

**FIRST PARTICIPATORY EVALUATION OF TUBBATAHA REEF  
NATIONAL MARINE PARK**

**Process and Result**

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## ABBREVIATION USED

BFAR	Bureau of Fisheries and Aquatic Resources
CPFI	Cagayancillo Pangabuhian Foundation Incorporated
CRM	Coastal Resource Management
DENR	Department of Environment and Natural Resources
DePED	Department of Education
DND	Department of Defence
ENRO	Environment and Natural Resources Officer
FARMC	Fisheries and Aquatic Resources Council
GEF	Global Environmental Facility
IEC	Information, Education and Communication
MAO	Municipal Agricultural Officer
MPDC	Municipal Planning and Development Coordinator
NGO	Non-government Organization
NSO	National Statistics Office
PCG	Philippine Coast Guard
PCSD	Palawan Council for Sustainable Development
PCSDS	Palawan Council for Sustainable Development Staff
PN	Philippine Navy
PPA	Philippine Ports Authority
PSU	Palawan State University
TMO	Tubbataha Management Office
TRNMP	Tubbataha Reef National Marine Park
TPAMB	Tubbataha Protected Area Management Board
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Program
WPU	Western Palawan University

# FIRST PARTICIPATORY EVALUATION OF TUBBATAHA REEF NATIONAL MARINE PARK

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## INTRODUCTION

The management of Tubbataha Reef National Marine Park (TRNMP) has completed its first management cycle. The cycle started in 1998 in the stakeholders' planning workshop where the vision for TRNMP and actions to be taken for its fulfilment were lay down. The stakeholders include representatives of the various groups of Cagayancillo municipality, government and non-government organizations of Palawan, national government agencies, diving operators associations and commercial fishers. Most of these stakeholders have come together again after seven years to evaluate the accomplishment of the first cycle in attaining the vision and agree on the set of activities for the second management cycle. The completion of the first cycle is significant not only for TRNMP but for all national parks. The TRNMP is the first national park in the country that has completed a full management cycle in the sense that the result of the planning workshop is used as the basis not only in implementing but also evaluating its accomplishment. It is also the first national park where the stakeholders did not only collectively planned and implement the activities but also evaluate these. But most of all, the result of the evaluation has, the first time provides hard and widely accepted evidence that a management based on stakeholderhip ensures successful park operation.

## PARTICIPATORY EVALUATION: RATIONALE

An evaluation is a process that determines whether a program is working, as it should by measuring the changes it brought about. The nature of the changes is assessed whether these are positive, negative or neutral according to certain set of criteria. The program management office undertakes an internal evaluation while an outside expert undertakes an external evaluation. In both instances, the target beneficiaries merely serve as information providers. But in participatory evaluation the program management office and target beneficiaries conducts the evaluation and the outside expert merely serve as facilitator. Its means that they will design the evaluation, set the indicators, gather and process the data and analyze these to generate the findings and recommendations.

Participatory evaluation does not supplant but complement internal and external evaluation and validate their findings. Nonetheless, it is considered imperative for stakeholders-managed programs because it achieves purposes other than a judgement of

the program's outcome. Through participatory evaluation, all the principles of good governance – participation, accountability, transparency and predictability-- are upheld. The result is greater stakeholders' understanding of the program and stronger confidence that mobilizes resources from more sources. The more sources of support, the more sustainable the program.

## DESIGN OF PARTICIPATORY EVALUATION

Three factors determine the design of participatory evaluation: availability of scientific data, stakeholders' time and resources to gather additional data. Through scientific data, the stakeholders can easily validate a situation against their experience and have a common information base on which to buttress their judgement on program accomplishment. The data also lessen the chance that off-hand and isolated observation are taken as general fact and facilitate the resolution of conflicting views. Such views can easily arise for TRNMP where most stakeholders are off-site. Living far from the site, they do not have a continuing and in-depth observation of the situation that on-site stakeholders have.

The availability of scientific data saves stakeholders' time and the resources. Stakeholders who are not part of program management and have their own work to attend have limited time to spare. While the TRNMP have this type of stakeholders, it also has the advantage of abundant scientific data produced from long-term monitoring. No national park in the country is as regularly monitored in both the biological and socio-economic spheres as the TRNMP. The availability of scientific data and limited stakeholder' time underpin the design of a three-day workshop.

The stakeholders review on the first day the history the park's establishment, stakeholders' agreements hammered in the 1998 workshop and activities done to implement the management plan (Attachment 1). The review aims to put the stakeholders in the same level of understanding about the program particularly those who are not around in the 1998 stakeholders' workshop. Based on the review, they select the critical indicators using those that they identified in the questionnaire circulated three weeks before the workshop. They subsequently organize themselves into four research groups and prepare the plan to collect and analyse the data and make the recommendation. Each group represent a key concern of the program's goals. These concerns are management capability, partnership, habitat protection and local capability.

The stakeholders work on the second day and the morning of the third day. They collect, validate, process and interpret the data and used these to formulate the steps to be taken in the next seven years to implement the second management cycle. The four groups reconvene on the afternoon on the third day. Each group presents their findings and their recommendations. Using their findings, they assessed to what extent the stakeholders' agreements in 1998 workshop are honoured.

Afterwards, they review together their recommendations in the questionnaires they filled up earlier. They refine these recommendations based on their findings and blend these with their new recommendations. These recommendations constitute the work plan for the next seven years. The iterative reflection using scientific data enables the stakeholders to produce a work plan with concrete foundation and built on the gains and lessons of the past while being directed by the program's vision.

## OBJECTIVES OF THE EVALUATION WORKSHOP

The workshop is designed to meet three objectives. These objectives guide the workshop activities and serve as basis in assessing its accomplishment. The objectives are as follows:

- Review the activities done in managing the TRNMP and their results particularly those relevant in attaining the objectives of its management plan;
- Evaluate the activities and their results to determine their strengths and weaknesses;
- Set the next steps that will be built on the accomplishment of past effort and move the management of TRNMP closer to the objectives of its management plan.

## STAKEHOLDERS' PARTICIPATION IN THE WORKSHOP

Seven sectors are represented in the evaluation workshop (Table 1). These are the following: national government, Palawan provincial government, Cagayancillo local government, Cagayancillo local groups, NGO, Puerto Princesa City government and the academe. Included among the national government representatives are the PCSD, BFAR, DENR, DepED, PPA and DND. The offices of the governor and vice-governor, provincial council, provincial ENRO and the TMO participate for the provincial government. The mayor heads the delegation from the local government of Cagayancillo that included the MAO, MPDC and a barangay captain. The fishing and business groups of Cagayancillo are also represented. The NGO include the ELAC, Saguda, Tambuli and WWF. The Palawan State University and Western Palawan University represent the academe.

The workshop has a total of 38 participants. The national government has 24 percent of the total. The Palawan provincial government and Cagayancillo local government have 18 percent each. The NGO representatives compose 16 percent. The Cagayancillo local groups have 8 percent while the academe has 5 percent. In determining the members of the research groups, the participants decide that they should be in the group where they feel their knowledge can make the most contribution (Table 2).

Table 1 Organizations Represented in the First Participatory Evaluation of TRNMP on April 6-8 2005 and Number of Participants by Sector

Sector	Organization	Number of Participants	Percentage
National Government	PCSD, BFAR, DENR, DePED, PPA, DND	9	24
Palawan Provincial Government	Office of the Governor, Office of the Vice Governor, Provincial Council, Provincial ENRO, TMO	7	18
Cagayanacillo Local Government	MAO,MPDC, Office of the Mayor, Barangay Government	7	18
Cagayancillo Local Groups	Business Group, Fishing Group	3	8
NGO	ELAC, Saguda, Tambuli, WWF	6	16
Puerto Princesa City Government	Government Personnel, Bantay Dagat	4	11
Academe	PSU, WPU	2	5
TOTAL		38	100

Table 2 Representation in the Research Groups in the First Participatory Evaluation of TRNMP and Number of Members

Group	Representation	Number of Members
Group 1: Management Capability	DENR, PCSDS, DND, Cagayancillo Municipal Government, TMO, Puerto Princesa Bantay Dagat, PPC Personnel	8
Group 2: Partnership	PCSDS, PPA, DepED, Saguda, WWF, Tambuli, ELAC, Office of the Governor, Office of Provincial Vice-Governor, Provincial Council	14
Group 3: Habitat Protection	PSU, WPU, BFAR, Puerto Princesa-ENRO, TMO	6
Group 4: Local Capability	Cagayancillo MAO,MPDC, Office of the Mayor, Barangay Government , Cagayancillo Local Groups, WWF	10
Total		38

The first group that work on the upgrade of TRNMP management capability has eight members. Included are the representatives of DENR, PCSDS, DND and the TMO. The second group working on the expansion and strengthening of partnership have 14 members. The NGO and representatives of the provincial government are among the members. The group working on habitat protection has six members that count the representatives from the BFAR, academe and TMO. The fourth group composed of representatives from Cagayancillo and WWF has 10 members. They work on the improvement of local capability.

## TRNMP VISION, OBJECTIVES, MANAGEMENT AND STAKEHOLDERS' AGREEMENT

The participants reviewed the TRNMP vision at the start of the evaluation to have the same understanding of the future situation that the management activities are trying to achieve. The vision is expressed in three components:

Effectively conserve and maintain ecological integrity  
Contribute to equitable distribution of benefits  
Sustain socio-economic development

The vision is translated into four objectives. These are the following: (1) preserve and improve critical habitat and their associated species; (2) promote local, national, and international understanding of the benefits of conservation to increase participation; (3) effectively manage TRNMP with stakeholder participation to increase compliance; and (4) assist in building local capacity for sustainable resource management in Cagayancillo. The accomplishment of these objectives is the yardstick through which the result of the park's management activities is measured. Each objective has one research group collecting, processing and analysing the data that measure the accomplishment. .

The management plan guides the activities implemented to attain the objectives. The TPAMB makes the broad decisions on the manner of implementation and the TMO carries these out. The main activities are enforcement of laws within the park, conduct of research on its biological resources and socio-economic development activities in Cagayancillo. The Philippine Navy in collaboration with the Philippine Coast Guard leads the enforcement activities. While the park generates funds from diver's fees, these cover only 51 percent of the 6.0 Million Pesos annual operating cost of the park. It still depends on the national government for 40 percent and on WWF for 9 percent.

The TMO considers the current financing arrangement as inadequate to secure park operation. The proceeds from diver's fee collection fluctuate year-to-year and has never reached an amount that can cover the entire operating cost. The greater part of the operating cost goes to enforcement. Its share will continue to rise as its intensity increases to successfully deter encroachment. But the cost of maintaining current enforcement

intensity eats a large part of the allocation of the AFP Western Command. It is not certain for how long the agency will sustain it.

The TMO does not have yet the capability to carry out enforcement even at the current level much more respond to problems beyond the park boundaries. A good deal of investment is needed to upgrade the capacity not just of the rangers but also among planners, managers and partners involved in TRNMP management. Furthermore, the legal status of TRNMP has yet to be clarified because of the inconsistency in the provisions of the three laws covering its jurisdiction. These laws are the NIPAS Act (Republic Act 7586), Local Government Code (Republic Act 7160) and SEP Law (Republic Act 7611). This constraints provides a lesson that legal instruments aimed at facilitating park management requires constant review and amendment because certain provisions may be undermining the gains it wishes to attain.

The TMO sees the current level of accomplishment as a testimony that partnership among stakeholders is a requisite for park management to operate. Even a no-take zone regime can work when various stakeholders and institutions share the costs and benefits. The nine agreements that the stakeholders forged in the 1998 workshop serve as the cornerstone of their partnership (Table 3). The participants also reviewed these agreements not only to imbibe once again the commitment that each made to a cause that unified them but also to assess as to what extent these are fulfilled.

Table 3 Agreements Forged in the 1998 Stakeholders' Workshop to Manage and Protect the TRNMP

1. Cagayancillo fishers to respect no-take zone
2. Livelihood and CRM support will be given to Cagayancillo
3. Commercial and Palawan fishers to respect no take zone
4. Divers and boat operators to pay users' fee
5. Seven percent share for users fee will be allocated to Cagayancillo municipality
6. PCSD to draft bill and authorize pilot collection of user's fee
7. TRAMB to establish to establish Tubbataha Management Office
8. Philippine Navy and Philippine Coast Guard to establish and staff the ranger station
9. WWF-Philippines to develop project proposals to support the management of Tubbataha Reef and the socio-economic development for Cagayncillo

## TASK OF THE RESEARCH GROUPS AND INDICATORS OF ACCOMPLISHMENT

The participants define their own tasks as research groups. They set five tasks: (1) obtain information on the indicators assigned to the group; (2) assess the information collected by identifying the data gaps and relevance to the indicators; (3) validate information by comparing the data from various sources; (4) analyse the information and draw general findings and recommendations; and (5) prepare the findings for presentation and present these to the stakeholders.

The selection of the indicators began with the circulation of a questionnaire three weeks before the workshop. The stakeholders indicate in the questionnaire the type of information that they wish to know on TRNMP management and its accomplishment. The questionnaires gather 26 questions. After the participants set their tasks as research groups, they review the questions to assess their relevance. The participants subsequently cluster the questions by objective resulting to four clusters. Each cluster is handed over to research group that would work on it.

The research groups first convert the questions into indicators. They generate 25 indicators: four on management capability, ten on partnership, seven on habitat protection and three on local capability (Table 4). Among the indicators of management capability are the amount mobilized for TRNMP and type of training courses conducted, number of trainees and source of support. The indicators on partnership include IEC activities conducted, organizations involved and results, manual of operation being used and type of partners and their contribution. Various organizations and groups jointly undertake most management activities in TRNMP resulting to the blurring of line between management capability and partnership activities. The indicators on habitat protection are all biological ranging from species diversity to biomass. The three indicators of local capability are livelihood, living standard and CRM indicators.

Sub-indicators are provided for one indicator in management capability and three in local capability. Because the indicators are conceptually broad, sub-indicators are needed for these to be measurable. In management capability, the indicator with sub-indicators is TPAMB effectiveness. One sub-indicator of TPAMB effectiveness is number of resolutions passed and implemented. In local capability, one of the four sub-indicators for livelihood is the amount of cash income. For living standard, lot ownership, toilet ownership and television ownership are among the eight sub-indicators. Counting among the 12 CRM sub-indicators are the number of CRM ordinances passed and area of marine reserves.

Table 4 Indicators and Sub-Indicators Used in the First Participatory Evaluation of TRNMP

Objective	Accomplishment Indicator
Management Capability	Amount Mobilized for TRNMP, Type of Training Courses Conducted, Number of Trainees and Source of Support; Effectiveness of TPAMB (Number of TPAMB Meetings and Attendance, Number of Executive Committee Meetings and Attendance, Number of Resolutions Passed and Implemented);
Partnership	IEC Activities, Organizations Involved and Results; Manual of Operation; Training Content, Organizational Structure of TMO and PAMB; Legal Instruments; Partners and Their Contribution; Number of Diving Trips and Paying Divers; Income by Source; Enforcement System
Habitat Protection	Species Diversity, Bethnic Community Cover, Fish Biomass, Microalgae Cover, Indicator Species, Seabirds, Marine Turtles
Local Capability	Livelihood (Cash Income, Membership in Pangabuhian Foundation, Amount of Outstanding Loan, Population Size); Living Standard (Lot Ownership, House Ownership, Houses with GI Roof, Households Using Kerosene for Lighting, Households Using LPG as Cooking Fuel, Households With Water-sealed Toilets, House With Television, Households With Refrigerator) CRM Indicators (Number of CRM Ordinances, Number of BFARMC Formed, Number of PO Organized, Number of Registered Fishing Boats, Number of Fishers Registered, Number of Fishing Gears Registered, Area Planted to Mangroves, Number of Apprehensions for Fishing Law Violations, Number of Marine Reserves Established, Area of Marine Reserves, Average Fish Catch)

#### FINDINGS OF THE RESEARCH GROUPS

The research groups produced 22 tables. Many tables contain time-series data reflecting the high degree of monitoring done on the park. These data are separately collected and compiled by different groups in various forms and documents. To serve the purposes of the evaluation, these data are assembled as one document and put in standard format. The data on management capability and partnership put to light the management input that has been provided through time. The data on habitat protection and local capability reveal the output in the form of impacts. Together, the data presents the comprehensive picture of TRNMP as a management unit and sustainable development tool. This picture points to the fact that monitoring is indispensable for an evaluation to be rigorous.

## Management Capability

To effectively manage TRNMP with stakeholder participation to increase compliance is the objective of building management capability. The extent this objective is attained in the past seven years is seen in four indicators.

### Financial Capability

The first indicator is the amount mobilized to implement the TRNMP Management Plan. Financial means is an essential component of management capability. The amount of 6.0 Million Pesos a year has been mobilized. As was shown earlier, the amount is pooled out of funds from the private sector through the divers and diving operators, NGO through WWF and the government. The various sources indicate the degree of stakeholders' participation involved in raising funds as part of building management capability.

### Human Resources Capability

The second indicator is the exposure of park managers, staff and partners to formal learning events aimed to build their management capacity. These events are training courses, international conferences and management workshops. The diversity and number of events as well the number of participation indicate the effort made to improve human resources quality. A high quality of human resources is also considered an essential component of management capability. Between 2001 and 2005, the TPAMB members, TMO staff and partners have been exposed to 14 training courses, two international conferences and 12 management workshops (Table 5).

This number translates to three or four training courses and three management workshops every year and one international conference every two years. A total of 240 participations are made or about 60 participations per year. If the average participation takes three days, the total is 180 days per year is devoted to human resources development. The sources of support for these learning experiences again indicate the extent of stakeholders' participation. The sources include the government (BFAR and TMO), NGO (WWF), international organization (UNESCO) and private sector.

### Management Mechanisms

The third indicator is the effectiveness of the 17-member TPAMB in its role as the policy-making body of the TRNMP. Its members are eight national agencies, four provincial government offices, one municipal government and four NGO (Table 6). The Executive Committee composed of six TPAMB members operates to ease the process of making decisions that carry out its policies. These are DENR, Philippine Coast Guard, Philippine Navy, PCSDS, Saguda and WWF.

Table 5 Training Courses for TRNMP Management, Number of Events and Trainees and Fund Sources: 2001-2005

Course	No of Events	No of Participation	Fund Source
Orientation for Marine Park Rangers	1	15	WWF
Comprehensive Training for Marine Park Rangers	5	75	WWF for 3 events & TMO for 2
Study Tour for Marine Park Rangers	2	20	WWF/TMO
Study Tour for Executive Committee Members	1	6	WWF
Training of Trainers	1	2	WWF
Open Water Scuba Course	1	2	TMO
Sea Scouts/Life Saving Course	1	2	WWF
Fish Warden Course	1	2	BFAR
Coral Reef Monitoring	1	2	Private Sector
Access Tutorial	1	2	TMO
Basic Fund Raising Course	1	1	TMO
Training on Int'l Environmental Law	1	1	UNESCO
Training on Seabird Survey and Census	1	15	UNESCO
Training on OBM Maintenance	2	25	WWF
International Conferences	3	1	UNESCO
Workshops on Planning, Progress Review and Evaluation	12	240	WWF
Total	35	411	

Table 6 Members of the Tubbataha Protected Area Management Board: 2005

<ol style="list-style-type: none"> <li>1. Palawan Council for Sustainable Development</li> <li>2. Department of Environment and Natural Resources</li> <li>3. Bureau of Fisheries and Aquatic Resources</li> <li>4. Philippine Navy</li> <li>5. Armed Forces of the Philippines-Western Command</li> <li>6. Department of Tourism</li> <li>7. Philippine Coast Guard</li> <li>8. Provincial Government</li> <li>9. Municipal Government</li> <li>10. Tambuli Ta Mga Kagayanen</li> <li>11. Conservation International</li> <li>12. Saguda-Palawan</li> <li>13. WWF-Philippines</li> <li>14. Palawan Council for Sustainable Development Staff</li> <li>15. Palawan Environment and Natural Resources Office</li> <li>16. Provincial Council Chair on Committee on Environment</li> <li>17. Provincial Council Chair on Committee on Budget and Appropriation</li> </ol>
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The formation of the TPAMB and the Executive Committee is an accomplishment being the formal institutional mechanism where stakeholders can take part in making decisions on TRNMP. Together with the TMO, these mechanisms are also intrinsic part of management capability.

The effectiveness of the TPAMB is seen in four sub-indicators: number of meetings of the TPAMB and the Executive Committee, the attendance rate of these meetings, number of resolutions made and their rate of implementation. The TPAMB have 12 meetings between 2001 and 2004 while the Executive Committee has 48 meetings (Table 7). This number is equivalent to three meetings per year for TPAMB and 12 meetings per year or a monthly meeting for the Executive Committee. The meetings of the Executive Committee are quite frequent and underscore the high level of attention that the members give to park management.

These meetings represent 100 percent of the total scheduled meetings. The attendance rate in the TPAMB is lower than in the Executive Committee (80% versus 95%). But such attendance rate for TPAMB is high considering the number of members. A total of 41 resolutions have been passed or about 10 resolutions per year (Table 8). All the resolutions are currently implemented.

Table 7 Number of Meetings of TPAMB and Executive Committee and Attendance Rate: 2001-2004

Item	TPAMB Meetings	Executive Committee Meetings
Number of meetings	12 meetings	48 meetings
Percent of scheduled meetings	100 percent	100 percent
Attendance rate	80 percent	95 percent

Table 8 Number of Resolutions and Implementation Rate in TPAMB: 2001-2004

Type of Resolution	Number	Implementation Rate
Administrative	31	100 percent
Commendation of Rangers	4	100 percent
Membership	6	100 percent
Total	41	100 percent

## Partnership

One objective of TRNMP management is to promote local, national, and international understanding of the benefits of conservation to increase participation. The activities done to reach out to as many stakeholders as possible at all levels are seen in the IEC activities. The involvement of a wide range of stakeholders in management is seen not only in the organizations supporting IEC activities but also in the accomplishment in seven aspects of management. These aspects are the type of partners and their contribution, legal instruments, organizational structure of TMO and PAMB, manual of operation; number of diving trips and paying divers; income by source and number of intrusions and status of cases.

### IEC Activities and Result

Ten varieties of IEC activities have been done to increase awareness and interest in TRNMP from 1997-2004 (Table 9). These activities make use of different media. The performing arts are used through contest and concert. Radio and television include TRNMP materials in their broadcast. The print is the most widely used through brochures, news articles and briefing materials. Campaign through face-to face interaction is also done through workshops, seminars and the regular briefing of divers going to the park.

Table 9 Number of IEC Activities Conducted for TRNMP: 1997-2004

Activities	Organizations Involved
Drama skit contest	UNESCO, Saguda-Palawan
Jingle writing contest	Saguda-Palawan
TV episode play	Radio-TV Malacanang
MTV play of Tubbataha song	Grupo Paragua
Briefing material production and distribution	WWF-Philippines
Briefing and video presentation for divers	Tubbataha Park Management Office, Dive Operators
News article release	Newspaper Groups
Brochure production and distribution	Marine Park Center of Japan
Workshop	Tubbataha Park Management Office
Radio program	DYSP, Tanbuli Ta Mga Kagayanen, Inc, WWF-Philippines
Concert	Featured Artists, Tubbataha Park Management Office
Drawing contest	Tubbataha Park Management Office
Seminar	Tubbataha Park Management Office

The IEC activities involve individuals, business groups, government, NGO and international organizations. The TMO is involved in workshops, seminars and the divers briefing. The newspaper groups, WWF-Philippines and Marine Centre of Japan are into printed materials. TV and radio stations work with NGO and artists' groups in airing TRNMP materials. Saguda has organized contests one of which is supported by UNESCO.

The interest resulting from IEC activities have reportedly germinated into concrete actions (Table 10). These are credited for raising funds from groups and individuals, conduct of community actions, assistance in park protection, ease in data generation and gain in media exposure. Community actions include coastal clean up and mangrove planting. Providing information on park violation is the way citizens help in park protection. They also help in monitoring activities to generate data for management decisions. The media releases have produced interest that leads to more media releases.

But the IEC component of TRNMP needs improvement. While TRNMP has a wealth of scientific data, these are not systematically used as IEC materials. Even the present information materials are too technical for the general public. The weak dovetailing between scientific database and IEC material generation prevents the exposure of wider audience and deepening public knowledge on TRNMP.

Likewise, media has not been systematically used resulting to the under-utilization of the local media. The activities have been implemented sporadically. These characteristics indicate that the current IEC is yet to be constituted into a program. The activities have to be planned and implemented as a coherent set with rationally allocated resources to attain a long-term goal.

Table 10 Actions Resulting from IEC Activities Conducted from 1997-2004

General	Specific
Fund raising	Funds for information materials; Donations from individuals participating in Tubbataha Expeditions
Community Actions	Coastal clean-up; Organization of environmental youth clubs; Mangrove planting; Creation of Tubbataha songs; Presentation of cultural shows; Support from barangay officials;
Park Protection	Reporting of park rules violations; Increase of the awareness Palawan fisher folks
Data Generation	Data for the TRNMP Management Plan; Books and reports on TRNMP; Villagers' assistance in monitoring marine resources
Media Exposure	Efforts of Conservation Groups; Conduct of Media Tour; Information Materials

## Partners and Their Contribution

In spite of the state of its IEC activities, the TRNMP have won supporters at all levels that have given concrete contribution (Table 11). Among the foreign donors are the Japanese Government, Packard Foundation, GEF-UNDP, WWF-US, Coral Alliance, Marine Parks Centre of Japan, Ford Foundation and UNESCO. Most of these donors channelled their contribution through a local NGO. The Ford Foundation for instance donated ten mooring buoys through the Rotary Club of Palawan.

The national contributors are DENR, DOT, Philippine Navy and Philippine Coast Guard. Local organizations give their share through the Palawan provincial government and Cagayancillo municipal government. Their contribution is in the form of funds, personnel, special services, equipment, facilities and even legislation.

Table 11 Partners and Their Contribution in the Management of TRNMP: 1997-2005

Partners	Contribution
Japanese Embassy and Department of Tourism through Saguda 1997	Mooring buoys and their installation
Packard Foundation, GEF-UNDP and WWF-US through WWF-Philippines 1998-2005	Conduct of research; Establishment of TMO; Livelihood project in Cagayancillo
Coral Alliance through the Sulu Fund 1998	Fund for IEC
Marine Parks Centre of Japan through the Sulu Fund 1999	Ranger Station
Philippine Navy	Provision of personnel, ranger station, law enforcement equipment (e.g., radio, solar etc) and potable water in ranger station Provision of vessel to relieve MPRS;
Philippine Coast Guard	Provision of personnel; Vessel to lay buoys sinker; Maintenance of lighthouse.
Government of Palawan	Fund allocation in 2003
DENR (PWRC) 2002	Personnel to check bird kill
UNESCO-WHC 2004	Funds to study on the impacts of illegal fishing in TRNMP
Ford Foundation through the Rotary Club of Palawan	Donation of 10 mooring buoys
Municipal Government	Ordinances in support of Tubbataha Bill

## Legal Instruments

The process of democratic legislation can only produce a legal instrument when various groups work together so that their common interest can be served. The operation of TRNMP is backed with 12 legal instruments that testify the partnership of various groups (Table 12). These instruments include two municipal legislations, one provincial legislation, five national legislations and memoranda of agreement and two international agreements. The first instrument is done in 1987 when the provincial government initiated the conservation of Tubbataha Reef by turning it into a marine park. It marks the start of the 18-year endeavour to conserve the park.

The endeavour is by no means easy as can be seen in the various management arrangements tried. As shown in the legal instruments, these arrangements include a DENR-NGO collaboration, government coordinating committee and presidential task force. The multi-stakeholder body in the form of the TPAMB evolved from these arrangements. It has the longest life span so far being operational for seven years. It is also considered as the most successful in pursuing the endeavour.

Two international agreements elevate the status of TRNMP as a site of global importance. These are the Ramsar Convention and the UNESCO List of Heritage Sites. A bill is currently in the Philippine Congress aimed at rationalizing the management and operation of TRNMP. The bill does not only signify the growing importance that the national stakeholders place on TRNMP. It also indicates that various stakeholders have been continuously working to fine-tune the ways of conserving it.

## Management Systems

The management systems employed indicate not only the effort to make park operation efficient. These are also adapted to the government systems to which the TMO operation is lodged while facilitating access to stakeholders' contribution. The manner these systems operate is contained in the manual of operation. The manual describes the procedures to undertake activities while providing room for flexibility for these to adapt to specific situations while adhering to national policies. It is aimed at accelerating the delivery of inputs, facilitating project implementation and securing financial integrity. The manual users are the TPAMB, Executive Committee and TMO. The procedures embody participation, efficiency, transparency and accountability.

The manual of operation covers the areas of planning, budgeting, financing, personnel, equipment, travel and training (Table 13). In the area of planning, the procedures in preparing the annual work and financial plan are set. Through these procedures, the TPAMB can fix the direction of the work for the year, allocate resources and monitor progress.

Table 12 Legal Instruments Issued on TRNMP: 1987-2005

Time	Legal Instrument
September 1987	Sangguniang Panlalawigan Resolution requesting the DENR Secretary to make Tubbataha Reef a marine park.
August 1988	Presidential Proclamation No. 306 Declaring the Tubbataha Reef and surrounding waters of the public domain in Central Sulu Sea, Province of Palawan as Tubbataha Reef National Marine Park.
September 1989	Municipality of Cagayancillo Sangguniang Bayan Resolution No. 28-89 requesting authority from Hon. Carlos G. Dominguez of Department of Agriculture and Natural Resources to grant Municipal Mayor to issue permit to bonafide resident to culture seaweeds in the Municipal Offshore of Cagayancillo
February 1990	Municipality of Cagayancillo Sangguniang Bayan Resolution No.40-90 adopting and continuing the community development project launched by Mr. Alex Ursula, a community development consultant as component project of Tubbataha Foundation to pursue the objectives of the marine park.
September 1990	Memorandum of Agreement between DENR and Tubbataha Foundation to assist DENR and its program to protect, conserve, preserve and develop Tubbataha Reef National Marine Park.
November 1990	DENR Special Order 1190 Designation of a Coordinating Committee Members for TRNMP.
July 1995	Memorandum Circular DOT, DBM, NFW, Provincial Government of Palawan, Municipality of Cagayancillo, DENR and PCSD creation of Presidential Task Force for TRNMP.
January 1997	Memorandum of Agreement between DND, Western Command and WWF on research and monitoring activities in TRNMP
June 1998	Memorandum of Agreement between DENR and PCSD creation of TPAMB
May 1999	Memorandum of Agreement among DA-BFAR, DILG, DND, DOTC, DOJ and WWF on the contribution/counterpart relative to specific organizational mandate
November 1999	RAMSAR Convention on Wetlands inclusion of TRNMP to the List of Wetlands of International Importance.
December 1999	Inclusion of TRNMP in the UNESCO World Heritage Site list as a natural heritage
September 2003	Filing of Tubbataha Bill in Congress authored by Congressman Mitra. It is entitled establishing the TRNMP in the Province of Palawan as a Natural Park Under the NIPAS Act and SEP Law Providing for its Management and Other Purposes
February 2005	Re-filing of Tubbataha Bill in Congress authored by Congressmen. Alvarez and Mitra

Table 13 Manual of Operation Generated and Used in TRNMP Management: 2005

Manual	Description
Annual Work and Financial Planning	Enable the Executive Committee endorse the plan and the TPAMB to approve it; The plan set the direction of organizing work for implementation; reference in resource allocation and tool for monitoring programs; Ease revisions such as change in schedule with the change in situation; Changes in activities without change in budget requires consultation with the Executive Committee; The TPAMB must approve substantial changes.
Budgeting	The TPAMB approves the amount of user's fees. About 43% of the operating cost is from park fees collection; The collected fee is released quarterly, deposited into revolving fund account and disbursed by TMO. The budgeting system aims to optimise resource use.
Financial Management	The TRNMP Special Conservation Trust Fund is built from park fees, grants and donations, The amount withdrawn is allocated for the following: 43% for park management operations; 7% for livelihood project in Cagayancillo and 50% for reserved fund to be used as leverage for other fund in financing agreements. The manual ensures financial accountability by setting procedures of internal control, goods and services procurement, cash receipts requirement and use of petty cash fund. It also set the accounting process including recording, classifying, summarizing and interpretation of transactions.
Personnel Management	The procedures on the recruitment, selection, hiring and evaluation of personnel. Also includes procedures in describing prescribed conduct and proper decorum of employees while at work.
Equipment Management	Describes the procedures to identify equipment needs as well as selection and purchase. Also include the procedures for their use and maintenance for the safety of the equipment and their users while maximizing the usefulness of the equipment.
Travel Arrangement	Specifies the procedures to determine the circumstance requiring travel and arranging and obtaining the means to travel. It also set the procedures in the use of resources while on travel and to conclude the travel.
Training for Marine Park Rangers	Describes the training curriculum. The topics are the following: Inter-relationships of Ecosystems (Biodiversity and its Importance); The Marine Environment; Biodiversity in TRNMP in Comparison With Other MPA; Management Strategies for TRNMP; Environmental Laws; Affidavit-Making, Arrests, Searches and Seizures; Crisis Management Concepts; Operational Guidelines for TRNMP; The training has been done quarterly since 2001. Taking the training course is 20 Philippine Navy personnel. Through the training course, the park rangers learn their functions in the park. The training emphasizes that safety of life and property always comes first.

In training, the training manual for the marine park rangers set the objectives, curriculum, timetables, materials and optimum number of participants. The curriculum includes topics on strategies for TRNMP, environmental laws and affidavit-making, arrests, searches and seizures. The training has been going on every quarter since 2001 involving 20 Philippine Navy personnel every event. However, there is no comprehensive training system yet in place. The training of TPPAMB members and TMO staff is not yet guided by a long-term human resource development program but relies largely on training opportunities that come along.

### Contribution of the Diving Community

The biggest private sector fund contributor to TRNMP is the diving community. Composed of the diving operators and their clients, they raise PHP8,846,862.57 from 1998 to 2001. The average is PHP1,263,837 yearly. The amount shows an increasing trend in seven-year period although there are fluctuations. The fluctuations are attributed to external factors such as the 2002 kidnapping in a Palawan resort. From 2001 to 2004, there are 274 diving trips to TRNMP with a total of 3,100 divers (Table 14). It means that an average trip brings in about 11 divers. The increasing trend of the proceeds from diving fee as well as the fluctuation are reflected in the number of trips and paying divers.

A foreign diver pays a one-time pay of PHP2,500.00 while the Filipino divers pays the lower amount of PHP 1,250.00. For such amount, one can dive for unlimited duration and frequency. But a normal trip takes five days with four diving days. The price of diving in TRNMP is based on the result of the willingness-top-pay survey conducted in 2000. The diving fee constitutes from five to 10 percent of the diving package that includes the plane fare from Manila to Puerto Princesa.

The diving operators act as the TRNMP collecting agent. The diver pays for the whole diving trip in one amount and the diving fee is part of it. While the number of divers and driving trips is growing, the optimum number of dive boats and divers that the park and sections of it can accommodate at any time is not yet established. The only factor that presently limits the number of boats within the park is the number and quality of the mooring buoys. The maximum number of boats that these buoys can take is 12 200-MT boats and six smaller boats. The boats can drag these buoys when the waves are high crushing the corals in the process. Because the park is only safe for diving only between March and June, its window to generate income is automatically curtailed. .

### Income by Source

The TRNMP currently obtains funds that bankroll part of its operating cost from six sources. These are diver's fee, provincial allocation, savings from past projects, enforcement incentives allocated from the trust fund and interest from deposits (Table 15). The funds from these sources go to the Special Conservation Trust Fund for

TRNMP. Put in the trust funds are the proceeds from diver's fee, donations, gifts, government allocation and earnings from various sources.

In the past seven years, only divers' fee has regularly provided funds for operation. It is also the biggest contributor accounting for 88 percent of the total funds obtained during the period that amounts to PHP10,005,568.59. The contribution from the sale of souvenir is increasing. But its contribution in 2004 when it earns the highest since its operation three years ago is only 6 percent of the total amount earned for the year. Fund from the provincial government is received only once.

While the diversity of sources for TRNMP operation exhibits the positive result of private-public sector partnership, it is not covering the cost of park maintenance. Furthermore, only 43 percent of the amount that goes into the trust fund can be spent on park maintenance. The 50 percent is set aside as reserve fund that may be used as leverage for fund raising. The municipality of Cagayancillo gets the 7 percent. As agreed in the 1998 stakeholders workshop, the percentage is part of the compensation for foregoing fishing opportunities in the park.

Table 14 Number of Diving Trips and Paying Divers in TRNMP: 2001-2004

Year	Number of Trips	Number of Paying Divers
2001	66	692
2002	58	629
2003	75	858
2004	75	921
Total	274	3,100

Table 15 Income of TRNMP by Source: 1998-2004

YEAR	Divers' Fee	Provincial Allocation	Savings	Enforcement Incentives	Proceeds from Sale of Souvenirs	Interest from Deposit
1998	83,150.00					
1999	156,850.00					
2000	1,717,321.40					
2001	1,599,512.12					
2002	1,223,039.05				40,000.00	178,830.38
2003	1,761,210.00	520,000.00		176,200.00	20,510.00	
2004	2,305,780.00		94,166.55	30,000.00	92,147.50	6,851.59
Subtotal	8,846,862.57	520,000.00	94,166.55	206,200.00	152,657.50	185,681.97
Total						P10,005,568.59

## Enforcement System

Systems are necessary to carry out management actions. But the enforcement system is considered the centre around which other management systems of TRNMP operate. Part of the system is patrolling. Around 320 patrols in North and South Atolls have been conducted or 80 patrols a year from 2001 to 2004. This frequency translates to about seven patrols every month or twice a week.

The system has handled 62 intrusions between 1995-2004 that brings an average of six intrusions yearly (Table 16). The numbers of intrusions is higher between 2000-2004 when the average number of intrusions is about nine a year. The difference does not necessarily mean that more intrusions occur in the last five years. It can be that greater vigilance has caught more intruders than before. The most known intruders are the five Chinese vessels in 2002. The local intruders are from the resource-depleted provinces of Antique, Cebu and Negros Oriental.

Among the 62 intrusions, 16 cases have been filed. Six cases are dismissed and ten resulted to an administrative fine. The experience of TRNMP in prosecuting the cases dramatizes the hardships that all park management have to go through in dealing with the country's judicial system. At the same time, it is a constant reminder that the park's management unit is part of a bigger government system. Even if the park's management unit attains maximum capability, it is not immune to the weaknesses of the other parts of the government system.

## Habitat Protection

The preservation and improvement of critical habitat and their associated species is one of the objectives of TRNMP. The extent of preservation and improvement is mirrored in the status of biological resources. Their status and change overtime are seen the following indicators: species diversity, cover of benthic community, fish biomass, commercial fish biomass, microalgae cover, indicator species, seabirds and marine turtles.

### Species Diversity

The biodiversity in TRNMP is observed in the number of species of fish, coral, algae and sea-grass (Table 17). The first survey of fish and coral is made in 1982 while it is only 1991 for algae and sea-grass. The survey has not been done regularly. Between 1982 and 2004, only five fish surveys have been done with the longest interval of 18 years. Only three coral surveys are completed with a longest interval of 14 years. Four surveys have been done on algae and seven on sea-grass. Algae are last surveyed in 2000 while sea-grass is last surveyed in 2004.

Table 16 Intrusions and Status of Cases on TRNMP: 1995-2004

Year	No of Intrusions (Boarded)	No of Cases Filed	No of Cases Dismissed	No of Cases Archived	No of Offences Fined	REMARKS
1995	3	0	0	0	0	All passed through to go to a FAD
1996	3	5	0	5	0	M/B Sto. Nino, 3 cases filed; M/B Glorenz, 1 case filed; M/B Mabuhay, 1 case filed
1997	2	0	0	0	0	All passed through to go to a FAD
1998	3	0	0	0	0	All passed through to go to a FAD
1999	3	3	2	0	1	Chin Vessel paid a fine of P100,000.00 and released; Cases of F/B Panda (Taiwan) and Berhin ng Fatima were dismissed for lack of evidence
2000	7	3	1	1	1	Five passed through to go to a FAD; F/B Jun VII case was dismissed for lack of jurisdiction; F/B Jun VII Case No. 2932 was archived
2001	11	0	0	0	0	One ran aground going a FAD; Ten passed through to go to a FAD
2002	6	4	4	0	1	Ferried guest of Southern Cruise; Three released vessel passed through to go to a FAD; F/B Jun V case dismissed for lack of jurisdiction; The 119 Chinese poachers were released on Oct 4, 2002 after PHP2,000.00 fine each and USD50,000.for 6 vessels
2003	9 intrusions (12 boats)	1	0	0	0	Seven passed through to go to a FAD; One (QB VII) run aground; One rescued QB VII.
2004	12	0	0	0	0	Vessels passing through to go to a FAD, One was delivering provision to another boat took shelter in a bad weather.
Total	62	16	6	6	10	

Table 17 Species Diversity in TRNMP: 1982-2004

Year	Fish	Coral	Algae	Sea-grass
1982	379	260		
1991			43	7
1992			43	7
1995			79	5
1996		260		
1998				
1999				
2000	382		63	4
2001	379	372		
2002				5
2003	247			5
2004	245			5

Source: Arquiza and White 1992 and 1996, Draft Management Plan of TRNMP 2000-2001, 2003-2004 WWF Annual Report

The data from the fish surveys show drastic decrease in fish diversity if the 1982, 2000 and 2001 data are compared with those of 2003 and 2004. There are 379 recorded in 1982 and 2001 respectively. But this number is reduced to 245 in 2004 or a difference of 134 species. The opposite occurs in corals. Diversity increases from 260 species in 1982 and 1996 to 372 in 2001. The same trend can be noted with algae. But the diversity of sea-grass has been fluctuating between seven and four species.

In spite of the long-term observation that data afford, the trend cannot be firmly established. Data gaps are too many for a firm trend to emerge. Besides variations in diversity values might be due to observers' error, differences in the site surveyed and methods employed. Different groups carry out the surveys at various times.

#### Cover of Benthic Community

The survey of the cover of benthic community is first done in 1984 for hard coral, soft coral and substrate (Table 18). For dead coral, the first survey is in 1993. The trend is fluctuating overtime. A high percentage cover is recorded in 1993 for hard coral at 65 percent. But this percentage drastically dropped to 30.8 in 1999 undoubtedly due the El Nino in 1998. Recovery is noted afterwards with highest post-EL Nino percentage cover recorded in 2004. Similar trend can be said on soft coral. The impact of the El Nino can be also seen in the drastic increase in percentage of dead coral from 1999 to 2002. There are discrepancies in data due to observers' error and variations in survey site selection and methods used

Table 18 Cover of Bethnic Community in TRNMP: 1982-2004

Year	Hard Coral	Soft Coral	Dead coral	Substrate
1984	46.3	7.7		46.0
1989	22.5	3.5		74.0
1992	33.1	8.0		50.0
1993	65.0	0.0	2.0	36.0
1996	59.3	12.0		28.7
1997	46.2	15.0	2.4	24.2
1998	41.5	15.3	0.6	28.6
1999	30.8	8.5	5.1	22.4
2000	31.9	9.1	13.6	27.5
2001	32.3	7.7	17.4	20.8
2002	33.9	8.9	9.2	25.5
2003	30.2	10.4	3.1	31.1
2004	39.6	11.8	4.6	30.3

Source: White, Calumpang, 1993. Arquiza and White 1999, 1997-2004 WWF Annual Report

#### Fish Biomass

Fish biomass for pelagic and demersal species has been annually measured from 1998 to 2003 (Table 19). Their biomass has been fluctuating. For demersal species, the lowest recorded biomass is 22.93 MT per square kilometre in 1998 and the highest is 137.33 MT in 2002. For pelagic species, the lowest biomass is 23.02 MT per square kilometre in 1999 and the highest is 185.80 in 2000. The drastic fluctuation of values cannot be readily elucidated. It must be due to bleaching, change in plankton productivity and sedimentation rate. For pelagic fishes, water movement and their migratory activities might be the factors affecting biomass. Because the biomass of indicator species is only measured in 2004, no trend can be observed.

Table 19 Fish Biomass in TRNMP: 1998- 2004

Year	Demersal	Pelagic	Indicator
1998	22.93	31.79	
1999	65.49	23.02	
2000	86.58	185.80	
2001	66.58	33.73	
2002	137.33	127.54	
2003	80.23	42.45	
2004			288.0

Source: 2003-2004 WWF Annual Report

## Commercial Fish Biomass and Density

The biomass of commercial fish is first measured in 1998 when it registers 56.76 MT per square kilometre (Table 20). There is a dramatic increase in 1999 to 302.82 MT per square kilometre. The increase after the El Nino must be due to increase of food for herbivores. Density of commercial fish is first measured in 1997. It has been fluctuating from a low of 290.91 in 1998 to a high of 757.23 in 1999.

## Microalgae Cover

Microalgae cover has been measured annually from 1997 to 2004 (Table 21). The highest cover is recorded in 1999 with 29.90 percent. The lowest is in 1998 at 0.32 percent. The values have been fluctuating with wide variations. The variations in percent cover values can be related to seasonality in the growth of algae. This factor particularly applies to Sargassum that often dominates the shallow tidal meadows during dry season months. Another reason might be sand shifting that occurs regularly during monsoon shifts. Sand shifting limits the colonization of large sea-grasses and even uproots these. Unfortunately, there are no data on the percentage cover for sea-grasses. There may be also error in the analysis of available data due to incorrect formula and instruments used.

## Indicator Species, Seabirds and Marine Turtles

Cetacean species is used as indicator of the status of marine environment. An inventory of this species has been done between 1992 and 2004. In 1992, the inventory that covers Tubbataha Reef, Cavili and Cagayancillo identifies four species. One species was not identified. In 2000, seven species are identified and one is not identified. However, these data is insufficient to conclude that there is an increase in diversity of cetacean species.

The inventory of seabirds indicates that their population fluctuated since the 1981 baseline survey. But the masked booby is locally extirpated although frigate birds are noted. The data on seabirds have been insufficient particularly on such aspects as reproduction and mortality rates. The variation in existing data is due to difference in research methods used and the season when the research is done.

There is only one report on marine turtle in TRNMP. It is the 1997 DENR Report that notes of five live green turtles, 30 hatchlings and 129 eggs. It also records one adult hawksbill.

Table 20 Commercial Fish Biomass and Density in TRNMP: 1998- 2004

Year	Biomass	Density
1997	-	627.24
1998	56.76	290.91
1999	302.82	757.23
2000	289.25	635.29
2001	78.70	501.37
2002	278.37	462.97
2003	121.28	377.43
2004	166.51	631.00

2004 WWF Annual Report

Table 21 Microalgae Cover in TRNMP: 1997- 2004

Year	Cover
1997	1.29
1998	0.32
1999	29.90
2000	1.15
2001	0.60
2002	11.41
2003	10.95
2004	5.24

2000, 2002-2004 Annual Report

### Local Capability

The last of the objectives of TRNMP is to assist in building local capacity for sustainable resource management in Cagayancillo. The improvement in local capability is seen in the change of livelihood, living standard and the municipality's CRM capability.

#### Livelihood

The four sub-indicators of livelihood are cash income, membership of Cagayancillo Pangabuhian Foundation Incorporated (CPFI), amount of outstanding loan and population size. A positive change is seen in cash income. A survey done for the municipality's Comprehensive Land Use Plan in 2002 registers an average household cash income at PHP2,000.00 per month (Table 22). This amount increased in 2004 to PHP3,812.00 in a UNESCO-sponsored study. The increase is 90 percent in two-year period or 35 percent per year.

Table 22 Data Before and After 2005 on Selected Livelihood Indicators in Cagayancillo

Indicator	2002	2004-2005
Cash Income	PHP2000/month (CLUP)	PHP 3,812/month (Nunez)
Membership of Pangabuhian Foundation	152 (CPFI)	306 (CPFI)
Outstanding Loans	PHP 478,666.02 (CPFI)	PHP710,739.34 (CPFI)
Population Size	6,831 (CLUP)	NA

The CPFI is a cooperative providing livelihood support to the households in Cagayancillo. Its membership increases from 152 in 2003 to 306 in 2005 or about double in two-year period. The total membership in 2005 represents 31 percent of the total number of households registered in 2000 NSO census. The amount of loan taken out from the CPFI correspondingly increased from PHP478,666.02 in 2003 to PHP710,739.34. It means a 66 percent increase of total amount of loan. It is not established how fast the population of Cagayancillo has been growing during the period. Thus, it cannot be determined whether the cooperative membership and the total amount of loan are growing faster than the population.

#### Living Standard

The data on living standard validate whether the increase in cash income is real and translates into improvement of the quality of life. To measure changes in living standard, selected data from NSO census in 2000 and WWF-sponsored study in 2004 are compared. The living standard shows positive change in the eight indicators used. Lot ownership increases from 82 percent in 2000 to 86 percent in 2004 (Table 23). The difference is 4 percent. The increase is even greater in house ownership jumping from 85 percent in 2000 to 95 percent in 2004. The difference is 10 percent. The quality of houses has improved in even larger scale as seen in the type of roof. In 2000, only 58 of the houses have galvanized iron (GI). This percentage rises to 72 percent or 14 percent increase from the 2000.

The utilities that the households enjoy have also improved for many. The users of kerosene lamp for lighting are reduced from 65 percent in 2000 to 50 percent 2004. It means that 15 percent more households benefit from electricity in 2004 than in 2000. The percentage of liquefied petroleum gas (LPG) users as cooking fuel is about the same (11% versus 10%). But toilet ownership dramatically rises from 46 to 56 percent. The ownership of appliance has not changed much. Households with television is about the same (5% versus 6%) but slight increase in noted in refrigerator (5% versus 7%)..

## CRM Capability

While the data on livelihood and living standard point to a positive result, it raises the question whether these can be sustained. One key to such sustainability is the capability to manage well the resource base. Because the households of Cagayancillo rely heavily on coastal resources, investment to strengthen their CRM capability is made. The outcome of such investment is seen in 12 sub-indicators (Table 24). The 2000 and 2005 data on these sub-indicators are compared to measure the change.

Table 23 Data on Selected Living Standard Indicators in Cgayancillo: 2000 and 2004

Indicator	2000 (NSO)	2004 (Sabade)
Households who owned lots	82%	86%
Households who owned houses	85%	95%
Houses with GI roof	58%	72%
Households using kerosene for lighting	65%	50%
Households using LPG as cooking fuel	11%	10%
Houses with water-sealed toilets	46%	56%
Houses with television	5%	6%
Houses with refrigerator	5%	7%

Table 24 Data on Selected CRM Indicators in Cagayancillo: 2000 and 2005

Indicators	2000	2005
Number of CRM ordinances	-	2 ordinances
Number of FARMC formed	-	12 councils
Number of PO organized	1 groups	14 groups
Number of registered fishing boats	-	192 boats
Number of registered fishers	488 fishers	528 fishers
Number of registered fishing gears	6 gears	31 gears
Area planted to mangroves	-	2 hectares
Number of apprehensions for fishing laws violations	10 apprehensions	1 apprehensions
Amount of fines collected from fishing laws violations	PHP 200,000.00	PHP20,000.00
Number of marine reserves established	-	5 sites
Area of marine reserve	-	98 hectares
Average fish catch per unit effort (12 hours using spear)	10 kilograms (Nunez)	15-20 kilograms (Nunez)

The first sub-indicator is CRM-relevant ordinance. There was none in 2000 but the municipal government legislated two in 2005. There was also no FARMC in 2000 but 12 have been organized in 2005. Only one PO operates in 2000 and this number increases to 14 in 2005. The municipal government is able to improve its coastal regulatory system through registration. In 2005, it registers 192 boats, 528 fishers and 31 gears. No boat was registered in 2000 and only 488 fishers and 6 gears.

While no mangrove is planted in 2000, two hectares are reforested in 2005. The number of apprehension for fishing law violation decreases from 10 incidents in 2000 to one in 2005. The decrease is due to lesser incidence rather than weaker enforcement. The result is the reduction of the total amount of fines collected from PHP200,000.00 in 2000 to PHP20,000.00 in 2005. While there was no marine reserve in 2000, there are five in 2005 with a total area of 98 hectares. Partly because of these actions, the amount of fish catch per unit effort (12 hours using spear) increased from 10 kilograms 2000 to 15-20 kilograms in 2004.

#### COLLECTIVE CONCLUSION OF THE RESEARCH GROUPS

The investment put into TRNMP in the past 15 years is high. The investment is in the form of management input that includes legal instruments, organizational mechanisms, systems, funds, personnel, training, equipment, facilities and information. From the data on management capability and partnership, the workshop participants recognize the expanse of the management input and the expense needed to maintain it. They also acknowledge that a single group or institution cannot provide all the required management input. A wide network of stakeholders where everyone gives a share is needed.

But management input is at present not sufficient. There is a need for a legal instrument that will rationalize the operation and management of TRNMP. There is a capital outlay that needs definite source of funding. The amount of users' fee collected, the only regular source of funds, does not fully cover even just the operational cost. There is the need to upgrade human resources so that the management of TRNMP can at par with the best in the world. While the stakeholders of TRNMP have provided active participation and contribution in various forms have been made, their potential is not yet fully harnessed. Doing so requires not only the expansion of the stakeholders' base but also the strengthening of the network and systematisation of stakeholders' management.

In spite of these weaknesses, the management input and stakeholders' participation are bearing fruits. The data on habitat protection indicators reveal that conservation initiatives seem effective in conserving biodiversity. The decrease in species diversity, algae, benthic cover and fish biomass are apparently due to natural and physical processes not human activities. Among the significant factors are the 1998 El Nino, sand shifting and strong water movement during monsoon shift.

The level of biodiversity conservation attained in TRNMP has not sacrificed socio-economic development. They are in fact the twin fruits of TRMNP management. The livelihood and living standard in Cagayancillo have appreciably improved. The fishing rights that the Cagayancillo fishers gave up in TRNMP seems to have been offset by the higher fish catch in the fishing grounds around their islands. The small fishers using hook and line, spear and net are the main beneficiaries. Sources of income have diversified partly through the rising membership of CPFI. The loan that the members obtained serves as capital for general merchandise (sari-sari) stores, poultry, livestock and fishing.

There are still aspects that must be worked out to enhance socio-economic development. There is a need for cold storage as a post harvest facility for the rising fish catch. The absence of ferry hampers the access to the market to turn the catch into cash. While the other aspects of living standard are improving, health remains a serious problem due to lack of services and medicines. It is also not known whether the fishers displaced by the closure of TRNMP to fishing are among those who benefits from the rising living standard. These fishers must be the one to benefit the most to meet aspiration for equity in the TRNMP vision.

Nonetheless, it is clear that the TRNMP have successfully pursued sustainable development if it means improving the socio-economic conditions while securing the natural resources base for future generations. Using these finding, the participants look into the agreements made in the 1998 stakeholders' workshop to check if these are all met. The result is positive.

## FUTURE ACTIONS

To correct the weaknesses and boost further the attainment of the objective, the participants set 28 actions. Eight aims to serve the objective on management capability and five on partnership (Table 25). There are also five actions are on habitat protection and 10 on the local capability.

The actions on management capability are categorized into two: organization and systems and equipment, facilities and personnel. Each category has four actions. A study on improving the organizational set up particularly of the TPAMB is one of the actions on the first category. The rest are for the improvement of the existing systems especially the enforcement and sustainable financing systems. The second category itemizes the equipment and facilities that has to be acquired or augmented. The equipment includes short-wave radios and twin-engine patrol boat while the mooring buoys with embedment system is one of the facilities.

Partnership calls for the intensification of IEC, implementation of a rational program, expansion of stakeholders' network and diversification of participation in decision-making process. The partnership strategies that proved successful in TRNMP are also offered should expansion areas be established. In habitat protection, the actions

Table 25 Recommended Actions in TRNMP First Participatory Evaluation: 2006-2012

Management Capability
<p>Organization and Systems</p> <ul style="list-style-type: none"> <li>• Study mandates, organization, objectives and working plans to determine the best organizational set-up for TRNMP to attain better result</li> <li>• Study and improve systems on enforcement, planning, personnel incentive, volunteerism and sustainable financing. The planning system must afford the regular review and updating of the management plan to keep it in step with new opportunities and challenges. The personnel incentive system must be able to reward conservation work with political and professional gains. The volunteer system must harness the contribution of universities including its students.</li> <li>• Organize workshops on system improvement: enforcement and sustainable financing. The enforcement workshop will generate strategies to make illegal activities very costly to the violators and embed it with security and safety component. The sustainable financing s workshop must develop new revenue sources and earning approaches. It must capture better resource rent.</li> <li>• Work for the legislation for annual provincial allocation for TRNMP</li> </ul> <p>Equipment, Facilities and Personnel</p> <ul style="list-style-type: none"> <li>• Purchase of the following equipment: long range radio, short-wave radios, outboard motor and twin-engine patrol boat</li> <li>• Install mooring buoys through embedment system</li> <li>• Repair and extend ranger station</li> <li>• Hire technician for the short-wave radios</li> </ul>
Partnership
<ul style="list-style-type: none"> <li>• Intensify IEC on the importance of TRNMP especially through youth education</li> <li>• Constitute a rational IEC program with long-term goals</li> <li>• Expand the network of partners to such entities as Shell and Naval Reserve Unit</li> <li>• Assist expansion areas in applying the principle of benefit-and-cost sharing in park management</li> <li>• Diversify participation in decision-making processes</li> </ul>
Habitat Conservation
<ul style="list-style-type: none"> <li>• Standardize research methodology, format and parameters. Researchers can be oriented on the standards.</li> <li>• Review the existing parameters used for consistency and include more management-relevant and measurable parameters.</li> <li>• Conduct connectivity study of species and ecosystems and impact of natural and human activities.</li> <li>• Establish data base for all researches on TRNMP</li> <li>• Fill up data gaps and validate past research findings</li> </ul>
Local Capability
<p>Livelihood Support</p> <ul style="list-style-type: none"> <li>• Expand socio-economic benefits including the operation of a cold storage plant and the planning, implementation and promotion of a municipal tourism program</li> <li>• Study the effects of MPA on seaweed farming</li> </ul> <p>Municipal Coastal Management</p> <ul style="list-style-type: none"> <li>• Regulate FAD and generate revenue. Conduct a study as technical input to legislation</li> <li>• Support to strengthen marine reserve management through installation of marker buoys and acquisition of small patrol boats and binoculars.</li> <li>• Provide materials on TRNMP and marine environment in general to schools</li> <li>• Conduct research on the provenance of the name Tubbataha for ethnic pride</li> <li>• Review baseline demographic and habitat characteristics (1974 data and photograph)</li> <li>• Rationalize socio-economic monitoring and study how the fishers displaced from the closure of Tubbataha Reef improved.</li> </ul> <p>Municipal Health</p> <ul style="list-style-type: none"> <li>• Strengthen waste management system</li> <li>• Conduct a study to improve the health system and work for better services</li> </ul>

concentrate of improving the research system. It calls for the standardizations of methodology, format and parameters, conduct of special studies and establishment of database for all researches on TRNMP

The upgrading of local capability has the most number of actions. These are under three categories. Included in the category of livelihood support are the operation of a cold storage and municipal eco-tourism program. It also proposes a study to ascertain the impact of MPA on seaweed farming. The category of municipal coastal management has the regulation of FAD, installation of marker buoys and rationalization of socio-economic monitoring as among the actions. In municipal health, the actions are the strengthening of existing solid waste management system and health service delivery.

### CONCLUDING NOTES

The stakeholders of TRNMP have reconvened to check the progress that has been achieved in fulfilling the vision that they set seven years ago. They dig up the data from various sources and stored in various forms and places. These data provide solid answers to their questions. The data provide a startling but pleasant revelation. The vision has been substantially achieved although there are yet more tasks to be done. They determine the need and nature of the tasks. These tasks will carry the stakeholders to the second management cycle that began after the evaluation. The achievement in the first cycle is made possible through the shared effort of a wide-range of stakeholders. They will again play similar role in the second cycle for it to succeed. The accomplishment of the first cycle does not only certify the success of TRNMP but also of stakeholdership as a management paradigm.

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ATTACHMENT 1

First Participatory Evaluation of Tubbataha Reef National Marine Park

Program of Activities

Time	Activity	In-charge
April 6		
9:00-9:15	Opening	
	Welcome Remarks	Provincial Rep
	Messages	DENR Rep
		WWF Rep
9:15-9:45	Orientation: Evaluation Rationale, Objectives and Activities	Raoul
9:45-10:00	Q&A	
10:00-10:30	Review of the Management History of the Seascape and Agreements in the 1998 Stakeholders Planning Workshop	Ed and Maribel
10:30-10:45	Break	
10:45-11:15	Tubbataha Reef Protected Seascape Management Plan and Accomplishments	Angelique
11:15-11:30	Q&A	
11:30-12:00	Defining the Tasks of the Core Team: TOR Generation	All
12:00- 1:30	Lunch	
1:30-2:15	Selection and Organization of Core Team	All
2:15-3:15	Review, Selection and Categorization of Questions, Indicators and Information Sources	All
3:15-3:30	Break	
3:30-4:45	Small Group Workshop: Strategic Planning on Data Collection: Collection Methodology, Schedule and Logistics	All
4:45-5:00	Wrap-up	
Day 2 April 7	Information Collection	
Day 3 April 8		
9:00-12:00	Information Collection Preparation for Presentation of Results	All
12:00-1:30	Lunch Break	
1:30-2:30	Presentation of Results	
2:30-3:30	Integration of Results and Identification of Lessons Learned (Successful Strategies and Gap Identification)	All
3:30-3:45	Break	
3:45-4:30	Formulation of Recommendations to Enhance Successful Strategies and Fill in the Gaps	All
4:30-4:45	Review of Consolidated Project Report and Debriefing	All
-5:00	Closing	

