisms and habitats within its boundaries to make sure that they are not negatively impacted by research processes.

At present the Reserve is well respected by the scientists in the region and the response to the Call for Proposals is more than what the Reserve can support.

5.5 TOURISM SUPPORT OF MPA

Depending on the Category of your MPA and the overall management goals, tourism is often the sector that can produce the most significant commercial added value in the long term. For this reason it is important to include tourism in the Management Plan and establish clear objectives and strategies to make the most of it.

Kelleher, 1999 identifies some key points for tourism management in the MPA:

- Make sure that the local community is the direct recipient of economic and employment benefits, so as to give them an incentive for conservation of the MPA resources;
- Bring together tourism industry and local people as service providers, rather than having the MPA as a direct tourism provider.
- Compromise the tourism industry with the protection of the natural environment;
- Encourage the adoption of codes of environmental practices by the industry. You can collaborate in their development.
- Motivate leaders in the tourism industry to maintain peer pressures on those that are not keen on the idea.
- Even though not all recreational values of the MPA may be translated to income make sure that they are assessed and publicized as MPA attributes.

i. Laughing Bird Caye National Park, Belize: Presented by Shalini Cawich

Management objective: To ensure safe level of recreational use within the National Park and to promote protection of the natural resources.

Management strategy: Establish carrying capacity, user's fees, ecological monitoring and enforcement of Park regulations.

Results:

Laughing Bird Caye National Park was declared through a joint effort of community members lobbying to protect what they considered a valuable resource. After their efforts, the area was declared a National Park with a total area of 10,114 acres. This National park is a complete No take Zone, meaning there can be absolutely NO fishing, diving, etc. in the area; there is no removal of flora or fauna from within the park limits. The main purpose of the Park is recreation, scuba diving and snorkeling.

Based on traditional personal experience of the community a carrying capacity of 100 people per day was established. This figure and calculation does not have scientific

research as basis, but it is being monitored and the necessary adjustments will be done in time.

Visitors fees collected are retained in the Park for maintenance.

Methods which ensure the adherence to regulations include constant monitoring and surveillance. A ranger station was built on Laughing Bird Caye and rangers are stationed at the Caye. They are equipped with a boat and necessary monitoring equipment. A daily log sheet and patrol reports are filled in every day indicating all activities within the park, each boat, number of visitors, activities engaged in, and time spent on the island or within the park. Management keeps close attention to these reports, especially with regards to carrying capacity. Rangers are trained and empowered to enforce Park regulations

A marine biologist monitors the natural resources of the National park. Special attention is paid to the visitor's impact on the resources of the park and the measures to lower the number of visitor's permits is in place.

With these measures all activities in the Laughing Bird Cay National park are carefully monitored and a safe level of use is ensured, as well as the protection of the natural resources of the park.

ii. **The Bonaire Marine Park revenue system: Kalli De Meyer, 1997. Tourism Focus No.9, 1997 (See Appendix 4 for complete text)**

Management objective: Gather tourism support for Park financing,

Management strategy: Implement admission fee to scuba dive in the Marine Park.

Results:

The Bonaire marine Park was designated in 1979 to include all the waters surrounding Bonaire, in the Dutch Antilles, from the high water mark to the 60 metre depth contour. Since the initial condition for the establishment of the Marine Park was that it had to be self sufficient after the end of the grant, mechanisms had to be found to secure financing.

Following the rationale that tourism was the largest user group, and also the one that benefited the most from a well managed and well-maintained Marine Park, the Island Government implemented a ten dollar per year admission fee payable by anyone scuba diving in the marine Park.

Divers pay the fee to the dive shop and the amount is totally passed on to the Marine Park with no overhead or administrative cost to the dive shop. Divers receive orientation and education on the code of conduct to follow in the waters of the Marine Park before they dive in. Orientation has been well received by the tourists who take pride in being part of the protection of such a precious resource.

Fees collected are used for paying salaries, research and monitoring activities, education activities to the community, maintenance of mooring buoys and of all park facilities and equipment, and for the Marine Park's law enforcement activities. At present, the Bonaire Marine Park is one of the very few actively managed, protected marine areas of the world entirely self-financing through tourism support.

5.6 RESOURCE PROTECTION:

MPAs are important tools to achieve the three main objectives of living resource conservation as defined in the World Conservation Strategy (IUCN, 1980):

- To maintain essential ecological processes and life support systems;
- To preserve genetic diversity; and
- To ensure the sustainable utilization of species and ecosystems.

Each MPA, depending on its Category and management priorities will have a great diversity of strategies for resource protection. From zoning and special regulations with their required codes of conduct, to education and enforcement we may find.

i. Lighthouse Reef Atoll, Belize: Presented by Roger Arana, MPA Manager

Management objective: Resource protection and economic alternatives

Management strategy (ies): Implement a collaborative management of commercially valuable multi-species spawning aggregation sites between staff personnel and fishermen at Lighthouse Reef Atoll.

Results:

The management issue to be addressed is the unsustainable use and overfishing of commercially valuable multi-species spawning aggregation sites at Lighthouse reef Atoll and throughout Belize in a whole.

Commercially valuable species such as Nassau grouper gather in very large numbers at specific sites to spawn increasing the vulnerability of being fished. Fishermen, most naturally, gather at these sites in large numbers to take full advantage of the situation. Eventually the site is overfished and some never recuperates as is the perfect example with the Nassau Groupers at Caye Glory. In fact Nassau Groupers have been overfished throughout the entire Caribbean to the extent that it is now an endangered species.

To overcome this problem, the Belize Audubon Society which manages both protected areas (Half Moon Caye Natural Monument and Blue Hole Natural Monument) with the aid of other organizations such as The Nature Conservancy, Green reef and Belize's Fisheries Department, has gathered scientific evidence to convince both fishermen as well as political authorities for them to immediately protect and monitor these spawning aggregation sites.

Fishermen that traditionally have fished these areas were made aware of and educated on this management issues through workshops, meetings and outreach programs.

They were also provided with different types of training so that they can find economic alternatives. Scuba certification and fly fishing training was provided to them as an incentive

for them to become tour guides. One of the most beneficial training – to the MPA objectives – is that given to them to assist the MPA technical staff in the monitoring of the spawning sites. It makes fishers feel part of the project and motivates them not to fish the sites again. Since they have benefited from these sites more than any other person, why not protect them?

ii. **Parque Nacional Arrecife de Puerto Morelos, México: Presented by Hitamar Palma, MPA Manager**

Management objective: Resource protection

Management strategy (ies): Implementation of a zoning regime with regulations; buoys demarcation of limits and different types of fishing allowed.

Results:

The National Park of Puerto Morelos was officially designated in 1998. The reef in Puerto Morelos is one of the most important economic resources for the community which is sustained mostly by fishing and low impact tourism. With the rapid development of tourism in Cancun and the establishment of the management plan for the National Park “Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc” much of the activity was transferred to the coral reef area of Puerto Morelos, placing great stress and pressure on its resources.

The Management Plan for the National Park is in effect since May, 2000. The management strategy to reduce the impact of human activities in the Park includes many activities:

1. Granting users permits to local providers taking into account the carrying capacity of the site.
2. Buoys demarcation of the park limits and anchoring buoys to avoid coral destruction by anchors.
3. Implement speed limits within the Park.
4. Zoning of the Park to allow for different activities such as: snorkeling in the shallow areas; scuba diving; commercial fishing outside of the recreational areas and recreational fishing in the “pass through” zone.
5. Surveillance of the area.

5.7 SUSTAINABLE USE OF RESOURCES FROM NATURAL ECOSYSTEMS:

Sustainability, in the context of MPA management of the natural resources depend almost exclusively on the ability of implementing management strategies for the human activities within the MPA or in the neighboring areas. Many strategies will have to be combined to achieve this goal, among them:

- Establishing a zoning regime for specific activities, including no take areas;
- Enforcement of closure periods for resource protection
- Setting size limits, gear restrictions and harvest limits to protect important species;
- Prohibiting or restricting destructive practices;
- Permit mechanisms to control number of participants in different activities;
- Setting carrying capacity to limit access and impacts on resources.

Users and community awareness and understanding of the benefits from these management practices on the health of the resource are indispensable before attempting implementation. Community participation will ensure voluntary compliance with the regulations and collaboration in the continuation of the activity.

i. **Glover's Reef Marine Resource, Belize: presented by Nidia Ramírez, MPA Manager**

Management objective: To protect and manage significant areas for the purpose of maintaining viable species economically important.

Management strategy (ies): Designate a Conservation zone; surveillance and patrolling of activities and biological monitoring.

Results:

Glover's Reef Atoll is a prototypic atoll containing over 700 patches within the shallow lagoon. Fishers depend on lobsters, Queen conch and finfish deom the general use area. One of the Reserve's objectives is to ensure that there are enough fisheries resources to sustain a healthy coral reef. As a result, there is a designated zone named Conservation Zone so as to become the nursery grounds for juvenile fishes and a protected habitat for lobsters and conch with the objective of them reproducing and eventually s spill over is caused. Fishers will then reap more fishery resources.

For this result to happen, there are many management strategies that have been adopted to ensure the desired results that go beyond speculations and assumptions.

Surveillance and Patrols: This strategy ensures that the Conservation Zone is not violated. Park Rangers and other Reserve staff have the responsibility of patrolling the area. Staff is based in the Reserve and thus their presence ensures that patrols are going to be carried out. If staff is on training or are sick, the Belize Fisheries Department assists the Reserve staff by sending an officer from the Conservation Control Unit.

Patrols are scheduled to take place at least once everyday. In the case of Glover's Reef Marine Reserve the Conservation Zone can be monitored from the dock in Middle Caye, where the research station is based. Rangers observe the Park boundaries and the fishing vessels proximity to it using powerful binoculars. This form of observation saves fuel being

wasted unnecessarily should in case it is needed for emergencies such as going into Dangriga.

There are other four islands where resorts operators live. They also help and inform the Manager if they suspect illegal activities happening in the Reserve. This has been the case because through their attendance to meetings held for Advisory Committee, they pledged to also manage the Reserve. These four operators depend on the healthy status of the MPA.

For Park Rangers to enforce regulations of MPA, marker buoys are installed to clearly demarcate the Conservation Zones from the general use zone. Should fishers be caught in the Park, they are verbally warned and they are given the information of the Reserve's boundaries and regulations. Marker buoys facilitate the Ranger's task of patrolling and enforcing regulations.

Biological monitoring: This is carried out by the staff biologist so as to collect data on commercial species in the Conservation Zone and in the General Use Zone. This data is presented to the Fisheries Coordinator of the MPA and the fishery population is assessed. Patrols that are effectively carried out will reflect in their results of the data collected in the MPA that the management strategy is effective.

UNIT 6. COURSE PARTICIPANTS AND EXAMPLES PRESENTED FOR BEST MANAGEMENT PRACTICES IN THEIR MPAs

Examples presented were edited and included in the present text.

BELIZE

1. **Hol Chan Marine Reserve** - Heider Pérez. Human Resource Management. *To create a team of biologists and other qualified interested parties to secure the livelihood of our marine parks through education and enforcement.*
2. **Glover's Reef Marine reserve** - Nidia Ramírez. Regulation for resource protection. *To protect and manage significant areas for the purpose of maintaining viable species economically important.*
3. **Lighthouse Reef Atoll** - Roger Arana. Resource protection. *Collaborative management of commercially valuable multi-species spawning aggregation sites between staff personnel and fishermen at Lighthouse Reef Atoll.*
4. **Laughing Bird Caye National Park** - Shalini Cawich. Resource protection. *Ensure safe level of recreational use within the National park and to promote protection of natural resources.*

GUATEMALA

1. **Parque Nacional Río Dulce** - Enrique Escalante. *Fishing Agreement in Rio Dulce National Park*
2. **Reserva de Usos Múltiples Río Sarstún** - Freddy Aguilar. Community participation. *Legalization of land tenure and land use planning.*
3. **Area de Protección Especial Punta de Manabique** - Estuardo Herrera. Community participation. *Creation of the master plan for APEPM.*
4. **Biotopo Chocón Machacas**. Oscar Santos. *Organize the activities related to the management and administration of the Biotopo Chocón Manacas for the preservation of the natural resources and habitats, through policies related to support agencies and communities focused on creating a social benefit.*

HONDURAS

1. **Parque Nacional Jeannette Kawas**. - Marisol Fuentes. Sustainable use of resources from natural ecosystems. *Alternatives to fisheries for fishing communities in the Jeannette Kawas National Park.*

2. **Monumento Natural de Cayos Cochinos.** - Osman Cabrera. Resource protection. *Prevent external activities from affecting the defining characteristics of the Marine Protected Areas.*

MEXICO

1. **Parque Nacional Arrecife de Puerto Morelos** - Hitamar Palma. Resource protection. *Preservation, protection and management of the reef zone.*
2. **Reserva de la Biosfera de Sian Ka'an.** - Alfonso Pott. Resource protection. *Security and patrol program.*
3. **Reserva de la Biosfera de Sian Ka'an.** - Sebastián Catch Chuc. Resource protection. *Disseminate information on ecological values, management principles for protected areas, and lessons learned in the area.*
4. **Parque Nacional Costa Occidental de Isla Mujeres, Punta Cancún y Punta Nizuc** - Environmental Education and interpretation. *Minimization of impacts on the coral reef by poor practices in sea sports.*

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APPENDICES

APPENDIX 1

PARTICIPANT'S EXERCISES

1. Participant's self introductions: name, MPA, position, expectations.
2. Interactive activity to match IUCN's categories of protected areas with their definitions
3. Small group activity: Brainstorming session to discuss established objectives in the MPAs and compare them with those established by IUCN. The objective of this exercise is to reflect on the MPA's objectives and how clearly do we understand them. Compare results with matrix of objectives and MPA categories presented by facilitator.
4. In small group select a topic in their experience in the MPA that needs training. Develop a training activity including: to whom it will be addressed, objectives of the training and the strategies for delivery.
5. Role playing exercise. The facilitator presented a situation and the groups dramatized a possible solution. The objective is to model one of the training methods discussed. The exercise was evaluated by the participants in terms of its applicability and effectiveness as a teaching/learning tool.
6. In small groups develop a needs assessment activity for an issue in their MPAs. The objective of the exercise is to practice the guidelines discussed by the facilitator in the design of a needs assessment and its importance in management.
7. Each person has to write 5 questions recommended to evaluate this Workshop. The objective of the exercise is to emphasize the importance of the group input in the evaluation process.
8. Each person will make a twenty minutes oral presentation of a management practice in their MPA which they would consider to be exemplary for the region. The objective of this exercise is to connect all the topics discussed in the Workshop and have the participants put in practice their communication skills and how they will use the concepts presented. The best presentations will be edited and included in this manual.

APPENDIX 2

OUTLINE OF PRESENTATION

Training of Trainers in the Best Principles for Marine Protected Areas Management
The Mesoamerican Barrier Reef System (MBRS) Project
Belize City, Belize
January 13-15, 2003

OBJECTIVES

- To outline, analyze, contrast and compare different management practices throughout the region in order to extract learning experiences for application and identify good practice.
- To raise awareness to the importance of training as part of the management of the MPA.
- To recognize the importance of understanding different training methods to conduct training.
- To encourage lifetime learning and skills upgrading.
- To facilitate the understanding of the process of communication and to develop the necessary skills for successful communication.

WHAT IS TRAINING?

A planned effort by an organization to facilitate staff's learning of job-related competencies.

Competencies include:

- Knowledge
- Skills and behaviors needed for successful job performance.
- Creating and sharing knowledge.

WHAT IS TRAINING?

- In business it is the creation of **intellectual capital** to gain competitive advantage.
- In Natural Resources Management it is the tool to understand and constantly refine our relationship with the ever changing object of our job.

The goal of training:

For employees to **master** the knowledge, skills and behaviors presented in the training session and to **apply** them in the day-to-day job.

TRAINING IN MANAGEMENT OF MPAS

- Must be part of the management scheme, not an occasional or sporadic activity.
- Must involve all personnel.
- Must be integrated as part of the learning cycle and intellectual growth program of all human resources in the MPA.

THE TRAINING CYCLE

- Based on systems approach and action research.
- Emphasizes problem solving, but it is constantly examined and refined.
- Underlying component is planned change. What do we want to accomplish? How to do it?

COMPARISONS OF PEDAGOGY AND ANDRAGOGY

Adults Learn Best:

- When they want to learn.
- When they see a need to learn.
- When they learn something from each session.
- From active involvement.
- From real problems based on experience.
- In an informal environment.
- Through team work.

When teaching adults we must be aware that:

- Adults respond best to a variety of teaching methods.
- Adults are out of the programmed learning habit.
- Adults want guidance and advice not certificates.
- Adults have many other pressing interests.
- Adults seek immediate solutions or response to their problems.

LEARNING STYLES**Theory of Learning Styles**

- Based on how we sense or perceive (concrete/abstract) the information.
- How we process (active/reflexive) experience and information.
- Integrates research results about brain function (right and left brain)

Learning Styles

ALL ARE VALID AND OF EQUAL CAPACITY FOR LEARNING.

- The ***Imaginative*** Learner (1) learns through sensing/feeling and watching. Diverger
- The ***Analytic*** Learner (2) learns through watching and thinking through concepts. Assimilator
- The ***Common Sense*** Learner (3) learns by thinking through concepts and by doing. Converger.
- The ***Dynamic*** Learner (4) learn by doing and sensing/feeling. Accomodator

IMPLICATIONS OF LEARNING STYLES THEORY FOR TRAINERS

- Must be aware of different learning styles in the group.
- Use a variety of teaching strategies in a session to accommodate them.
- The same content may need to be presented in a diversity of strategies.

ADVANTAGES AND DISADVANTAGES OF SELECTED TRAINING METHODS

Needs Assessment

- Institutional and individual.
- Determines if training is necessary.
- Involves organizational, person and task analysis.
- Focuses on learning needed: knowledge, skills, attitudes and behaviors.

Questions to be answered:

- Who needs to learn what?
- Why do they need to learn it?
- At what depths?
- What is the priority of the learning in question?
- Priorities in terms of learners, topics and in terms of time/deadlines.

Organizational Analysis

Looks at:

- Organization's Mission and Goals.
- Management strategies.
- Resources (\$ and human) available for training.
- Support by managers and peers for training activities.

Person Analysis

Looks at:

- Is there a lack of knowledge, skills, ability, motivation or work design affecting performance?
- Who needs training?
- What is the level of employees' readiness for training?

Task Analysis

Involves:

- Identification of important tasks.
- Knowledge, skills and behaviors to be emphasized to successfully complete the task.
- Level of complexity needed in the task.

Techniques for Assessing Training Needs

- Interviewing
- Questionnaires.
- Testing.
- Group Problem Analysis (Focal Groups)
- Job and Task Analysis (Performance Review)
- Records and Reports Study
- Visitors Commentaries.

The Training Programme Design

Considers:

- The training objective
- The audience that needs training.
- The content of the training.
- The learning material to be developed.
- The appropriate training method to be used.
- The learning process to be used (visual, auditory, physical, emotional, conceptual, individual and group.)
- The evaluation criteria

In the Local Context Consider:

- Audience
- Sensitivity of the message
- Cultural peculiarities
- Channels to audience
- Local social structure and organizations.

- Geographic location.

The Training Administration Sequence

- Informing interested parties of program availability.
- Registering participants.
- Distributing and processing pre-work (readings and tests).
- Preparing instructional materials (audiovisuals, written documents, etc.)
- Preparing the physical facilities (site and equipment).
- Supporting the actual delivery of instructions (backup lamps, paper, transparencies, etc.)
- Supporting evaluation (surveys, tests, etc.)
- Facilitating communication between trainer and trainees.
- Recording course completion on trainees files.

Components to achieve Training Objectives

- Selection of Participants
- Selection of venue
- Selection of presentation tools

Evaluation and Follow up

- Systematic process.
- Part of the Training cycle.
- Must be part of the Training session with adequate time allotted.
- Data obtained useful for decision making.

Domains of Evaluation Criteria

- **Reaction:** Was it worth it?
- **Learning:** What did I learned?
- **Job behavior:** How will I use this in my job?
- **Organizational results:** How does this impact the short or long terms goals of the MPA?
- **Training process:** What happened during the session?

Types of Evaluation

- **Process evaluation:** examines the procedures and tasks involved in the implementation of the programme.
- **Impact evaluation:** more comprehensive; focuses on long range results.
- **Outcome evaluation:** used to obtain descriptive data in a project and to document short term results.

Training Evaluation Strategies

- Great diversity of instruments.
- Important to gather quantitative and qualitative data.
- Include as many stakeholders as possible in the evaluation.
- Give feedback based on evaluation results.
- Evaluation must be formative (to improve the process)

Development of a Session Plan

- Programme title
- Session (Lesson) title
- Session length
- Learning objectives
- Target audience
- Prerequisites
- Instructor's requirement
- Room arrangement
- Materials and equipment needed
- Evaluation and assignments
- Comment

The Process of Communication

Need to know in advance of the group

- Background – who are they, previous knowledge
- Participation pattern – are there any constraints?
- Communication patterns

- Group cohesion
- Sub groups
- Group climate – formal, informal, free to express
- Group norms and regulations
- Group leader
- Members conduct

For a Successful Presentation

- Know your audience
- Make arrangements in advance
- Select adequate media for the size of the group
- Select the right equipment and check status.
- Practice your presentation
- Make an outline of important points
- Write your script
- Design your visuals

Recommendations for the Audiovisuals

- Avoid unnecessary materials. Should support the topic.
- Use simple and clear graphs and drawings.
- Use the correct font style and size.
- Avoid shocking colors.
- Do not overuse sound, transitions and other features of the program.
- Do not distract attention from communicator.

In the Presentation

- Be relaxed and confident.
- Speak slowly, spontaneous and enthusiastic.
- Use your normal voice tone and vary it for emphasis.
- Keep eye contact with the audience.
- Use direct language.
- Enunciate correctly.

- Do not read from the slide
- Do not read your presentation – use an outline.
- Keep a stable, relaxed pose.
- Dress properly.
- Invite audience participation.
- Be alert to audience attitude and take action.
- Do not ridicule the audience.
- Insert personal experience.
- Be conscious of time frame.
- Recognize sources of information.
- End session with Q & A.

EXAMPLES OF BEST MANAGEMENT PRACTICES IN MPAs

ECONOMIC DEVELOPMENT AND RESOURCE PROTECTION

Collaborative management of the Mankote Mangrove, St. Lucia

Management issue: Unsustainable use of mangrove resources for charcoal production and need for conservation.

Management strategy: new wood supply, agriculture, heritage tourism site within the mangrove.

RESEARCH AND MONITORING

The Jobos Bay National Estuarine Research Reserve, Aquirre Puerto Rico

Management Issue: Research is one of the main goals of JOBANERR. Research results must provide tools for management.

Management strategy: identify areas where research is needed; invite researchers to the site; help locate external funds for research; researchers must relate results to real problems.

TOURISM SUPPORT OF MPA

The Bonaire Marine Park revenue system

Management issue: How to protect the marine environment while maximizing safe levels of use for recreation and commerce.

Management strategy: Establish annual admission fee for divers in the park as means of self financing.

RESOURCE PROTECTION

The Saba National Marine Park

Management issue: protection of habitat and species in a multiuse site.

Management strategy: zoning with special regulations; mooring buoys; code of conduct for divers and visitors.

EDUCATION AND INTERPRETATION

The Jobos Bay National Estuarine Research Reserve, Aguirre Puerto Rico.

Management Issue: Need to link research results and coastal management to educate the users.

Management strategy: define educational policy; train educators on estuarine issues; provide on-site facilities for teaching.