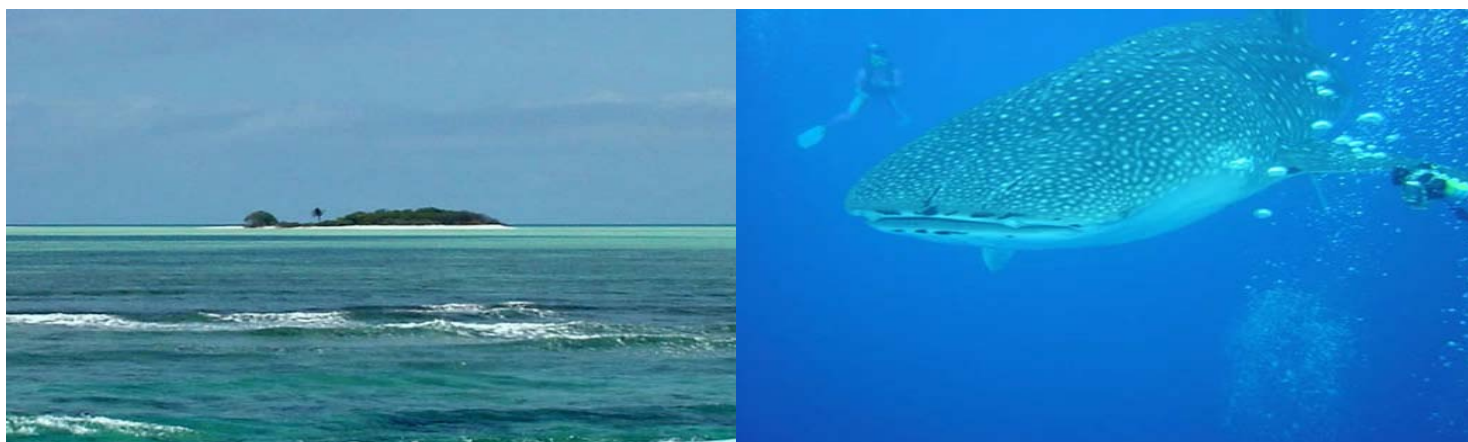


THE NATURE AND ROLE OF LOCAL BENEFITS IN GEF PROGRAMME AREAS

CASE STUDY



Philippines

Conservation of Tubbataha Reef National Park Project



July 2004

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Tubbataha Reefs, Philippines¹.



Authors

Dr. David M. Todd (Case Study Manager and Team Leader) GEF Office of Monitoring & Evaluation, Washington DC, USA. dtodd@thegef.org

Enrique A. Nuñez, Jr. Consultant

This report has been prepared for the Office of Monitoring and Evaluation of the Global Environment Facility (GEFME). The findings, interpretations, and conclusions expressed in this paper do not necessarily reflect the views of the GEF Secretariat, UNDP or the Government of Philippines

¹ Front cover pictures courtesy of http://www.artprotec.co.jp/~marine/pic_tubbataha.htm and page 2 - Enrique Nunez.

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LIST OF ACRONYMS

BFARMC	Barangay Fisheries and Aquatic Resources Management Council
CATCO	Cagayancillo Trainer Corps
CBO	Community-Based Organizations
CLUP	Comprehensive Land Use Plan
CPFI	Cagayancillo Pangabuhi-an Foundation, Inc.
CRM	Coastal Resource Management
DENR	Department of Environment and Natural Resources
DOT	Department of Tourism
DSWD	Department of Social Welfare and Development
ECAN	Environmentally Critical Areas Network
FARMC	Fisheries and Aquatic Resources Management Council
FGD	Focus Group Discussion
GEF	Global Environment Facility
IEC	Information and Education Campaign
KKP	Kabang Kalikasan ng Pilipinas
KSK	Kilusan Sagip Kalikasan
LGU	Local Government Unit
LOP	Livelihood Operations Plan
NBSAP	National Biodiversity Strategic Action Plan
NGA	National Government Agency
NIPAS	National Integrated Protected Areas System
MPA	Marine Protected Area
PA	Protected Area
PAMB	Protected Areas Management Board
PCSD	Palawan Council for Sustainable Development
RAC	Rural Agriculture Center
RED	Regional Executive Director
SEP	Strategic Environmental Plan for Palawan
SIL	Summer Institute of Linguistics
SSLME	Sulu-Sulawesi Large Marine Ecosystem
TMO	Tubbataha Management Office
TPAMB	Tubbataha Park Management Board
TRNMP	Tubbataha Reef National Marine Park
WWF	World Wildlife Fund

CURRENCY

P	Philippine Peso (At the time of the study, there were about P55 to one US\$)
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GEF M&E Unit Study of the Nature and Role of Local Benefits in GEF Program Areas

The Case of Tubbataha Reef National Marine Park, Sulu Sea, Philippines

Enrique A. Nuñez, Jr.
Member, M&E Evaluation Mission Study Team

And

Dr. David Todd, Team Leader and Senior Monitoring and Evaluation Specialist
Global Environment Facility

Introduction

Tubbataha Reefs is one of the world's richest and most diverse marine ecosystems located at the center of the Sulu Sea in the Western Pacific. It is the largest coral reef atoll and the only marine park in the Philippines. The Tubbataha Reefs National Marine Park (TRNMP) covers some 32,200 hectares while the entire reef complex covers an area of 10,000 hectares. It is about 150 kilometers southeast of Puerto Princesa City and is part of the municipality of Cagayancillo Islands, about 80 kilometers northeast in the Province of Palawan.

Tubbataha Reefs is one of the world's most diverse ecosystems. Marine plants and animals are extremely diverse with at least 379 species of corals belonging to at least 50 families (NRMC, 1983; Palaganas et al., 1985). It is also home to numerous important pelagic fish species including tunas, mackerels, and jacks; and at least six (6) species of sharks, at least four (4) species of dolphin; and two (2) species of whales (Tubbataha MSP Project Document, 2000). Well-known to scuba divers from around the world and to fishers in the Philippines, Tubbataha Reefs and its rich ecosystem provides significant benefits to the Philippines and has become a high conservation priority for the Government of the Philippines.

In 1988, the Tubbataha Reef National Marine Park (TRNMP) was established. In 1992, TRNMP was designated as one of the initial components of the NIPAS Act (National Integrated Protected Areas System) and a multi-sectoral approach in managing the TRNMP was established through the Tubbataha Park Management Board (TPAMB). In 1993, it was inscribed in the World Heritage List for its globally significant biological diversity indicating the global concern of protecting the reef system.

Food and aquarium fish catch in coral reef areas in the Philippines comprise about 9 percent of the total catch in the country and in some areas; the fish catch from reefs even reaches more than 70 percent (Arquiza and White, 1999). These benefits in terms of

fisheries and tourism revenues can be sustained and the effects of global environmental hazards such as climate change and biodiversity loss be reduced if a sustainable management strategy can be implemented.

I. Overview of the Investment

Despite the establishment of the TRNMP, the threat to marine resources in Tubbataha continued. Incidences of illegal fishing and use of destructive fishing methods were reported and continued, despite the ban on fishing and other extractive activities in Tubbataha associated with its proclamation as a national park in 1987. From 1995, when the national government started to maintain its presence in the park, records showed that illegal fishing in the Reefs remained a threat due to irregular protection efforts. In 1999, two fishing vessels from Taiwan and Mainland China were caught for park intrusion and illegal fishing respectively. Since 1995, cases of illegal fishing by local fishers have been recorded and the impact of this activity compared with TRNMP's conservation objectives has been assessed (Annex 1).

The Conservation of the Tubbataha Reefs National Marine Park and World Heritage Site Project, which has a major focus on local communities, covers a period of 4 years from September 2000 to October 2004. The project received a Medium-Sized grant (\$1.7 million) from the GEF (through UNDP) aimed to intensify management actions in TRNMP. As a co-financing scheme together with Packard Foundation, WWF and contributions from NGOs, National Government Agencies and LGU members of the TPAMB, the project hopes to bring together these institutions to ensure effective conservation and management of the TRNMP and reduce the impact of illegal fishing on the precious reefs.

With the continued degradation of the marine resources in Tubbataha, immediate conservation and environmental management efforts were needed. The overall objective of GEF's conservation initiative is to protect the unique and relatively pristine condition of the globally significant biological diversity and ecological processes of the TRNMP and to manage the TRNMP and the surrounding area on a sustainable and ecologically sound basis.

The objectives of the conservation efforts were pursued through the implementation of the approved management plan for TRNMP. The Government of the Philippines is committed to conserving biological diversity as reflected in the National Biodiversity Strategic Action Plan (NBSAP) it has adopted. It is expected that through the conservation of biodiversity in TRNMP, improved knowledge and management systems; research and development; better information and institutional support mechanisms; sustainable use of biodiversity and equitable sharing of the benefits of biodiversity shall be attained.

Also, the Government of the Philippines is committed to establishing a nationwide system of protected areas through the National Integrated Protected Areas System or the NIPAS Act of 1992. The NIPAS Act provides for the establishment and management of

protected areas across the Philippines. A PAMB composed of relevant stakeholders shall develop and endorse the management plan.

It is anticipated that the conservation efforts through the GEF-UNDP Medium Sized grant shall result in the implementation of a PAMB approved management plan, decreased use of fishery resources in the reefs, better stakeholder participation in the management of the TRNMP, reef destruction stopped through increased patrolling and enforcement of fishery and tourism regulations.

II. Overview of Global Environmental Achievements

A. Tubbataha Reefs

The TRNP is listed as a World Heritage Site by UNESCO and its global significance to biodiversity cannot be ignored. Tubbataha Reefs is located within the Sulu-Sulawesi Large Marine Ecosystem (SSLME), the region bounded by Sabah, Malaysia, Philippines and Indonesia. This region is an important area for marine conservation and environmental management (Tubbataha MSP Project Document, 2000). However, prior to the establishment of the TRNMP in 1988, the precious corral reefs were faced with major threats, such as destructive fishing operations by local fishers and those from neighboring countries. Even after the declaration of the TRNMP, illegal fishing, poaching and the use of illegal methods remained as threats. In addition, just like any other threatened coral reefs in the world, it requires immediate environmental management and conservation efforts.

The SSLME, the area where Tubbataha is located harbors at least 450 species of corals, whereas the entire Caribbean Sea has only 50 species (Miller, 1994). The area has outstanding natural resources, rich biological diversity, critical marine habitats, and is important to regional economies. It has for years attracted local and international tourists and is believed to have enriched fishery resources in the Sulu Sea (Dygico, 2003). With a very high biodiversity, fish biomass in TRNMP, the highest recorded in the Philippines based on WWF Philippines monitoring survey, is 120 metric tons per square kilometer four times (30 mt/sq km.) for an average health reef (Dygico, 2003). In addition, the two coral atolls oriented southwest to northeast, separated by an eight-kilometer wide channel, support a variety of birds and are critical habitats for resident and migratory seabirds along the Southeast Asian flyway.

The location of Tubbataha Reefs and the currents of the Sulu Sea make the area an excellent seeding area for fish species. The area is considered as a large nursery area and larval values of Tubbataha are significant. Fishers and residents in Cagayancillo, the closest human settlement to Tubbataha, agree that they benefit from the fish larval spills from Tubbataha to the coastal waters in Cagayancillo. According to stakeholders, during a consultation held in Cagayancillo and Puerto Princesa in May and June 2004, the environmental management and conservation efforts in the TRNMP have resulted in a number of changes since conservation efforts began in the early 1999. Stakeholders agree that there are increased fish stocks, increased revenues from tourism industry,

reduction in illegal fishing activities in Tubbataha and Cagayancillo, improved stakeholder participation and improved LGU services in Cagayancillo due to increased revenues from users' fees and environmental protection and conservation efforts in Cagayancillo.

B. Cagayancillo Islands

Cagayancillo is the closest human settlement from Tubbataha. It is a municipality of 31 islands and islets comprising 13 barangays or villages. The islands are part of an extensive coral atoll system. Coral reefs in most areas are degraded due to destructive fishing method. Fishers say that fish abundance is less than one-third of what it was 20 years ago. This encouraged local fishers to venture to outlying islands of Cavili, Arena and Tubbataha. (Arquiza and White, 1999). However, the situation has changed with the environmental management interventions introduced through the GEF project, such as the establishment of marine protected areas, local government fishery ordinances, enforcement activities, livelihood activities and information dissemination activities. These activities, according to residents, have brought about changes to Cagayancillo.

According to the Cagayancillo Comprehensive Land Use Plan, the municipality has identified 15 (53,110 hectares) fishing grounds. Sultana shoal is the largest fishing ground with an estimated 13,044 hectares. Most of the fishing grounds are along coral reefs that are the main breeding areas of fish.

In a multi-stakeholder consultation organized by the municipality of Cagayancillo and WWF in May 2004, focus group discussions were held with local fishers and key interviews were conducted with local residents and fishers. There was broad agreement that fish stocks have increased and coral condition has improved. These changes were attributed to the establishment of marine protected areas or marine reserves in five (5) barangays or villages covering 98.7 hectares of fishing grounds and associated law enforcement activities in Tubbataha and Cagayancillo.

In a FGD conducted with fishers and seaweed farmers, participants agreed that there is a marked increase in fish stocks in Cagayancillo because of conservation and enforcement activities through the GEF project. For a 12-hour fishing effort, they could catch about 15-20 kilos versus 10 kilos before conservation and enforcement began. Interviews with some part-time fishers suggest that for a 3-hour fishing effort, they would be able to catch about 20 kilos of fish now, compared with 10 or 11 kilos earlier. Others, such as spear fishers would catch 5 kilos for a three-hour fishing effort since 2001 compared to 2 kilos from 1998-2000.

The Municipal Agriculture Officer indicated that his office started to gather information regarding fish catch only in 2000 and that the figures have not been regularly updated. The only available data provided by the Municipal Agriculture Office regarding municipal fish production was estimated at 354.84 metric tons per year in 2000. Average catch per fishers per fishing activity was 4.26 kilos in 2000. Commercial fish production,

that includes tuna and anchovy species, was estimated at 80,000 tons per year (Cagayancillo CLUP, 2001).

Cagayancillo has a total population of 6,348 (2000), with 947 households. The local government projects that the total number of households will increase to 1,165 by the end of 2004. Mean household income is P3,812 per month or P45,744 per year. Some 45% of the total households engage in fishing, while 75% practice seaweed farming (2001-2010 Cagayancillo Comprehensive Land Use Plan)

III. Local Benefits

Local benefits have been defined in the study as including those project outcomes which, directly or indirectly, have positive impacts upon people and ecosystems within or adjacent to project areas, and which provide tangible gains, present and future, in the livelihoods of communities and to the integrity of ecosystems (GEF Inception Report 2003).

Stakeholders pointed out during interviews and group discussions in Cagayancillo and Puerto Princesa that the environmental management interventions introduced since the project started have resulted and will continue to result in benefits, which will eventually lead to improvements in livelihood capital and ecosystems in Tubbataha and in Cagayancillo.

The following is a summary of local benefits of the GEF project:

A. Improved Access to Natural Capital

Improved Fishery Resources

- The project resulted in increased fish abundance in the areas within and around Tubbataha. WWF attributes the increase in fish stocks in the area due to the different project elements, particularly the enforcement activities of the rangers, monitoring, community participation in projects and activities and information dissemination campaigns. According to WWF officers in Manila, fish abundance before the project was somewhere around 60 tons per square kilometer and now it is about 150 tons per sq. km.
- There is also marked increase in fish stocks in Cagayancillo. During an FGD with fishers, they revealed that for a 12-hour fishing effort, they could catch about 15-20 kilos versus 10 kilos before conservation and enforcement began.
- Cagayancillo residents observed an increased presence of different types of fish species in their coastal waters, namely rompe, tanguigue, suran, talakitok in the last five years. They also pointed that the diversity of aquarium fish population increased in their coastal waters, particularly in the marine reserves and they see this as a potential for future economic gain in aquarium fish trade.

- There are more clams available especially in the reserve areas of Sitio Cavili, Isla Langisan, Bonbon, Balabag, Talaga and Nusa.
- Residents and local law enforcement officers also pointed out that there is a reduction in the use of destructive fishing methods and activities. During the multi-stakeholder consultation and key interviews in Cagayancillo, residents from coastal barangays have noted that compared to before the project started, they seldom hear explosions in the coastal waters. In addition, accounts from deputized coastal law enforcers such as the Kilusan Sagip Kalikasan or Movement to Save Nature (KSK) noted that there is a reduction in the number of illegal fishers caught and fishing paraphernalia confiscated. Although the Municipal Agriculture Office was not able to present records of cases of illegal fishing, it pointed out however, that most of the illegal fishers were non-residents. The patrol boats the Municipality uses to enforce fishery laws in its waters are no match against bigger boats, but their efforts are enough to warn off many of the illegal fishers. Furthermore, it is only in recent years that the Municipal Agriculture Office began inspecting fish landings and fishing gear used.
- According to Mayor of Cagayancillo, there is increased fish catch because of the project. He recounted how two women visited him in his office once, thanking him for the changes that were taking place. The women told him that their husbands, who are spear fishers, no longer have to stay for long hours to be able to gather enough fish. A previous four to five hour fishing activity is now reduced significantly because of increased fish stocks in the waters of Cagayancillo.
- The mayor further added that those who complain are mainly illegal fishers who use cyanide and compressors. Through the project, the LGU was able to confiscate a number of compressor machines and stopped the use of active fishing gears within their municipal and communal waters.
- Interviews with project staff, local residents, and FGDs with the different stakeholder groups such as a women's association suggested that many of the illegal fishers are "dayuhans" or outsiders. This was validated by a socio-economic survey on illegal fishing commissioned by TMO as part of the UNESCO project, shown in Table 1. The study showed that the respondents perceive that most of the illegal fishers are from Cebu province, in central Philippines (R. Subade, 2004). Although this claim should be accepted with some reservation, due to the possible bias of respondents, it does seem that the waters covered by the project are indeed a major national and even international resource.

Table 1 Perceived Origin of Illegal Fishers (R. Subade, 2004)

Origin of Illegal Fishers	Frequency	Percent
Cebu	49	48.0
Negros	9	8.8
Outsiders/Dayuhan	9	8.8
Carles	7	6.9
Cagayancillo	7	6.9
Nusa	5	4.9
Iloilo	4	3.9
Talaga	2	2.0
Panay	1	1.0
Bohol	2	2.0
Visayas	1	1.0
Manila	1	1.0
China	1	1.0
No Entry/No Answer	4	3.9
	98	96.1
Total	102	100.0

Establishment of 5 Marine Reserves or Marine Protected Areas and a Bird Sanctuary in Cagayancillo

- The establishment of five marine reserves in Barangays Nusa, Talaga, Balabag, Calusa and Sitio Cavili has resulted in increased fish stocks and improved coral condition in these areas.
- Protection, conservation and enforcement activities in Tubbataha encouraged Cagayanons to develop their own marine reserves or marine protected areas (MPAs) in Cagayancillo. The community became aware of the benefits of environmental conservation and management in Tubbataha and wanted the same initiatives to be replicated in their coastal waters through the establishment of barangay-based marine reserves.
- In 2002, a bird sanctuary was established in Cavili Island. The uniqueness of the bird sanctuary is that it is located in a small island adjacent to a community. Before the establishment of the bird sanctuary, the community used to gather eggs in the island, however, this is no longer permitted.
- The community is authorized by the TPAMB to collect user fees in their marine reserves in Cagayancillo. Currently, the municipal government of Cagayancillo has established a tie up with the Department of Tourism (DOT) to help them develop the dive tourism in Cagayancillo. Once dive tourism is operational, the marine reserves will serve as an additional income-generating venture for the

Cagayanons as they could now charge fees for diving in their reserves. The bird sanctuary could also be developed as a destination for non-divers.

B. Improved Livelihood Opportunities, Income and Financial Capital

Increased Income Potential from the Ecosystem at the Household level

- Part of the output of the project, according to the WWF staff is the periodic review of the TRNMP Management Plan. One of the objectives of the management plan is to increase the income potential from ecosystems that are being protected. This means that if they can protect the reef and the birds, the Cagayanons would gain from the increase in fish stocks and ecotourism that are the direct benefits being triggered by the project.
- A socio-economic survey was commissioned by the TRNMP as part of a UNESCO project to examine the status of illegal fishing incidence near Tubbataha. The researchers looked at secondary materials, conducted key information and focus group discussions, and household surveys. The results of the survey conducted across 102 respondents (Table 2) in Cagayancillo revealed that destructive and harmful fishing methods, mostly cyanide and blast fishing, are major threats to the sustainable livelihood of the Cagayanons and the valuable marine ecosystems of the Tubbataha Reefs, as well as the surrounding waters in the Sulu Sea (Subade R., 2004).

Table 2.Types/ Forms of Illegal fishing Identified by Respondents (R. Subade, 2004)

Types of Illegal Fishing	Frequency	Percent
Dynamite/Blast fishing/Bongbong	62	60.8
Cyanide fishing/Sodium/Chemicals/Coscoc	31	30.4
Muro-ami/hampas	1	1.0
Tigbe	1	1.0
Use of Lagtang	1	1.0
Compressor	2	2.0
Salap/Sahid	1	1.0
Excessive extraction of shells	1	1.0
Use of fishnets/pakulong	1	1.0
No entry	1	1.0
	102	99.0

Availability of Micro Credit Facility for Livelihood Support through the Pangabuhi-an Foundation

- The establishment of a local credit and finance facility in Cagayancillo made it possible for ordinary Cagayanons to pursue environment-friendly income generating activities. Loans are made available to members of the Cagayancillo Pangabuhi-an Foundation (CPFI). CPFI members are mostly interested in pursuing seaweed farming, live fish trading and aquarium fish trading.
- CPFI also offers P10,000 salary loans to public school teachers and local government employees in Cagayancillo. This type of loan is so far, their best performing loan portfolio at 78% repayment rate compared to other types of loans available (CPFI Annual Report, 2003). The purpose of the loan is to help bridge finance the salaries of teachers and local government employees, since their salaries still come from Puerto Princesa, capital of the Province of Palawan. There are no banks in Cagayancillo and sometimes, during inclement weather, salaries are delayed

Seaweed farming as a viable economic option besides fishing

- It is reputed that the father of the Cagayancillo Mayor introduced seaweed farming to the community. In the 1970s, the selling price of dried seaweed was 75 cents a kilo. Today it ranges between P 23-25 a kilo.
- Seaweed farming is still a growing industry in Cagayancillo and in the Philippines. Supply is not enough to fill industry demand. It has become the main source of livelihood among Cagayanons. Prices of seaweeds are about P7/kilo for fresh seaweeds and P25/kilo for dried seaweeds.
- There are two types of seaweeds, low-grade seaweed and high-grade seaweed for industrial use. Both types of seaweeds are suitable for planting in Cagayancillo. However, many seaweed farmers complain about the recent slump in the seaweed industry in Cagayancillo and they have attributed this to the unavailability of high quality seedlings, diseases and climate change (the early onset of the dry season has affected many seaweed farms in Cagayancillo, damaging their plants before they could be harvested).

C. Improved Social Capital, Equity and Institutional Capacities

Role of NGOs, Community-Based Organizations (CBOs), and other groups in Cagayancillo and Puerto Princesa City

- Critical to the sustainability of projects in the field, specifically in the case of the Tubbataha project, is the collaboration among NGOs, CBOs and other groups who have a stake in the conservation of Tubbataha. Factors that have facilitated the effective implementation of the GEF project in Tubbataha include the

partnerships, collaborations forged, the matching of grants, and sharing of resources. These will need to be sustained and strengthened to pave the way for long-term management efforts.

- Fisherfolk associations and seaweed farmer associations are present at the barangay level. In 2003, there were 561 registered fishers and in 2004, there were 151. These fisherfolk associations are loosely organized and do not seem to aim to set strategic goals. It is clear however, that as a requirement of the Fisheries Code, Barangay Fisheries and Aquatic Reform Management Councils need to be organized, based on the membership of fisherfolk associations.
- The Cagayancillo Women's Federation was organized by the Department of Social Welfare and Development (DSWD) four (4) years ago. In 2001, the members of the federation attended seminars on leadership training and dressmaking sponsored by DSWD. An officer of the Federation stated that at present, it is weak organization and is not involved in any livelihood activity for its members. A dressmaking project proposal submitted to the Pangabuhian Foundation was not approved.
- There are clear indications that women's roles have improved through the project. According to the women's federation, Cagayancillo is a small town where everyone knows each other and treats each other like relatives and close friends. Roles between men and women have remained the same for years. The men still make decisions for the households. When it comes to seaweed farming, from planting to harvesting, the activity is considered as a family activity where every member of the household is involved. Women tie the seaweeds, harvest and usually sell these. According to the women, men do not know how to negotiate and that is the reason women do the transacting with the buyer/trader for their fish and seaweeds. In addition, since the women are more knowledgeable about the needs of the family, they could negotiate deals with the traders or buyers in exchange for their products such as a sack of rice, dry goods, tuition fees and other household necessities.
- Annual meetings of the dive boat operators in Tubbataha regularly discuss how to attract non-divers, such as bird watchers, to go to Tubbataha. Encouraging non-diver tourists is another option to ensure sustainability of conservation and enforcement efforts in the park.
- The TPAMB has provided policy direction and has dedicated itself to providing support to Cagayancillo. As a policy making body of the TRNMP, the TPAMB promulgates rules and regulations, manages the trust fund, develops the management plan, and ensures the implementation of programs as prescribed in the management plan.
- During the stakeholders' consultation, the fisherfolk association claimed that it does not participate in the TPAMB. The mayor, the municipal agriculture officer

and the municipal councilor represent the Cagayancillo stakeholders. The community-based organization (CBO) representing the interests of the Cagayanons is the Tambuli Ta Mga Cagayanons, a cultural/arts group organized by the Summer Institute of Linguistics (SIL). Its President has resided in Puerto Princesa since he was a young boy. Tambuli, he said, is an organization that also looks after the culture and welfare not only of the 7,000 residents in Cagayancillo, but also the 30,000 or more Cagayanons spread all over the coastal communities in Palawan.

Environment and Natural Resources Policies

- Many of the environment and natural resources policies are already in place in Cagayancillo and at the provincial and national levels. These policies and laws facilitated the successful implementation of the project and strengthened the institutional capacities. In the case of the Tubbataha Project, the Cagayancillo Municipal Fisheries Ordinance was approved by the Municipal Council; and Fisheries Code, the National Integrated Protected Areas (NIPAS Law) and the Local Government Code at the national level have contributed to better project implementation, especially by the Local Government.
- The Protected Area Bill for Tubbataha has been submitted to Congress. WWF and other stakeholders believe that once the Bill has been ratified by Congress, government appropriation will ensure the sustainability of the park management. Under the bill, fiscal management of the TRNMP goes to the TPAMB, having its own trust fund.
- Another option, which is also recognized under the proposed bill submitted to Congress, is the expansion of coverage of TRNMP from 33,000 hectares to 87,000 hectares, which will involve other reefs. For the conservation and enforcement efforts to be most effective, the area to be protected should be extended.

Enhanced Law Enforcement

- In Tubbataha, the TMO encouraged its support groups and stakeholders to help in the enforcement of laws. Particularly, the Navy and the Coast Guard have been mobilized to augment the human resources, logistics and financial support available to enforce park rules in Tubbataha, in addition to the TMO's hired park rangers and logistical inputs.
- In addition, the local government of Cagayancillo and the Provincial Government have deputized the Kilusan Sagip Kalikasan (KSK) to help in the enforcement of local and national fishery laws in coordination with the local government, and other agencies, acting as a composite team together with the Philippine National Police and barangay leaders.

Local Government support

- According to the Mayor, the Cagayancillo community was afraid in the beginning that some agencies of government would take over the management of Tubbataha and that the LGU would eventually lose an important source of livelihood and income. People were worried at first. Now, they are receiving their share of the income from users' fees. Since the mayor took office, they were able to receive P435,000 as part of their share in the users' fees.
- With the re-election of the current Mayor, local government support for the conservation and protection of Tubbataha and Cagayancillo coastal resources will be sustained.
- The mayor has been very cooperative with WWF and supportive of the GEF-UNDP projects. During his administration, he has passed several ordinances and resolutions, notable of which is the Cagayancillo Fisheries Code.
- LGU staff and officers, and the barangay officials have also been supportive of the GEF project, as evidenced by their participation in WWF activities and the conservation and environmental protection policies and programs it has developed for Cagayancillo.
- Legally mandated LGU bodies were organized such as the Bantay Dagat (Guard the Seas), the Fisheries and Aquatic Reform Management Council (FARMCs) to augment law enforcement activities of the TMO and TPAMB

D. Improvements to Physical Capital

User's Fees for Farm to Market Road Construction

- Cagayancillo's initial share in the park users' fees amounting to P317,000 was used as capital for Pangabuhi-an's micro-financing projects. A second release of P 117,000 was used for the concrete paving of a farm to market road project of LGU of Cagayancillo. Cagayanons have expressed their support to the LGU and the project since they see a direct benefit of the TRNMP on their welfare and the future of Cagayancillo.

Pangabuhi-an Office Building

- The construction of the building that houses the GEF project in Cagayancillo was built through the project, with counterpart support of the local government. It currently houses the Pangabuhi-an Foundation office and a library. At the end of the project, the facility will be turned over to the LGU.

Transfer of WWF Equipment to the LGU

- The WWF ferryboat purchased through the project will be donated to the LGU at the end of the project. The operations and management of the boat by the LGU is still being discussed and once transferred to the LGU, the mayor plans to use the boat for enforcement activities to augment their two smaller patrol boats.

Purchase of Vehicle

- It was only during the term of Mayor Joel Carceller in 2001 that the LGU was able to purchase one government Jeepney vehicle. The vehicle is being used to improve government services in the rural areas, monitor the road construction and to ferry passengers free. For the first time, aside from bicycles, pedicabs, horses and carabaos, a vehicle was used to ply the narrow roads of Cagayancillo. The purchase of the vehicle, according to an LGU accounting staff, was made possible because of improved tax collection and the income share from the users' fees collected by TMO.

Satellite Phone, Satellite TV and other household appliances

- The municipality was able to acquire a satellite phone last year and another satellite phone service is being operated by a private household at P15 per minute.
- Satellite TVs are also present in Cagayancillo. The municipality has no record as to the number of households with satellite TVs but it was observed that there are about less than 10 in the Poblacion area. Households began purchasing satellite TVs only in the last two years. Residents say that because of improvements in income due to seaweed farming, some residents were able to purchase Satellite TV, karaoke machine, VCD machine, refrigerators and LPG gas stoves, while others have cellular phones, which they use when they go to Puerto Princesa. Globe, a cellular service provider, plans to set up a cellular site in Cagayancillo in the near future.

Computerization of LGU operations

- During the term of Mayor Carceller, the municipality began to computerize its operations to facilitate the efficient delivery of services.

Rural Agriculture Center (RAC) and Municipal Tree Nurseries

- Also during the term of Mayor Carceller, the RAC was established. It houses municipal nursery with forest and fruit-bearing tree species. Reforestation and tree planting activities are being held in Cagayancillo, most of the time during municipal and national celebrations such as the Independence Day celebrations. LGU officers, staff, and community members are involved in tree planting activities in the upland and mangrove areas of Cagayancillo.

E. Improvements to Human Capital

Heightened Awareness

- In the beginning, WWF's environmental interventions in Cagayancillo focused on law enforcement. Acceptance was low and the communities were poorly informed. The Cagayanons felt that it is just another project to stop illegal activities in Tubbataha and Cagayancillo. They had no idea what coastal resource management meant.
- Information, education, and communication activities were conducted in the barangays and with the LGU. Initially, the LGUs also had no knowledge of CRM. After the LGUs and the communities in the barangays were made aware of the project's objectives through the IEC activities, they understood the results of their illegal and destructive activities on coastal ecosystems in Tubbataha and Cagayancillo. According to WWF, a number of residents gave testimonies of their illegal activities and some were crying when they told stories about their illegal activities such as dynamite and cyanide fishing. A former illegal fisher in Cagayancillo and Tubbataha attested to the behavioral changes he has made, which led him to join the Kilusan Sagip Kalikasan (KSK) or Movement to Save Nature, a LGU mandated enforcement group. He said that he was among those disenfranchised groups in Cagayancillo affected by the establishment of the TRNMP. However, his participation in seminars sponsored by WWF paved the way for him to join the KSK and support the environmental initiatives of the LGU.
- IECs were also conducted in schools. WWF organized youth environmental camps in Cagayancillo. They also provided technical assistance on how to plant and rehabilitate mangrove areas, which they did together with students, teachers and fishers. The study team met with a group of youth officers and members of the Cagayancillo Youth Council, the Sangguniang Kabataan (SK), who are presently college students in Puerto Princesa, having spent their high school and elementary years in Cagayancillo. They have all been participants of WWF's IEC seminars. They said that many of the Cagayancillo youth are better aware of the environmental issues, particularly in their community. They are not personally familiar or have never seen Tubbataha, but have heard stories about it from WWF, or from relatives who have visited Tubbataha.
- The youth respondents attributed the improved coral and fish conditions in Cagayancillo to enforcement and awareness raising seminars sponsored by LGU and WWF respectively. SK members in Cagayancillo took part in some of WWF and LGU sponsored activities such as mangrove reforestation and coastal clean-up activities.
- The project had the right ingredients and they were all in place. They only had to explain to communities the ecological importance of Tubbataha. Thus, the

resulting awareness led to better management of the resource. In addition, efficient management and protection of Tubbataha Reef resulted in greater awareness among the local tourists and led to a marked increase in local and foreign visits to Tubbataha.

Greater understanding of benefits of conservation by local community

- There has been an increase in the level of awareness of the community because of the information, education and communication (IEC) activities conducted by WWF within and outside of Palawan. In Cagayancillo, the IEC activities have been very useful in building consensus. Community action in Cagayancillo, according to WWF, can be attributed to the IEC and training activities conducted by WWF.
- Also, WWF notes that local fund and awareness raising activities in Palawan for the Benefit of Cagayancillo and Tubbataha are generating support for the protection and conservation efforts of Tubbataha. Artists and friends of Tubbataha are lending their professional stature to secure goodwill and funds for Tubbataha. The Palawan State University for instance wants to integrate in their curriculum Tubbataha and Cagayancillo experiences as part of their marine laboratory. Mass communication students are also designing IEC activities and campaigns using Tubbataha as their topic.

Improved Management Capabilities of local community members through the development of a Livelihood Operations Plan (LOP) and the establishment of a micro-lending facility.

- A Livelihood Operations Plan was developed to help WWF project staff, in partnership with the LGU of Cagayancillo, to promote sustainable environment-friendly income generating activities, ensure food security, build capacity and competence of resource users and to develop long-term mechanisms for the productive utilization of limited financial resources (Livelihood Operations Plan, 2002).
- A livelihood fund was set up, through the Pangabuhi-an Project, a multi-purpose credit and loan facility. The initial amount of P 1 million consisted of a P500,000 grant from WWF-Philippines (funded by the Packard Foundation) and another P500,000 from the Municipality of Cagayancillo. The fund was managed initially by the Interim Livelihood Committee of the Municipality and transferred to the Cagayancillo Pangabuhi-an Foundation, Inc. (CPFI), a non-government organization. Since its establishment, the CPFI Board and its Chief Executive Officer or Project Manager have made arrangements with the Municipal Treasury for safekeeping of the funds collected from the borrowers, since there are no banks present in Cagayancillo. An account with the Development Bank of the Philippines in Puerto Princesa has been established. An accounting system is already in place to record and audit transactions of CPFI.

- Management capabilities of local community members are being tested through the CPFI. The establishment of the CPFI is the first formal financial institution in Cagayancillo that provides support for a wider range of income generating activities. Loans extended to borrowers are linked to agreements not to pursue environmentally damaging activities.

Improved Tax Collection, Fiscal and Financial Management Ability

- There is increased income due to improved tax collection. The LGU is now collecting taxes and issuing licenses for fishing gear, boats and requiring fishers to register with the Municipal Agriculture Office. The LGU also imposes tax on Cagayancillo products being exported elsewhere. These products include seaweeds and all other marine products. The MAO only recently started collecting fishery data on Outgoing Fishery Products.
- The Municipality has started zoning activities. It has declared some of the previous fishing grounds as seaweed farming zones and anyone planning to farm in these zones must pay for the rights to use the area for this purpose. However, the delineation of seaweed zones and the issuance of rights have been a source of conflicts. At present, the rights would cost a seaweed farmer P100/hectare. To avoid conflicts, the rights are renewable each year and if they fail to pay, another applicant could apply for the rights

Enhanced reputation and pride in Cagayancillo

- During the stakeholders' consultation and interviews, Cagayanons admitted that the project has elicited pride among the community members, particularly since Tubbataha, they say, is well known globally and is part of their municipality's jurisdiction.

Monitoring and Evaluation

- A management effectiveness tool for marine protected areas was developed and prototyped. The project has its own monitoring and evaluation system. However, according to WWF, the challenges at present are how to expand coverage of the protected area as a "no take zone" and the role of communities in monitoring.

IV. Negative Impacts

- Despite increases in fish stocks in Cagayancillo, fishers feel they are not deriving as many benefits as they could, because there is no regular access to markets for their fish catch. An "icer," a commercial fishing boat from nearby provinces such as Iloilo, comes to Cagayancillo to buy fish from local fishers. However, according to fishers, icers do not come regularly and when there are no "icers,"

they can only sell to their neighbors, which, according to fishers do not pay well. In 2003, there were about 26 fishery permits given by the Municipal Agriculture Office to “Icers” and six up to May 2004.

- According to the fishers, they have recommend that an ice plant be established by the LGU or that the WWF project should have constructed an ice plant as part of its livelihood projects for the fisher community, as this would have improved their income. The ice plant would enable fishers to sell directly to markets in Iloilo, the nearest province in Central Philippines, east of Cagayancillo, where prices are high compared to those paid by the Icers and the local market. However, in the Livelihood Operations Plan developed by WWF through the GEF project, construction of an ice plant was not an option. The livelihood options identified in the LOP was based on the socio economic assessment results (2000), informal consultations and FGDs in Cagayancillo. These livelihood options include: salt production, seaweed farming and processing, fish processing, amatong (miracle hole) fishing, salted fish/shrimp making, vegetable production, herbal medicine production, backyard tilapia raising, soap and candle making, sewing/garment making, production of organic fertilizer from chicken manure, center for recyclable waters, coconut fiber production, swine raising, poultry and mat weaving.
- Prior to the establishment of the TRNMP, Mondoñedo Iguana, a local fishers and KSK member and former illegal fisher in Tubbataha and Cagayancillo revealed that a fisher could earn about P1000/ day between 1984-1993. For every trip, each fisher could gather about four sea turtles and during good weather and calmer seas, fishermen would visit 2-3 times a month. They employ the use of legal and illegal fishing methods (Table 2). According to an elder fisher during the FGD, they would go on expeditions to Tubbataha yearly to gather fish stocks in preparation for their town fiestas. Some would also join fish expeditions organized by commercial interests from other parts of the Philippines as crewmembers on fishing expeditions to Tubbataha. When the TRNMP was established, many fishers were silently against the move, as it would result in economic displacement. However, through the years, they eventually welcomed the new approach and changed their minds after realizing Tubbataha’s importance through the seminars conducted by WWF.
- There have been failures of seaweed production recently, due to *ice-ice* (whitening and eventual disintegration of seaweed fronds) and *balahibo* (epiphytes or algal overgrowth) According to seaweed farmers, the WWF support for seedling propagation came at a time when the seaweed industry was experiencing losses.

V. Relationship of Local Benefits and Impacts to Livelihoods

A. Improved health and food security

- It is expected by the LGU and community members that the establishment of the five marine reserves and the bird sanctuary will lead to increased fish stocks and local catches in the waters of Cagayancillo and therefore address food security issues. Also, the continued protection and management activities in Tubbataha, the stakeholders believe, is having an impact in Cagayancillo. They believe that the general concept of coastal resource management in terms of establishing reserve areas for the barangays was influenced by the conservation management activities since the establishment of the TRNMP. It was noted through interviews with fisherfolk, local residents, LGUs, traders and those skeptical about the initiatives of WWF and TMO that there was indeed a noticeable increase in fish stocks and fish catch in Cagayancillo, indirectly because of enforcement activities in Tubbataha and directly because of the establishment of marine reserves in Cagayancillo.
- Improved fish catch alone will not result in improved health conditions and food security. Other indicators are also important and the LGU, WWF and community stakeholders have identified these indicators in the CRM Plan and the Livelihood Operations Plan (LOP). The LOP clearly mentions that one of its goals is to ensure food security through best resource management practices, while the CRM hopes to address issues such as low income, environmental degradation and inadequate socio-economic services and facilities. Both the CRM and LOP through the LGU and the Pangabuhi-an Foundation hope to improve household conditions such as the health and welfare of the community members in Cagayancillo.

B. Improved Income and employment opportunities

Improved Income Opportunities through CPFI

- The Pangabuhi-an Project, as a micro-lending facility is one of the strategic components of the CRM. The micro-lending facility promotes environment-friendly income generating activities within the framework of the Livelihood Operations Plan (LOP) developed by WWF Philippines in 2002. Created and funded under a Memorandum of Agreement (MOA) between WWF-Philippines and the Local Government of Cagayancillo in 2002, the management of the micro-lending facility has now been transformed from a government managed facility under the Livelihood Committee of the Municipality of Cagayancillo, to a local non-government organization called the Cagayancillo Pangabuhi-an Foundation, Inc. (CPFI).

- CPFI has a credit portfolio and a loan extension schedule over a two-year period which are all part of the livelihood operations plan (Tables 3 and 4).

Table 3 Loan Extension Schedule, Livelihood Operations Plan, 2002

Activity to be Financed		Total Borrowers	No. of monthly repayments
1. Seaweed seedling	production	4	3
2. Seaweed Farming		60	3
3. Rice trading		8	6
4. Salt production		4	6
5. Fish/food processing		4	6
6. Vegetable production		6	6
7. Wholesale merchandising		2	12
8. Other enterprises		20	6
9. Special non-livelihood loans		30	3

Table 4 . Credit Portfolio. Livelihood Operations Plan, 2002

Item	Year 1			Year 2			Total	
	No. of Borrowers	Credit Reqt. Per Borrower	Credit Amount Required	No. of Borrowers	Credit Reqt. Per Borrower	Credit Amount Required	No. of Borrowers	Credit Requirement
1. Seaweed seedling production	2	5,000	10,000	2	5,000	10,000	4	20,000
2. Seaweed farming	40	3,000	120,000	40	3,000	120,000	80	240,000
3. Rice trading	4	10,000	40,000	4	10,000	40,000	8	80,000
4. Salt production	2	13,000	26,000	2	13,000	26,000	4	52,000
5. Fish/food processing	2	5,000	10,000	2	5,000	10,000	4	20,000
6. Vegetable production	3	4,000	12,000	3	4,000	12,000	6	24,000
7. Wholesale	1	50,000	50,000	1	50,000	50,000	2	100,000
8. Other enterprises	10	4,000	40,000	10	4,000	40,000	20	80,000
9. Special loans	15	2,000	30,000	15	2,000	30,000	30	60,000
TOTAL	79		338,000	79		338,000	158	676,000

- Pangabuhi-an micro-financing projects charge 3% interest per annum for every loan approved to its members. The loan is open to members 18 years old and above and who have taken up residence in Cagayancillo for 5 years. Membership fee is P100.00. At present, CPFI is trying to access loans from local banks such as the Landbank of the Philippines in Puerto Princesa and has plans to submit project proposals to donor agencies. In its first annual report (October 2002-December 2003), the management has reported that 44.23% of its loans go to sari-sari store businesses, seaweed farming 19.05% and the least are poultry, bakery and gasoline and RTW retail business at 2.38% each (Table 5)

**Table 5 Livelihood or Business Loans Extended to Members by CPFI
(CPFI Annual Report, 2003)**

Livelihood or Business Projects	Number of Borrowers/Loans	Percentage
Sari-sari store	19	44.23%
Seaweed Farming	8	19.05%
Rice trading	5	11.90%
Piggery	3	7.14%
Seaweed Buying	2	4.76%
Poultry	1	2.38%
Bakery	1	2.38%
Gasoline Retail	1	2.38%
RTW Retail	1	2.38%

- As of December 2003, the total number of CPFI members is 152 as against a target of 70. About 103 members availed of loans consisting of 42 business loans and 61 special loans. After fifteen months of operation, the micro-credit facility of CPFI has acquired a total asset of P645,500 about 74% of this amount or P478,666.02 are loan receivables from its 90 members.

TRNMP Users' Fees

- Tubbataha has earned an average of P1.7 million yearly from park users fees since 2000 when TMO started recording visitor arrivals, fees and fines collected. The amount is used mostly for conservation and maintenance of the park. The initial share of P317,000 from park users' fees was given to Cagayancillo in 2003. This amount is to be used for livelihood projects and for the conduct of feasibility studies. The feasibility studies were submitted to the Executive Committee of the TPAMB. They detail how Cagayancillo's share of P317,000 is to be used. Since the initial release, the money has been used by the Pangabuhi-an Foundation as capital for its micro credit facility in Cagayancillo. Since 1998, the TMO has

collected a total of P9.19 million from entrance fees and P271,200 in fines collected (Table 6).

Table 6. Visitor Arrivals and Revenues in Tubbataha (TMO records)

YEAR	NO. OF TRIPS	NUMBER OF GUESTS	ENTRANCE FEES COLLECTED (in PhP)	FINES COLLECTED (in PhP)
1998	26	No Data Collected	Php 92,350.00	none
1999	65	No Data Collected	141,850.00	15,000.00
2000	94	872	1,718,940.21	none
2001	66	692	1,700,533.13	none
2002	59	629	1,386,898.42	15,000.00
2003	72	858	1,697,740.00	231,200.00
2004	75	921	2,347,520.00	10,000.00
TOTAL	457	3,972	9,190,831.76	271,200.00

Implementation of a Coastal Resource Management Plan for Cagayancillo

- Cagayanons have long known that Tubbataha is intended to be a “no take zone.” One strategy identified by the local government and WWF to prevent the Cagayanons from going to Tubbataha despite the restriction is through the development of a coastal resource management plan (CRM) for Cagayancillo. A 10-year CRM plan (2002-2012) was developed to address issues such as low income, environmental degradation and inadequate socio-economic services and facilities (Annex 2) The CRM plan has been developed and managed by the

Municipal Agriculture Office in Cagayancillo to address some of the prevailing socio-economic problems and issues in Cagayancillo (Annex 3). The components of the Cagayancillo CRM plan include environmental management of marine protected areas, resource mapping and zoning, livelihood, law enforcement plan, research and IEC. The municipal government has appropriated P480,000 annually for the implementation of the CRM plan.

- As part of the CRM Planning, resource mapping in Cagayancillo was conducted. WWF assisted the LGU in delineating and mapping its area. As a result, a new map was developed to replace the old 1940s map the LGU has been using. The resource map is useful to the Cagayanons as traditional fishing grounds were delineated. Because of the information generated by the resource map, some barangays proposed a resolution calling for a close and open season for fishing in their barangay marine reserves. This proposal remains pending in the municipal council.
- The local government agencies tasked to implement the CRM Plan are:
 - Enforcement - Municipal Agriculture Office, Barangay Fisheries and Aquatic Reform Councils (BFARMCs), Kilusan Sagip Kalikasan (Movement to Save Nature), and the Philippine National Police.
 - IEC - Cagayancillo Trainer Corps (CATCO)

Seaweed Farming

- By the early 1990s, seaweed farming had replaced fishing as the main source of income of Cagayanons. This change in the pattern of livelihoods from a fishing base towards a concentration on seaweed farming was thought to have relieved pressure on Tubbataha Reefs. Local fishing activity was maintained at subsistence levels while seaweed farming provided the needed cash income. By the turn of the century, about 60% (Cagayancillo Socio-economic Profile, 2001) of the total number of households surveyed in Cagayancillo were planting seaweeds, either as primary or secondary economic activity. Only 4% were engaged in purely fishing activity. Many households are engaged in multi-occupation (Table 7) and farming is a supplementary activity to provide food for home consumption.

Table 7. Distribution of Respondents by Income Source

Income Source	No. of Respondents	Percentage
Fishing only	8	4
Farming only	30	15
Seaweeds only	5	3
Fishing & Farming	32	16
Fishing & Seaweeds	33	17
Farming & Seaweeds	21	11
Farming, Fishing & Seaweeds	69	35
Non-Agri or Non-Marine	2	1
TOTAL	200	100

- However, even with the shift from fishing to seaweed farming, unfortunately, residents noted that destructive fishing operations using dynamite and cyanide by migrants mostly coming from the Visayas continued (Tables 1 and 2). In the socio-economic survey on illegal fishing, most respondents said illegal fishing in the municipality has had a severe impact on their livelihood. Seaweed farmers attributed the poor condition of their seaweed farms to destructive fishing methods (R. Subade, 2004).
- Over the last two years, seaweed farmers and traders have noted the steady decline in seaweed production in Cagayancillo. Some seaweed farmers attribute the decline to pollution brought about by cyanide and dynamite fishing. To them, the *ice-ice* (whitening and eventual disintegration of seaweed fronds) and *balahibo* (epiphytes or algal overgrowth) are the effects of destructive fishing methods. Still, some residents would like to believe in tall tales such that the fate of the seaweed industry was a result of a curse from an old woman who happened to visit the town and foretold the decline of the seaweed production.
- One of the findings of the socio-economic survey in Cagayancillo in 2000 is that illegal fishing in the vicinity is aggravated by the fact that seaweed farming, through very profitable, has its difficulties. In 2000, seaweed seedlings were almost wiped out because of production problems. New stocks were introduced and production recovered, but after four years, seaweed farmers are facing the same problems. Despite this, the Cagayancillo Seaweeds Association and Municipal Councilors expressed optimism optimistic that the industry will still recover. They say that it needs consistent availability of good quality seedlings, proper enforcement of fishery laws regarding illegal fishing, sufficient credit facilities for traders and farmers, more intensive information campaigns on proper seaweed farming, adequate drying facilities and technical support from government agencies and private institutions.

- Two species of seaweeds are being cultured commercially in the municipality, *Eucheuma spinosum* and *Eucheuma cottoni*. The farmers use the floating vertical monoline method in culturing seaweeds. Annex 4 shows that Cagayancillo is the leading seaweed-producing municipality in the province of Palawan having 49.2% (4,800 metric tons) share of the province production. (Armedilla and Castro 1998). At present, according to the Office of the Provincial Agriculturist, 30% of the province production of seaweed is from the municipality of Cagayancillo. In 2001, around 1,420 people are already involved in seaweed farming in the area. The Municipal Government allots each farmer a maximum of one (1) hectare for the said livelihood (TRNMP-TMO-WWF Business Plan, 2004).

C. Reduced Income from Loss of Access to Fisheries and Marine Resources in Tubbataha

- According to the fishers during the FGD conducted in Cagayancillo, the establishment of the TRNMP affected approximately 1500 local fishers and only about 10% of the lost revenues from Tubbataha have been recovered by the fishers through fishing activities in Cagayancillo. There are no exact estimates from previous studies as to how many local fishers were directly affected by the establishment of the TRNMP. The fishers admit that while fish stocks have increased in Cagayancillo, lack of markets limits their capacity to recover loss revenues and improve their incomes. While they see the user fees as benefits derived by the LGU, they expect that this benefit will be translated into services that will improve their livelihoods.
- Also, according to an officer of Tambuli Ta Kagayanen, a local people's organization and a TPAMB representative, the project was not able to completely compensate for incomes lost because of the establishment of the TRNMP. Steps are being taken to improve livelihoods through the CPFI, including the establishment of marine protected areas in five barangays in Cagayancillo, environmental seminars, and the utilization of Cagayancillo's share from the users' fees. There is however, a need to quantify all of these benefits to determine to what extent lost incomes have been compensated.
- While fish stocks have increased in Cagayancillo, and fishers see this as a direct benefit of conservation efforts both in Tubbataha and Cagayancillo, still their income levels have not improved significantly. There are still many fishers in Cagayancillo, but they can sell most of the time only to fellow Cagayanons, which they regard as virtually giving away their catch .
- To be able to recover from the income lost as a result of the establishment of the TRNMP, the fishers suggested during FGDs that:

- An ice plant should be established so they can market their catch to other Provinces, such as Iloilo. Currently, ice boats do not come regularly to Cagayancillo.
- Despite the losses in seaweed farming, they are hopeful that this will rebound and they expect support from concerned agencies to help turn around the seaweed industry.
- CPFI loans should be made available and accessible to lower income fishing households even without collateral. Other stakeholders such as the women's groups, CPFI members and local government employees made the same suggestion.
- Fisherfolk are optimistic that the current mayor will continue to provide sustained local government services that will benefit their children. Currently, they feel that the road projects of the mayor and his other plans for Cagayancillo will bring about better livelihood opportunities.

D. Improved Local Government Support and Services to Spur Economic Activity in Cagayancillo

- The assistance provided by GEF-supported project in Cagayancillo has helped the LGU in its development needs. Cagayancillo is a sixth class municipality with an annual income of P12 million. About 20% of its income is allocated as development funds to support its coastal resource management and infrastructure projects. This amounts to P2.4 million annually, barely sufficient to implement all of the activities it has identified in the CRM and municipal development plan. The Mayor believes that his administration was fortunate to receive support through the GEF project. The support has enabled the LGU improve its services and augment the meager resources of the municipality, particularly in providing livelihood opportunities and improving basic services such as the construction of the farm to market roads. However, the Mayor expressed concerns about the sustainability of the environmental initiatives undertaken by the LGU once the GEF project ends. One basis for optimism among LGU staff and stakeholders about the future of Cagayancillo is that many policies and programs of the LGU, particularly the CRM Plan are already in place. One of the programs under the CRM plan is infrastructure support, whose objective is to improve LGU services and thus help spur economic activity in an environmentally sustainable manner.
- A percentage of Cagayancillo's share from the users' fees (P117,000) was used to construct farm to market roads. Cagayanons have expressed their support for the LGU and the project, since they see it as a direct benefit of the TRNMP on their welfare. Some Cagayanons are hopeful that the road project will result in better benefits for the community in the future. The road as a service to the community by the LGU is viewed by some fishers who were displaced by the establishment of the TRNMP as something from which their children will benefit.

VI. Relationship to Wider Social, Economic and Environmental Processes

Replication of LGU experiences in Cagayancillo

- The passage of the Local Government Code in 1991 and the Fisheries Code of 1998 provided opportunities for more local and institutional response to the challenges of coastal resource management. The local government unit and its partner communities now have the responsibility and accountability to ensure the sustainable management of their coastal resources. The experience of the municipality of Cagayancillo when it passed Ordinance 11 in 2002, otherwise known as the Cagayancillo Fisheries Code and developed the Coastal Resource Management Plan (CRM) for Cagayancillo, and its participation in the TPAMB, could serve as a model to other local government units in the Philippines. The LGU's experiences can:
 - Serve as a basis to provide information on the development challenges, practices on CRM and protected area management that can be studied, addressed, and replicated when appropriate;
 - Enhance other LGUs' understanding of the mandates of LGUs when it comes to efficient and effective service delivery as it is being addressed by the Cagayancillo LGU;
 - Help other LGUs prepare for more effective work and assist them in identifying opportunities for further local policy development;
 - Provide lessons regarding their experiences with NGOs, donor institutions, national government agencies, LGUs and other stakeholder groups.

TPAMB Management Plan

- To prevent illegal fishing from making a comeback in Tubbataha Reef, the TPAMB has come up with several guidelines covering various aspects of conservation efforts. These guidelines could also be a basis for other PAMBs to learn and draw lessons since many of them are already starting to prepare their own management plans in their respective protected areas. TPAMB is one of the first protected areas in the country to have developed its own management plans. TPAMB's experience in protected area and fishery law enforcement is a challenge and will remain a challenge in the coming years. As in other protected areas in the Philippines, illegal activities and other destructive human activities may always lead to the degradation of the park's resources. Annex 5 and 6 respectively show TPAMB Guidelines to Reduce Illegal Fishing in Tubbataha Reef and the TPAMB approved Rules and Regulations in TRNMP.

- There are plans to expand TRNMP to include other Palawan reefs. In pursuing its environmental management efforts in Tubbataha Reefs, TMO has obtained strong support from community leaders in Cagayancillo. They understand the role the TMO played in Tubbataha and this is being built upon by the barangay leaders through the establishment of MPAs and the development of a CRM plan. Last year, community leaders expressed support to the TMO through a municipal council resolution requesting the inclusion of Jessie Beasley reef as part of TRNMP so that it too can be conserved and protected, following reports of frequent illegal fishing in that area.

Better management, partnership and support from other stakeholder groups

- The TPAMB started becoming organized when the Tubbataha Management Office (TMO) was established through the GEF Project. The TMO provided secretariat and administrative support to the TPAMB. From this time, regular meetings were held and more members than in the past became involved in the project. Members of the TPAMB see that things are moving and they are more involved even though they do not receive any honorarium for their participation, which causes some dissatisfaction. Overall, it is clear that the TPAMB, has greatly improved the capacity of its members to work together as a team (Annex 7, Evolution of Park Management, TMO 2003).
- Over the last five years, the TMO has estimated that an annual budget of P10 million (around \$180,000) is needed to carry out the management plan for the TRNMP. Aside from the GEF project implemented by WWF Phils in Tubbataha and Cagayancillo which is about to end in September 2004, other agencies have given commitments, although the TMO sees the need to generate additional funds for future activities. The Philippine Navy and Philippine Coast Guard have been providing \$35,000 worth of support annually in the form of salaries and four Navy and two Coast Guard personnel stationed at TRNMP. In addition, since 2002, the Provincial Government of Palawan has pledged to allot \$10,000 for park management annually, although only about \$6,000 has been released every year. The TMO has experienced delays in the release of funds from the Provincial Government, such that for a time it had to borrow P130,000 for TRNMP operations from SAGUDA Palawan, a Puerto Princesa based NGO member of the TPAMB.
- The Palawan Council for Sustainable Development, a multipartite body mandated to provide policy direction in the implementation of the Strategic Environmental Plan (SEP) for Palawan. The SEP was passed by Congress in 1992 in recognition of the need to conserve the important ecosystem of the province of Palawan and provides a policy framework for sustainable development for the province. The PCSD is also the main implementer in Palawan of RA 8550 or Fisheries Code, in partnership with TMO, and provides legal assistance. In 2002, the PCSD provided legal assistance to the TMO vs. Chinese poachers. It has also been conducting studies on cyanide fishing and is advocating a halt to all forms of illegal fishing.

The PCSD also produced a series of policies and guidelines to combat sodium cyanide use in the province since 1998. It also enacted an administrative order banning the trade of endangered species in Palawan and wants the LGUs to take an active part in implementing this order.

- The roles of existing and potential partners in the conservation of TRNMP are listed in the Tables 8 and 9. (Source: TMO, 2004)

Table 8. Role of existing partners in the conservation of TRNMP

Group	Specific Partner	Role / responsibilities
National Government Agencies (NGAs)	Bureau of Fisheries and Aquatic Resources / Department of Agriculture	- research and monitoring - law enforcement - marine policy
	Department of Environment and Natural Resources (DENR)	- research and monitoring - law enforcement - conservation awareness - financing - marine policy
	Philippine Coast Guard / Department of Transportation and Communication	- law enforcement (dive boats) - policy making
	Department of National Defense / Armed Forces of the Philippines	- law enforcement (patrols)
	Palawan Council for Sustainable Development	- research and monitoring - litigation of cases - conservation awareness - policy making
	Department of Energy	- industry regulation
	Department of Tourism	- conservation awareness - tourism management/promotion
	Department of Foreign Affairs	- marine policy -
Local Government Units (LGUs)	Provincial Government	- conservation management (includes financing) - law enforcement - policy making - legislative support - livelihood development
	Municipal Government of Cagayancillo	- law enforcement - policy making - conservation awareness - legislative support - livelihood development
Private Sector	Fishers	- environment-friendly industry
	Boat/Tour Operators	- tourism management/promotion - logistical support to law enforcer - conservation awareness
Non-Government Organizations	Palawan NGO Network, Incorporated (PNNI)	- policy advocacy - conservation awareness
	Saguda Palawan, Inc	- resource mobilization - conservation awareness

Group	Specific Partner	Role / responsibilities
	Conservation International (CI)	- conservation awareness (potential) - financing (potential) - policy making - research and monitoring (potential)
	World Wildlife Fund (WWF)-Philippines/Kabang Kalikasan ng Pilipinas (KKP)	- conservation management (includes financing, policy making) - conservation awareness - community development - research and monitoring
	Sulu Fund/CCEF	- research and monitoring - resource mobilization - conservation awareness
International Partners	Earthwatch	- research and monitoring
	World Heritage Center/UNESCO)	- conservation awareness - conservation management (includes financing, capacity building)
	Asia Foundation	- conservation awareness
Civil Society Groups	Rotary Club, Lions International, Kiwanis, etc	- conservation awareness - financing
Media Partners	Local, national and foreign media	- conservation awareness

Table 9. Expected role of additional potential partners in the conservation of TRNMP

Group	Specific Partner	Role / responsibilities
Private Sector	Hotels (potential)	- tourism management/promotion - conservation awareness
	Fishers	- environment-friendly industry - conservation awareness - monitoring and prevention of destructive activities
	Energy Developers	- conservation management including financing and environmental protection
	Telecommunications company, manufacturers, etc	- financing - conservation awareness - logistical support
International Partners	World Conservation Monitoring Center	- research and monitoring - conservation awareness
	WorldFish Center (WFC), others	- research and monitoring - regional policy making
	International Coral Reef Alliance Network	- research and monitoring - conservation awareness
Academic institutions	Palawan State University (PSU)	- research and monitoring - conservation awareness
	Western Philippine University (WPU)	- research and monitoring - conservation awareness
	Holy Trinity College (HTC)	- research and monitoring - conservation awareness

TRNMP World Heritage Site and the Sulu Sulawesi Large Marine Ecosystem

- The TRNP is listed as a World Heritage Site by UNESCO and its global significance to biodiversity cannot be ignored. Tubbataha Reefs is located within the Sulu-Sulawesi Large Marine Ecosystem (SSLME), the region bounded by Sabah, Malaysia, Philippines and Indonesia. The region harbors at least 450 species of corals whereas the entire Caribbean Sea has only 50 species (Miller, 1994) and is an important area for marine conservation and environmental management. The area has outstanding natural resources, rich biological diversity, critical marine habitats, and is important to regional economies. It has attracted local and international tourists.
- The location of Tubbataha Reefs and the currents of the Sulu Sea make the area an excellent breeding area for fish species. It also supports a variety of birds and is a critical habitat for resident and migratory seabirds along the Southeast Asian flyway.

Trust Fund Management

- The TPAMB is confronted with a lack of clarity as to who has management authority over the users' fees being collected and placed under a trust fund. Under the NIPAS Law, the funds should go to the National Treasury through the Integrated Protected Areas Fund (IPAF). Currently, the funds are with the Provincial Government of Palawan through the Palawan Council for Sustainable Development where a MOA has been entered into by the DENR and the PCSD. With the tenuous situation of the trust funds between DENR and the PCSD, the TPAMB is concerned as to where the funds might go at the end of the current project, as they would like to get an assurance that the funds will always be available for the conservation and protection of the Tubbataha Reefs. Such an arrangement in Palawan is seen as something, which other protected areas, may replicate.

VII. Nature of Links between Local and Global Environmental Benefits

A. Changes in Consumption Pattern

Consumption Patterns of Vulnerable Groups

- According to Cagayancillo fishers, the lifestyles and consumption patterns of the poorer Cagayanons have not changed significantly as a result of the conservation and enforcement efforts in Tubbataha, because the benefits from farming seaweed (before it was infested by "ice-ice") have counteracted income lost from fishing in

Tubbataha. Many of the fishers indicated that their economic status had remained the same since the establishment of the TRNMP and the GEF project, as evidenced by their nipa houses and traditional stoves using charcoal or wood. The fishers said that those whose homes have been upgraded to concrete materials are mostly local businesspersons and seaweed farmers who have benefited from the seaweed boom in the late 1990s and early 2000s.

Change in Consumption Patterns as viewed by CPFI members and local business/sari-sari storeowners.

- Many respondents stated that they have seen very clear physical changes in many of the homes in Cagayancillo. An increasing number of houses are built with concrete materials and galvanized roofs. They say that slowly the Cagayanons are adapting to modern lifestyles and they are changing their consumption patterns and way of thinking. Many of these ideas were introduced to them by outsiders, heard over the radio, seen on television, or in books and magazines. The changes are mostly attributable to the economic boom in seaweed production, fishing, and trading, but mostly from the seaweed industry. Children are able to go to school; others are in college in Puerto Princesa and Iloilo.
- Respondents say that as their incomes improve, they invest on household appliances, equipment or gadgets such as:
 - **LPG gas stoves.** They used to gather firewood for cooking; now many have purchased LPG stoves. Some local traders have encouraged local residents to purchase gas stoves even on credit. Residents say that gas stoves are one of the more important appliances they have bought as it has provided more convenience to the households. However, when they do not have enough money to refill their tanks or it is not available in the local sari-sari stores, they would always go back to using firewood.
 - **Karaoke and Video machines.** Filipinos in general love to sing and this is an important cultural aspect of the Cagayanons. One could find these machines in some of the homes, particularly in the Poblacion area. Those who have these machines also utilize generator sets. Electricity is provided by the Palawan Electric Cooperative between 6-10pm.
 - **Motorized outrigger boats --** Prior to motorized bancas, Cagayanons used sailboats called *pangko* or *balangay* that they constructed out of molave wood. Fitted with one or two masthead, the boats were still seen in the island up to early 1990s (Arquiza and White, 1999). According to the MAO, as of 2003 there are *** registered motorized outrigger boats in Cagayancillo.
 - **Television, refrigerators, satellite phones, satellite TV and cellular phones.** Not too many have invested in these appliances. Mostly local businessmen and traders could afford to invest in these.

B. Improvements in the local resource base

- Improvements in the local resource base are said to have led to improved biodiversity in the TRNMP and Cagayancillo. As the resource base improves over time, it is anticipated more and more tourists will come and visit the reefs. Many Cagayanons believe that with the establishment of local resource base, particularly in the MPAs, they would be able to attract local and international divers in their coastal waters. Livelihoods would improve as some residents would eventually earn tourist money and the LGU will earn taxes from tourism. In addition, other residents would provide their services by ferrying tourists to and from the nearby islands or as far as Iloilo or Puerto Princesa.

C. Reduction of Vulnerabilities both directly and indirectly

- The CPFI needs to be strengthened further, especially at this time when the GEF project is about to end. Fishers and seaweed farmers are among the most vulnerable sectors in Cagayancillo and the CPFI, together with the LGU can somehow act to reduce these vulnerabilities. A lot still has to be seen as to how the LOP and the CRM Plan will be implemented by the LGU and the CPFI. So far, with the establishment of the MPA and the Bird Sanctuary, fishers are expecting changes to occur in a few years. Seaweed farmers on the other hand expect more technical and financial support from the LGU and other agencies of government.
- Women still practice the same roles in the households, including gathering water from wells. However, with the expected improvements in income due to the livelihood opportunities to be provided under the LOP, the credit facility of CPFI and the establishment of MPAs with the objective of increasing fish catch and income levels, women's groups that participated in the study believe that their roles will change over time. Many households are already sending their girls to colleges in Puerto Princesa, which was very rare in the past and this they believe will help improve their status in the community. Last May 2004 elections, a woman trader ran for mayor but lost. This participation, according to the women's federation, encouraged some of their women members.

D. Changes in External Institutional Environment

- There is heightened environmental awareness compared to when the project started in 1999. There is a consensus among the different stakeholders in Cagayancillo and Puerto Princesa that this has led to improved appreciation of the efforts of the TRNMP management led by the TPAMB and TMO.

VIII. Missed Opportunities

Sustainability of Project Investments after September 2004

- The project has made no provision for KKP(WWF Philippines) to stay until the CRM plan of Cagayancillo is fully implemented. The project should have provided for a longer-term involvement, particularly since there are communities involved. The GEF-assisted project will end in September 2004 and time is not sufficient to monitor and sustain the implementation of the CRM plan. Another one to two years would have improved prospects for sustainability, particularly since the Tubbataha Protected Area Bill has not yet been passed by Congress.
- KKP believes that it could have covered more areas through the project. Currently, there are no commitments on how KKP intends to sustain the project. It has provided technical support to the CPFI in the preparation of a project proposal, which it intends to submit to the GEF Small Grants Programme. The TMO will play a role in sustaining the project that has been started by KKP, but mostly in the area of enforcement. The TMO will still receive funds from the Provincial Government and from collection of user fees, although these will not be sufficient to enable it to operate at the same level as during the project.
- Cagayancillo stakeholders said that the project should have provided more options for sustaining the initiatives of KKP. The resources of the local government of Cagayancillo are not enough to ensure that what has been started through the GEF-assisted project can be sustained. Among the activities that need to be sustained are:
 - Habitat rehabilitation and restoration
 - Livelihood
 - IEC
 - Marine law enforcement
 - Legislation and advocacy

Sustained Technical Support for CRM implementation

- There is need for more technical support staff to help Cagayanons implement the CRM plan. It is perceived by some residents and KKP staff that, even if the Cagayanons can continue without KKP and the GEF project, the momentum that has been built up to implement the CRM plan might slow down and the LGU might lose interest. Therefore, there is a need for continuing technical assistance to the LGU.

- A comprehensive socio-economic survey should have been conducted during the initial phase of the project. There remain gaps in the socio-economic indicators which are necessary to guide implementation of the CRM Plan and the LOP.

Opportunity to organize basic sectoral groups

- From an early stage, the project should have taken steps to conduct community-organizing activities, especially among the most vulnerable groups, such as the small-scale local fishers in Cagayancillo, rather than simply make them participate in seminars and IEC activities. The fisher's association and seaweed farmer's associations, although formally constituted as groups, still need to be organized and strengthened so that they may be integrated fully in the development agenda of the LGU in Cagayancillo.

Gender integration

- The DSWD has organized the women's sector with the intent of developing livelihood skills. The KKP should have taken this opportunity to introduce gender-mainstreaming seminars to improve on the role of the women in Cagayancillo. Even the CRM plan and the LOP missed out on improving opportunities for women. According to many stakeholders interviewed, including women, said that the role of women did not change because of the project.

Handover of facilities and Equipment to Cagayancillo and TMO

- There are no clear indications what will be the role of the TMO after the project ends in September 2004. With regard to the eventual hand over of the project, including the equipment (including ferryboats) to the TMO and Cagayancillo LGU, the TMO seems hesitant to receive this equipment, because it will be expensive to maintain. Furthermore, the TMO is focused on activities in Tubbataha rather than on development in Cagayancillo.

CPFI and Livelihood.

- CPFI should have implemented more livelihood projects, focused particularly on the most vulnerable and disadvantaged groups in Cagayancillo. Better planning and the conduct of a comprehensive socio-economic profile of Cagayancillo would have provided enough information concerning which sectors of the community in Cagayancillo could most benefit from livelihood interventions. At present, not everyone in Cagayancillo can avail of the seven credit services it provides.
- CPFI members interviewed are hopeful that before KKP leaves, changes will have been institutionalized by the CPFI. They are making this suggestion because they are looking forward to the positive benefits of CPFI on their livelihood. With the

recent slump in seaweed production, they hope to be able to rely on the CPFI to address the economic difficulties of the community. Among their proposals are:

- Those with the lowest levels of income should be able to access the loans.
- That a livelihood activity without collateral be implemented by the Pangabuhi-an Foundation. Among the suggested livelihoods are vegetable gardening, irrigation projects to boost agriculture, dressmaking.
- That CPFI should increase its capitalization to provide more services to the community.

Cost of Project Operations

- The cost of protection and conservation of Tubbataha is too high. The P10 million annual operations cost of the project is enough to cover other coastal communities, particularly in the eastern coast of Puerto Princesa where many of the poachers or users of Tubbataha are.

Administrative concerns

- There are problems with subcontracting for a remote project site. KKP should have hired in-house experts instead of sub-contractors. Their own assessment shows that they are not happy with the sub-contracted work in the areas of IEC, policy and regulation, sustainable resource management and livelihood.

Enforcement

- Since enforcement in Cagayancillo is an LGU concern and in Tubbataha, a concern of the TMO park rangers, Tambuli Ta Kagayanen said that the project should have also capacitated local residents in Cavili Island in enforcement, as this is the closest island to Tubbataha. Many illegal fishers pass by Cavili Island as a jump off to Tubbataha. The project or the LGU could have provided logistical support (such as boats and gasoline allowance) to enable the local residents of Cavili Island to be able to apprehend illegal fishers heading for Tubbataha or around Cavili Island.

Need to hire more Cagayanon Staff

- According to Cagayanon respondents, the project should have considered hiring more Cagayanons in the project. The president of Tambuli Ta Kagayanen said that there are about 30,000 Cagayanons spread over the coastal areas of Palawan, some of whom are skilled and college graduates. They could provide support to the project and are familiar with the Cagayanon culture.

- According to KKP, the project did hire local residents, as technical staff/community organizer, a park ranger and an administrative staff member based in Puerto Princesa. The Cagayanons, however, suggested that the majority of the project staff should have been of local origin.

IX. Lessons learned

GEF Funds

- GEF funds were a turning point for the TPAMB; which began to become effective with the creation of the TMO. Records are now centralized and organized. In terms of looking at the future, funds will be available because of the conservation and protection efforts made by the TPAMB, but not as much as the capacity provided by the GEF grant.
- The TRNMP is spending more than it is receiving from users' fees. Therefore, early on in the project, KKP should have taken additional steps to ensure the sustainability of project activities, since it is too early to dismantle the KKP team at the end of the GEF funding in 2004.

World Heritage List

- Inclusion in the World Heritage Site list has created many advantages for the TRNMP.

Project Administration, Management and Sustainability

- Before the GEF funding and the creation of the TMO, the TPAMB was less coordinated than later. The TMO was created under GEF funds and performs a quasi-governmental function. The Park Manager is not a government functionary. The position was created by the project, which pays this officer's salary. For the first two years of project operations (2001-2002), the salary of the park manager came from the project and in 2003, it came from the trust fund. An issue remains, concerning how the provincial government, the TPAMB and the PCSD intend to sustain the operations of the TMO, including salaries of the park manager and staff. Furthermore, the project needs to be fully integrated with Provincial planning processes, particularly PCSD.
- The program should have been built upon a livelihoods analysis to assess how restriction of access will affect incomes of different households (including gender dimensions)
- The cost of providing training every year for law enforcers or park rangers is increasing due to constant personnel rotations from the Coast Guard and

Philippine Navy. During the years of project operations, the TMO had three Navy, two Western Command, and three Coast Guard personnel changes.

- The level of political uncertainty at all levels of government means that sustainability of gains made by the project remains at risk; even though the project has made great efforts to assure this aspect, through the TMO, TPAMB, and capacity building programs.
- Importance of developing capacity of local actors to resolve policy level conflicts, such as NIPAS vs. SEP. The TPAMB has been relatively effective at resolving conflicts, as evidenced by submission of the Tubbataha Protected Area (PA) Bill by the TMO and TPAMB. Once the PA Bill is approved, budgetary appropriations will be in place to support the efforts started when the TRNMP was established.
- KKP has shown that, for any NGO based outside the Province, staff familiar with how development works at the Provincial and local level are a major asset, particularly at the project management level.

Participation of Vulnerable Groups

- Participation of community based organization or POs in the TPAMB; currently Tambuli Ta Mga Kagayanen, a cultural/arts group based in Puerto Princesa and organized by Summer Institute of Linguistics (SIL), an international group. There is no participation among basic sectors, particularly fishers in the TPAMB.
- The Cagayancillo Women's Federation focuses its work primarily in livelihood, not promotion of women's rights. In addition, the role of community-organizing work was not clear at the start of the project.
- Local residents in Cagayancillo get jealous whenever they find out about Tubbataha in newspapers, in televisions and in magazine. They believe that Cagayancillo should be mentioned at all times since for them, Tubbataha is only part of Cagayancillo and they would be proud if this could be mentioned in any publicity for the Protected Area.

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Annex 1: Summary of Illegal Fishing Impact viz. Conservation Objectives (TMO Records, 2004)

TRNMP Conservation Objectives	Impact of Illegal Fishing
Biological diversity and ecological processes protected from unnatural threats and human impact;	Destruction of natural reef structure which supports ecological processes. It took four years for TRNMP to recover to its current status before the bleaching event in 1998. This became possible only because such phenomenon did not actually destroy the physical structure of the reefs which support the living components. On the other hand, illegal fishing destroys this physical structure and depletes the commercial fishes which are considered the major spawning stock in a healthy reef.
Legal and management structures are effectively maintained;	The Park management may be effective in enforcing park and fishery rules within the confines of TRNMP but this also causes leakage of illegal fishing to other reefs with less or no management in place, thus pushing problems towards other areas in the region specifically the Sulu Sea. This emphasizes the need to broaden management clout which requires legal structures and mechanisms at a higher level.
Stakeholder participation and representation ensured;	Occurrence of illegal fishing not just within the Park results in conflicts among resource users which further complicates the process to ensure stakeholder participation and representation. This also diminishes the appreciation of conservation results when evaluated against equitable distribution of benefits to stakeholders, specially the fishermen who are difficult to classify into legitimate fishermen and those who practice destructive methods.
Public understanding of the benefits of conserving TRNMP improved;	One of the significant benefits generated by conserving Tubbataha Reefs is its function as a source of larval stocks in the Sulu Sea. The public's understanding of this beneficial function is highly affected if host reefs are destroyed by illegal fishing. In fact, the benefit will not be realized at all. This is a critical issue because being an

	uninhabited offshore reef, it is important to communicate that conservation efforts in Tubbataha result to goods and services beneficial to people.
Increased income potential from ecosystems targeted for conservation.	Illegal fishing hits the basic productive structure of the reefs. Conservation fee collection from tourists in TRNMP will not be as effective if illegal fishing is unabated in the Park. Cagayancillo residents sacrificed their fishing rights in TRNMP for long term benefits. The initial resource valuation for TRNMP points to 8:1 benefit/cost ratio. This justifies management costs invested in the Park. Illegal fishing could alter this ratio, since it is the major cause of reef destruction in Tubbataha and surrounding reefs.

Annex 2 (condensed version)
STRATEGIC CRM PLAN FOR CAGAYANCILLO
(March 2002)

VISION: Isang maunlad at matiwasay na pamayanan na may pagmamahal at takot sa Diyos at nagkakaisa sa pangangalaga ng likas-yamang dagat.

A progressive and peaceful citizenry with love and respect for God and united in the protection of natural resources

MISSION: Pagpapatupad ng mga programang pang-kalikasan para sa malinis na karagatan at masaganang mamamayan.

Implement an environmental program for a clean environment and well-provided communities

GOAL: Sa pamamagitan ng “Coastal Resource Management” mapangalagaan ang likas-yaman at mai-angat ang antas ng pamumuhay ng mamamayan ng Cagayancillo sa loob ng sampung taon (2002-2012).

Protect the environment and at the same time improve living conditions of communities in Cagayancillo for the next ten years through the implementation of Coastal Resource Management

ISSUES/PROBLEMS	<u>OBJECTIVES</u>	MANAGEMENT STRATEGIES	ACTIONS
Low Income <u>Low fish catch</u> -illegal fishing -destruction of reefs - increase in population Low seaweed production -lack of seedlings -diseases -low price -low quality <u>Low technical know-how</u> -distance/access to technology -absence of educ/training services/facilities Isolated geographical location -transportation -marketing Environmental Degradation I. Illegal fishing methods -tigbi -sahid II. Live fish trade -cyanide Inadequate law enforcement services -collection of endangered species Low level of environmental awareness -ordinances not well disseminated Inadequate socio-economic services/facilities III. Transportation <u>Water supply</u> <u>Health services</u> <u>Educational services</u> <u>Power Supply</u> <u>Marketing facilities</u> <u>Communication facilities</u>	Increased Income “Pagtaas ng mga kita o kabuhayan” Increased fish catch <u>Increased seaweeds production</u> <u>Increased technical training and seminar on livelihood</u> <u>Improved marketing and transportation</u> Rehabilitation of lost habitats “Pagpapanumbalik ng mga nasirang tirahan ng samu’t saring buhay” <u>Stop illegal fishing</u> <u>Regulate, ban, live fish trade</u> <u>Minimize collection of endangered species</u> <u>Increase level of environmental awareness (by specific group and by message)</u> Adequate socio-economic and cultural services and facilities “Sapat na serbisyo at pasilidad na pang-sosyoekonomiko” <u>Improve transportation, health, power, communication, educational, and other infra (mktg)</u> <u>Improve sports facilities</u>	1. Zoning 2. Research and monitoring 3. Legislation, regulation and enforcement 4. Enterprise Development 5. Dev’t of socio-economic and cultural services and facilities (infrastructure) 6. Training and technical assistance 7. IEC	1.1 Identification and delineation of potential sites for aquaculture, mariculture, marine protected areas, sanctuaries 1.2 Marking of boundaries using buoys 2.1 Research on biology and ecosystem for target species in relation to economic potentials 2.2 Participatory monitoring and evaluation 3.1 Registration & licensing 3.2 Creation of KSK/Bantay Dagat Patrolling 3.3 Regulation of harvest 3.4 Bakawan harvesting and planting 3.5 Formulation of ordinance 3.6 Collection of fees, permits, etc. 4.1 Enforcement of ordinances 4.2 Identify enterprise alternatives 4.3 Conduct feasibility studies 4.4 Product development 4.5 Market study 4.6 Storage plant 4.7 Establish micro-credit 5.1 Encourage investors in transport 5.2 Coordinate with corresponding agencies regarding power, communication system, water, health 6.1 Seek for TA on Establishment of MPAs 6.2 Training on: communication skills, prevention of seaweed diseases, care of livestock, farming techniques, mariculture, crafts, ecotourism 7.1 Public hearing 7.2 Workshop

Annex 3 PROBLEMS AND ISSUES BEING ADDRESSED by the CRM PLAN (2002-2012)

Low Income	Low fish catch caused by destruction of reefs, illegal fishing, increase in population pressure
	Low seaweeds production caused by lack of seedlings, diseases, low price, low quality, limited transportation services
	Inadequate technical know-how caused by distance/limited access to technology, absence of education and training
Environmental degradation	Illegal fishing methods i.e. tigbi and sahid
	Live fish trade encourage use of cyanide
	Inadequate law enforcement services
	Collection of endangered species
	Low level of environmental awareness & education ; ordinances not well-disseminated
Inadequate socio-economic services & facilities	Transportation, water supply, health services, power supply, educational services, marketing facilities, communication facilities

ANNEX 4

Excerpts from Annex 10 of the Tubbataha Business Plan, 2004

CAGAYANCILLO SEAWEED FARMING

Cagayancillo is an island municipality situated in the eastern part of the province, approximately 178 nautical miles from Puerto Princesa City. The municipality is rich in marine resources, pristine beaches, and reefs. Included in its territorial area in Tubbataha Reef, which was declared as a World Heritage Site by UNESCO.
(<http://ecommunity.ncc.gov.ph/cagayancillo/>)

Fishing and seaweed farming are the major sources of income and employment in Cagayancillo. In fact, almost 76% of the total households are engaged in seaweed farming in the year 2000. (Municipal Land Use Plan, 2000-2010)

Seaweed is a mass of marine algae grown in natural conditions or from pond culture. Unlike terrestrial and aquatic plants, these simple structured organisms have no true leaves, stems or roots and contain no wood vessels. Their body is made up of simple cells with little or no differentiation at all. (Armedilla and Castro, 1998)

There are two species of seaweeds that are being cultured commercially in the municipality, *Eucheuma spinosum* and *Eucheuma cottoni*. The farmers use the floating vertical monoline method in culturing seaweeds.

As of 1998, Cagayancillo is the leading seaweed-producing municipality in the province of Palawan having 49.2% (4,800 metric tons) share of the province production. (Armedilla and Castro 1998). According to Dr. Romeo Cabungcal, Supervising Aquaculturist of the Office of the Provincial Agriculturist, at present, 30% of the province production of seaweed is from the municipality of Cagayancillo.

Based on the interview with Dr. Romeo Cabungcal, there is still 40% (6,500 hectares) potential area for seaweed farming in the municipality of Cagayancillo. As of 2001, around 1,420 people are already involved in seaweed farming in the area. The Municipal Government allots each farmer a maximum of one (1) hectare for the said livelihood.

Seaweed Local Technical Working Group (SLTWG) has classified Cagayancillo under class A. Municipalities under class A have 10 months to one (1) year production of seaweed. Each year, the farmers have four (4) to five (5) cropping (45-60 days).

Table 1. Annual Production of dried seaweed in Cagayancillo.

Year	Production in Metric Tons
1994	2,632
1995	3,059
1996	3,554

1997	4,130
1998	4,800

Source: Seaweed Local Technical Working Group

Marketing Practices

The seaweed farmers usually sell their product in dried form (36% moisture content) to local traders (vyajeros) who most of the times have advanced certain amount to their “suki” farmers. These farmers in turn are committed to sell their seaweed to no other trader than their “suki”. Cash advances are provided for production expenses of the farmers.

During harvest time, the farmers dried the seaweed for two to three days and sell these in cash basis with the local traders.

The price offered by the local traders ranges from PhP 25.00 to PhP 30.00 per kilogram. The local traders then sell the dried seaweed to carrageenan² processors found in Cebu. Around 90% of the total produce of the municipality are being sold to Shemberg while the remaining 10% to Marine Colloid Philippines, Inc. (See Figure 1)



Figure 1. Distribution Channel of Local Seaweed

Revenue of Seaweed Farmers per Hectare

A. Cost of Input

	INPUT	COST PER UNIT	AMOUNT
1,200 pcs.	Stake	Ph 10.00 P	12,000.00
25 kgs.	Nylon (120 mm)	125.00	3125.00
15 kgs.	Plastic Straw	100.00	1500.00
4,800 kgs.	Seedlings	10.00	48,000.00
600 kgs.	Styrofoam	5.00	3,000.00
25 meters	Coralon net	75.00	1,875.00
100 meters	Nylon net	50.00	5,000.00
	Total		PhP 74,500.00

² Carrageenan is a linear sulfated polysaccharide. Have unique ability to form an almost infinite variety of gels, rigid or compliant, tough or tender with low or high melting point.

B. Cost of Maintenance

	MONTHLY COST	ANNUAL COST
3 laborers	Ph 9,000.00 P	Php 108,000.00
Gasoline expense	500.00	6,000.00
Other Expense (10% of cost of input)		7,450.00
Total		121,450.00

C. Depreciation Expense

	LIFE SPAN	DEPRECIATION COST	VALUE
Wooden Banca	3 years	Php 1000.00	Php 3,000.00
Motorized banca	6	5,000.00	30,000.00
Cottage	4	2,500.00	10,000
Drying platform	3	2,000.00	6,000.00
1 pc. Bolo	2	Php 75.00	Php 150.00
1 pc. Knife	2	50.00	100.00
200 pcs sacks	2	500.00	1,000.00
6 pcs Bamboo basket	2	300.00	600.00
1 pc. Styrofoam box	2	250.00	500.00
Weighing scale	2	1,000.00	2,000.00
Hand tools	2	200	400.00
Nylon basket	2	150.00	300.00
Total		13,075.00	49,000.00

D. Production

Seedlings 48,000 pcs at 100 grams per piece	4,800.00 kgs
Additional increase in weight in two months: 100 grams to 1,000 grams	48,000.00 kgs
Less: Seedlings	4,800.00 kgs
Volume available for sale (wet weights)	43,200.00 kgs.
Volume available for sale (dry weight) (8 kgs. wet:1 kg. dry)	5,400.00 kgs

E. Net Income per year

Production	5,400.00 Kgs
Price	Php 27.50
Sales	Php 148,500.00
Less: Transportation expense (0.50 kg)	2,700.00
Income per cropping	145,800.00
x number of cropping per year	4
Income per year	583,200.00
Less:	
Input cost	74,500.00
Maintenance cost	121,450.00
Depreciation cost	13,075.00
Net Income	267,300.00

Problems Encountered

Seaweed Farmer

Rampant cyanide fishing within the farm areas.

Lack of support from the local government in protecting the seaweed farms.

Lack of drying facility during rainy season.

Lack of good seedlings supply during off planting season.

Lack of intensive information campaign on proper technology for seaweed farming.

Lack of credit facility to rehabilitate damaged farms.

Traders

Farmers are not properly drying their seaweed.

Presence of fly-by-night traders destroying both prices and quality.

Lack of credit financing to traders.

Lack of proper information from processors seaweed process.

Processors are not imposing fair and reasonable moisture deduction.

Annex 5 TPAMB Guidelines to Reduce Illegal Fishing in Tubbataha Reef (TMO, 2002)

Given the healthier condition of the reef and the establishment of improved law enforcement systems in Tubbataha Reefs, the challenge for park management in the coming years is the prevention of illegal fishing and other destructive human activities that would again lead to the degradation of the park's resources.

To prevent illegal fishing from making a comeback in Tubbataha Reef, the management board has come up with several guidelines covering various aspects of conservation efforts. These are clustered to provide easier guidance for park management in addressing the impact of illegal fishing:

- * INSTITUTE LEGAL MEASURES TO REDUCE DESTRUCTIVE ACTIVITIES
 - Exert renewed efforts to get congressional approval for the protected area bill for Tubbataha, including the expansion of its boundaries, in accordance with the NIPAS law
 - Request for the establishment of a municipal court in Cagayancillo to expedite the prosecution and conviction of illegal fishers
 - Establish cooperation agreements with China, Vietnam and Taiwan to stop poaching activities that affect the credibility of the national government in dealing with fisheries issues
 - Introduce a management and legal structure that would support local involvement in the management of waters surrounding Tubbataha Reef that are not covered by the municipal waters
 - Initiate a cooperative arrangement with offshore oil and gas exploration companies so that conservation measures are included in their feasibility studies.
- * STRENGTHEN MANAGEMENT CAPABILITY FOR CONSERVATION EFFORTS
 - Institute a mechanism for continuous evaluation of management effectiveness in the conservation of Tubbataha Reefs
 - Initiate the establishment of a network of Marine Protected Areas or MPAs in the Sulu Sea to preserve the management gains in Tubbataha and prevent negative fallout due to conservation efforts in the park from spreading to other MPAs in the region
 - Lobby for a National Marine Policy from the Maritime and Ocean Affairs Center of the Department of Foreign Affairs
- * EXPAND STAKEHOLDER INVOLVEMENT IN PARK MANAGEMENT
 - Develop new economic activities in Cagayancillo that spread the benefits to resource users, such as community-based marine ecotourism that could tap the services of Cagayanon families and increase the number of constituents who will be interested in protecting their natural heritage

- Increase management support for community development efforts in Cagayancillo out of their share from park conservation fees, including the improvement of basic services such as access to water and health facilities
 - Assist Cagayancillo in the conservation and sustainable utilization of the coral reefs and fishery resources in municipal waters to ensure a stable source of income and livelihood for their families and continued participation in protection efforts
 - Increase the accessibility of Cagayancillo to potential investors and visitors by exploring other possible routes for boat service
- * ENHANCE INFORMATION & EDUCATION CAMPAIGNS
- Initiate environmental awareness campaigns in the places of origin of illegal fishers who need to be identified as the target audience for information on the conservation of Tubbataha Reef
 - Provide opportunities for exposure trips to Tubbataha Reef for residents from mainland Palawan and Cagayancillo in order to generate better appreciation of its status as a World Heritage Site
- * ENHANCE LAW ENFORCEMENT CAPABILITY IN TUBBATAHA
- Mobilize the *Bantay Dagat* (Guardians of the Sea) forces of Cagayancillo in patrolling the waters frequented by illegal fishers, especially the northern part of the municipality that has been identified as one of their places of origin
 - Establish a ranger station in the south atoll and patrol stations in outlying islets of Cagayancillo that can serve as the base of operations of park rangers and sea wardens to enhance their presence in the waters around the park
 - Provide sufficient facilities for patrols such as faster boats and communication equipment necessary for effective law enforcement
 - Grant cash incentives to law enforcers who are active in arresting illegal fishers in the waters around Tubbataha
 - Offer legal and financial support to law enforcers facing harassment suits so that they will not be saddled with legal burden
 - Provide continuous legal training and education for law enforcers
- * INSTITUTE SUSTAINABLE FINANCING STRATEGIES
- Lobby for legislated funding in the congress and local government units as an expression of official recognition that Tubbataha Reef is a national treasure worthy of government support for conservation efforts
 - Prioritize capital-build up for an endowment fund to finance core activities for the Park, starting with the existing Trust Fund, to ensure that effective conservation management is continuously improved through efficient TPAMB and TMO operations
 - Engage the participation of legitimate commercial fishing operators in the Sulu Sea, particularly those utilizing the fish aggregating devices near Tubbataha, in the form of payment of economic rent

as a result of increased fishery productivity arising from the conservation of the park's resources

- Mobilize the support of international groups in providing financial assistance for the conservation of Tubbataha Reef in recognition of its heritage values for the global community

*** ESTABLISH A PERMANENT MECHANISM FOR BIOPHYSICAL RESEARCH**

- Conduct bio-physical and socio-economic research in other offshore reefs and islands in the Sulu Sea, specifically Bastera, Bancorran and San Miguel Islands to magnify Park benefits
- Institute a long-term research program that would include annual studies to monitor the health of Tubbataha's ecosystems and biological diversity
- Initiate studies on fish catch outside the boundary of Tubbataha to determine abundance and by-catch of cetaceans, if any
- Improve management information systems through the compilation and research data in the TMO and effective dissemination to the public in popular form
- Establish sound guidelines for research activities in Tubbataha to maximize the use of funds, avoid duplication of efforts, and ensure that studies done are relevant to conservation management

In the long term, it is hoped that these guidelines will not only address the problem of illegal fishing, but also other activities that are allowed in Tubbataha such as tourism and research. This would ensure that the integrity of the park's resources are conserved for the benefit of humanity.

Annex 6
RULES AND REGULATIONS FOR THE
CONDUCT OF ACTIVITIES IN THE
TUBBATAHA REEF NATIONAL MARINE PARK
AND WORLD HERITAGE SITE

ARTICLE I

Policy and Application

Section 1. Title. These rules shall be known and called the “Rules and Regulations for the Conduct of Activities in the Tubbataha Reef National Marine Park (TRNMP) and World Heritage Site”.

Section 2. Purpose. Pursuant to the TRNMP Management Plan approved by the Palawan Council for Sustainable Development (PCSD) during its 70th meeting dated November 26, 1999, these rules are promulgated to prescribe the procedures and guidelines for the conduct of tourism activities in TRNMP in order to ensure achievement of its objectives.

Section 3. Declaration of Policy. Primordial consideration to the natural living processes of the park, the conservation of its resources, and the protection of all flora, fauna and abiotic resources within it shall be the guiding principle for these rules. These rules and regulations shall guide the actions of all visitors to the protected area. Visitors are observers of the park’s living processes and visitation is a privilege, not a right. Therefore users are to act responsibly towards the critical environment of TRNMP to ensure the maintenance of its economic, biological, educational, socio-cultural and scientific values.

Section 4. Construction. All doubts in the interpretation and implementation of these Rules and Regulations shall be resolved in the light of the Declaration of Policies contained herein.

Section 5. Scope of Application. These Rules shall apply in the Tubbataha Reef National Marine Park and World Heritage Site and shall serve to guide all Park users and visitors entering TRNMP.

Section 6. Definition of Terms. As used in these Rules, the following terms are defined as follows:

- (1) “Commercial diving operations” refers to the delivery of scuba diving gears and scuba diving services for a fee;
- (2) “Moorings” refers to concrete semi-permanent fixtures on the sea bottom installed by the TPAMB to provide sea crafts and vessels a steady position on which to tie to avoid damaging corals and drifting. “Moorings” shall include ropes, chains, buoys, and all other attendant components attached to the concrete blocks necessarily used by the boats for tying.
- (3) “Visitors” shall refer to any individual entering TRNMP for purposes of tourism, research, or official business;
- (4) “Fishing” means the taking of fishery species from their wild state or habitat, with or without the use of fishing vessels. The mere casting or deploying of the fishing gear consummates “fishing,” whether or not any fishery species are actually caught;
- (5) “Fishing gear” means any instrument or device and its accessories utilized in taking fish and other fishery species. “Fishing gear” includes, but are not limited to, fishing rods, tackles, hooks, fishing lines, nets, catch bags, gaffs, bait, and equipment used for spear fishing, whether or not these fishing gears are in their assembled form or in separate parts;
- (6) “Local tourists” shall refer to Filipinos visiting the TRNMP;
- (7) “Crew” shall refer to all employees of the boat who must possess a seaman’s book or other pertinent seaman’s papers.

ARTICLE II

Rules and Regulations

Section 7. No vessel less than twenty-five (25) gross tons is allowed to undertake commercial diving operations within the Park.

Section 8. All dive operators or their representatives must register with the Ranger Station by radio (VHF Ch16) upon entering the Park. If this is not possible, they must report in person.

Section 9. All boats shall use mooring buoys provided within TRNMP. Boats above 200 gross tons tie to mooring buoys at their own risk and are required to drift during

rough weather. Tying to a moored boat is prohibited. The TPAMB shall not be responsible for any loss or damage that may result in the use of mooring buoys. Users are therefore advised to check all lines and accessories prior to use. Any damage to moorings due to fault or negligence shall render the user liable for the payment of the cost of damage or reinstallation of the same. The following shall constitute negligence on the part of the user:

- 9.1 Running over/dragging rope and buoy;
- 9.2 Failure to untie from moorings during bad weather conditions;
- 9.3 Other similar acts resulting to damage of moorings.

Section 10. Boats are required to inform the ranger station of the buoy used prior to mooring and upon disengaging. Data on the buoy, and the time and date these are used shall be recorded by the ranger station and on the vessel logbook.

Section 11. All vessels and persons shall secure an entry permit and pay the appropriate charges in accordance with the schedule of fees under Section 12. Applications must be accurately completed prior to the issuance of an entry permit to the Park. Any misrepresentation shall constitute a violation of these rules. The following shall likewise apply:

11.1 Dive operators shall submit a current copy of Philippine MARINA Registry for TRNMP files at the beginning of the diving season prior to issuance of any entry permits;

- 11.2 All vessels must have the necessary first aid and emergency equipment, including oxygen and SOLAS equipment;
- 11.3 Diveboat-employed foreign divemasters and/or crew must show certification cards, alien employment permits, and passports;
- 11.4 The diver to divemaster ratio shall be 8:1.
- 11.5 All outstanding fines shall be paid, if applicable, prior to the issuance of any entry permit.

Section 12. The schedule of park fees shall be as follows:

Vessel Entry Fees:

100 GT and below – Php3,000.00

101-200 GT Php4,500.00

201 and above Php6,000.00

Visitor Entry Fees:

Php 2,500 per person

50% discount for local tourists

50% discount for repeat visits within the season

Php 250.00 for divemasters hired to provide diving services

Minors aged 12 years or below, and boat crew are exempt from the payment of park fees. Fees shall be paid in Philippine Currency. Vessel and visitor entry fees are not transferable or refundable.

Section 13. Prohibited Acts. The following acts are prohibited inside the Tubbataha Reef National Marine Park and World Heritage Site:

- 13.1 All forms of fishing, whether catch-and-release, for recreation or for consumption;
- 13.2 Not stowing fishing gear. All fishing gear, whether in their assembled form or separated into parts, shall be stowed in a locked container prior to entry into the TRNMP. Each fishing gear, component or accessory found not stowed shall constitute a distinct violation and shall be fined accordingly.
- 13.3 Handling, touching or feeding marine or terrestrial life forms;
- 13.4 Willfully approaching and/or chasing marine animals, or any analogous acts which would harass or cause stress to marine animals;
- 13.5 Gathering/collection of any flora or fauna, their parts or derivatives;
- 13.6 Introducing any non-native species to the Park;
- 13.7 Use of jet-skis or other motorized sports equipment;
- 13.8 Constructing or installing any kind of structure, fence or enclosure;
- 13.9 Cruising around South and North Islets without obtaining clearance from the marine park rangers. Boats shall not approach the islets closer than 100 meters. Any unnecessary noise such as shouting or clapping, which disturbs the wildlife on the islets is strictly prohibited and shall constitute harassment;
- 13.10 Landing a boat or setting foot on the North and South Islets;

13.11 Swimming, snorkeling or diving around North and South Islets and in the lagoons;

13.12 Polluting or littering;

13.13 Vandalism in any form;

13.14 Anchoring on the reefs;

Section 14. A special permit must be obtained from the TPAMB to cover commercial filming activities, subject to the terms and conditions which the TPAMB may impose upon prior evaluation of the proposed activities. No filming may restrict or interfere with operations in the Park. All film crew and staff must follow directions, instructions and orders from Park staff or lose permission to film. Violation of the terms and conditions of the special permit shall be subject to penalties provided for under Section 17. Commercial use of the film should acknowledge the TPAMB and where the film was taken.

Section 15. The conduct of research in the TRNMP shall be covered by a permit from the TPAMB and shall comply with the Philippine Wildlife Act and all applicable PCSD resolutions and guidelines. The TPAMB shall include any additional terms and conditions on the permit. Violation of these terms and conditions shall be subject to penalties under Section 17.

ARTICLE III

Regulatory Functions

Section 16. The TPAMB or its representatives reserves the right to board and inspect vessels at any time. Official reports filed by the marine park rangers, TPAMB members and TRNMP representatives may be considered as complaints by the TMO for the purposes of summoning violators for administrative hearings before the Executive Committee.

ARTICLE IV

Penal Provisions

Section 17. Any violation of the above Rules and Regulations or the commission of prohibited acts within the Park, shall be sufficient ground for the imposition of

administrative fines, cancellation/non-issuance of permit, without prejudice to prosecution under applicable laws, rules and regulations. Any violation of these rules or the commission of prohibited acts shall subject violators to the following:

- 17.1 Restoration and payment of actual damages, if any;
- 17.2 Fine in the amount of not less than Php5,000.00 for every violation;
- 17.3 Payment of 200% surcharge in the case of non-payment of fees;
- 17.4 Cancellation of permit in the case of the commission of any prohibited acts. Violation of Sections 13.10 and 13.14 shall cause the immediate expulsion of the dive boat, its complement and passengers from the TRNMP;
- 17.5 Prohibition from operating within TRNMP for one year from the date of the imposition of the penalty for repeated violations;
- 17.6 Non-issuance of permit to persons, vessel owners and/or crew with pending cases in other marine protected areas.
- 17.7 Banning of individuals identified to have repeatedly violated any of the prohibited acts under Section 13.

Section 18. Dive operators/charterer, ship's captains, and owners of the vessel shall all be solidarily liable for the payment of fines for any violation or damage to the reef caused by their crew and/or passengers. It is the responsibility of dive operators to ensure that all guests and crew are cognizant of these Rules and Regulations.

Section 19. Individuals who have been identified to have repeatedly committed prohibited acts shall be banned from entering TRNMP.

Section 20 These rules shall be effective 15 days after its publication in a national newspaper of general circulation.

ANNEX 7 (TMO, 2003)

EVOLUTION OF PARK MANAGEMENT AND ISSUES IN THE CURRENT SET UP

1. Evolution of Park Management

The management of TRNMP has undergone several transformations since it was established as an MPA through Presidential Proclamation 306 (August 11, 1988). At the start, it was managed by an NGO, the Tubbataha Foundation until the early 1990s. This NGO led the eviction of seaweed farms in the islets in May 1990. Tubbataha Foundation was also involved in drafting the first of management plan that was presented in 1992. During the term of President Fidel V Ramos, he issued Memorandum Circular (MC) 128 dated 20 July 1995 establishing the Presidential Task Force for TRNMP. MC 128 served as the policy and program coordinating mechanism with the Secretary of Department of Environment and Natural Resources (DENR) as Chairman and the Chairman of the Palawan Council for Sustainable Development (PCSD) as Co-Chairs. The Presidential Task Force's members for TRNMP included the Secretaries of the Department of Tourism, Department of Budget and Management, the Commander of Naval District IV of the Philippine Navy, the Mayor of Cagayancillo and five NGOs.

On 7 November 1996, MC 150 turned over the Chairmanship of the Presidential Task Force to the Secretary of the Department of National Defense. The representatives of the DENR and the PCSD then became Co-Chair. Later, a Memorandum of Agreement (MOA) (5 June 1998) between the DENR and PCSD was signed stipulating the PAMB Chairmanship of the Governor of Palawan as PCSD representative. The MOA also provided for the remittance of all park collections into the Integrated Protected Area Fund (IPAF) under the NIPAS Act, although this financing scheme was not realized. The current TRNMP management set-up is based both on NIPAS and SEP laws.

Tubbataha Protected Area Management Board (TPAMB)

In essence, TRNMP has a two-tiered structure. At the top is the Tubbataha Protected Area Management Board (TPAMB), serving as the policy making body. By virtue of a MOA between the Provincial Government of Palawan and the DENR, the Tubbataha Protected Area Management Board was created in 1998. Hence, it was created to provide policy direction, promulgate rules and regulations, and administer the Tubbataha Trust Fund. It was first convened in 15 June 1999. The TPAMB meets once every quarter to discuss policy issues and decide on matters related to park management.

There were 11 original members. The late Gov. Salvador P Socrates representing PCSD served as the Chairman while the Regional Executive Director (RED) of the DENR served as the Vice-Chair. The other members were representatives from the Western Command, Provincial ENRO, Cagayancillo, Conservation International, Kabang Kalikasan ng Pilipinas Foundation, Inc (KKFPI), Saguda Palawan and Haribon Palawan. The Commander, Naval Forces West of the Philippine Navy (PN) and District

Commander, Coast Guard District Palawan (CGD-Pal) were eventually added to the list of members. This is in consideration of their vital function in the park's law enforcement of the Park. PN and CGD-Pal personnel are detailed in the Reefs on a year-round basis. The current TPAMB has 17 members. The additions are representatives from two NGAs (Philippine Commission on Sport Scuba Diving, Department of Tourism and Bureau of Fisheries and Aquatic Resources), one NGO (SAGUDA Palawan), one people's organization (Tambuli ta mga Kagayanen) and two representatives from the Palawan Provincial Board (Committee on Environment and Committee on Budget and Appropriation).

Based on the NIPAS Act of 1992, the PAMB is responsible for establishing policies and regulations concerning the management of the park. Hence, the TPAMB provide this role for TRNMP. Pursuant to NIPAS Act, the PAMB shall be composed of the Regional Executive Director, representative from the autonomous regional government, if applicable, the Provincial Development Officer, one representative from the municipal government, one representative from each barangay covering the protected area, one representative from each indigenous cultural community, if applicable, and at least three representatives from non-governmental organizations. If necessary, one representative from other departments or national government agencies involved in protected area management will be seconded. Following DAO 25 (1992), the MIMAROPA RED shall serve as chairman and advisor in matters related to the technical aspects of protected area management. PAMB membership, however, may be modified to suit the local needs or special requirements of a protected area. Hence, the TPAMB is a modified structure and an exception from the common practice of DENR chairmanship in all PAMBs.

A key function of a PAMB is the creation and implementation of a Management Plan. The PCSD, during its 70th meeting held in 26 November 1999, approved the Management Plan for Tubbataha. The TPAMB also adopted such management plan, which was developed through a process of consultation, workshops, stakeholders' analyses, focus group discussions and fora involving multi-sectors. This plan underwent a recent review the 'TRNMP Management Effectiveness Workshop' held on 18-19 November 2003. The inputs from participants shall be used in the subsequent revision of this plan.

TPAMB has created an Executive Committee (Exe Com) to resolve operational and administrative issues that arise from time to time. The Exe Com regularly meets once a month, while the full board meets once every quarter. It has currently six members, represented by the key agencies. It includes four NGAs (District Commander of Coast Guard District – Palawan, PENRO of DENR, Commander of Naval Forces West and Executive Director of PCSDS) and two NGOs (Project Manager of KKP- Palawan and Chair of SAGUDA). The Exe Com members provide substantial inputs in developing this Business Plan.

Tubbataha Management Office (TMO)

The second and lower tier is called as the Tubbataha Management Office (TMO), serving as the TPAMB's secretariat. This unit was formally established in June 2001 and has been handling the park's day-to-day operation. Under a typical PAMB, the Protected Area Superintendent (PASu) is the chief operating officer of DENR at the site. He/She shall be directly responsible to the PAMB and the RED. As a regulatory officer, he shall enforce the rules and regulations of the park. He shall also serve as the chief administrative officer to implement the management plan as detailed in the annual work program. The PASu shall be supported by a sufficient number of personnel to perform day-to-day management, protection and administration of the PA.

The personnel of TMO are the equivalent of PASu's staff complement. Hence, the TMO Park Manager is the de facto PASu of TRNMP. TPAMB Resolution No. 11 authorized the Exe Com to hire four staff to implement the annual work plan. The TMO is currently composed of these four personnel: one park manager, one technical assistant and two park rangers. The enforcement function is complemented by staff from the Navy and Coast Guard.

2. Issues in the Current Organizational Set-up

Sustainable Financing

The funding requirement for the current management set-up is only partly supported by the tourism receipts and financial contribution from the provincial government. From the estimated PhP 10 million requirement, more than 80% has been covered by a large external funding assistance. The UNDP/GEF Medium-Sized Project on the Conservation of TRNMP World Heritage Site has been providing counterpart funding to ensure the long-term conservation of the park through the KKP. From a total of US\$ 735,000, US\$ 380,000 comes from Packard Foundation while US\$ 385,530 is a counterpart from WWF-Philippines. This project started in 2000 and will end in September 2004. KKP has been working closely with TPAMB, TMO and other concerned institutions in project implementation. External grant funding is used to cover costs for the construction of the park ranger station, the purchase of capital equipment and for undertaking specific projects as reef monitoring and educational projects. Major supporters have been provided by Marine Parks Center of Japan/CRMP and Sulu Fund.

Management Plan

TRNMP's goal and programs are reflected in its Management Plan. The two-fold management goal is to conserve the unique and relatively pristine condition of the globally significant biological diversity and ecological processes of the TRNMP and to manage the Park's surrounding areas on a sustainable and ecologically sound basis. This goal is broken down into six management objectives: (1) stabilize and improve the status and condition of the coral reef system and seabird populations including its habitat within TRNMP; (2) prevent all forms of illegal and destructive activities within the Park and

vicinities; (3) conduct research activities that will serve to heighten understanding of the marine environment and aid management decision-making; (4) create an infrastructure and support system to effectively manage TRNMP; (5) enhance the capability of Cagayancillo residents to manage their resources in a sustainable manner; and (6) promote public understanding of the benefits of conserving Tubbataha.

In order to attain this management goal and objectives, five major programs are under implementation. The first program is 'Conservation Management'. The TPAMB conserves the globally significant biological diversity and other universal values of the Tubbataha Reefs through the vigilant enforcement of applicable laws and statutes, by increasing the management capacity of its members, its staff and stakeholders. It also entails the continuing development and evaluation of the existing management plan to support the long-term financing of resource management activities in the reefs. The second program is 'Conservation Awareness'. Long-term information, education and communication program to enhance the awareness of the general public regarding the importance of conserving the Tubbataha Reefs are being conducted. Well-informed stakeholders will make them better stewards of the TRNMP's resources, as well as supporters of its vision to make TRNMP a model WHS.

The third program pertains to 'Regulations, Policy and Advocacy'. Its rationale is to ensure that relevant policies and regulations are in place. This program also identifies the appropriate policy gaps and recommends measures to strengthen existing regulations that support effective implementation of the Park's Management Plan. 'Ecosystems Research and Monitoring' constitutes the fourth program. Ecological research and monitoring data gathered regularly shall provide the management with the scientific knowledge necessary for decision-making. The results of these research and/or studies, when translated into popular format, shall also enhance the conservation awareness of the general public. The fifth program relates to 'Sustainable Resource Management and Livelihood'. The TPAMB enhances conservation of the Cagayancillo islands by implementing suitable community-based sustainable resource management and livelihood strategies. Given that TRNMP is politically part of Cagayancillo, the community development initiatives are aimed at maintaining or enhancing the productivity of marine resources, which are essential ingredients for appropriate livelihood enterprises.

A more systematic evaluation of the management plan's implementation needs to be put in place. Objectives 1 and 2 have been largely successfully addressed with better law enforcement. The presence of armed park rangers from the PCG and PN have warded off intruders that helped improve the status and condition of the coral reef system and seabird populations. They have likewise reduced many forms of illegal and destructive activities within the Park and vicinities. For Objective 3, many groups have conducted relevant research activities that have been aiding management in decision-making. Such studies covered both bio-physical and socio-economic concerns. In the case of Objective 4 or the creation of an infrastructure and support system to effectively manage TRNMP, much improvement is needed and can be addressed by the creation/operation of a functional institutional mechanism. For Objective 5, the capability of Cagayancillo residents to

manage their resources in a sustainable manner have been enhanced through a series of trainings and capability building activities. These initiatives have resulted in the development of a CRM plan for Cagayancillo. With regard to Objective 6, several activities have been undertaken to promote public understanding of the benefits of conserving Tubbataha. Promotional activities, such as posters, t-shirts and caps are being marketed. A series of documentary films were likewise developed.

It is stressed that no matter how good the business plan is, it will be highly dependent on the quality of leadership of TPAMB, the management capability of the TMO staff, and the type of conservation partnerships that they can establish. Ideally, the current staff complements of KKP and TMO are needed to operate the park effectively.

Future Management (Congressional Bill)

The management of TRNMP shall be strengthened by the draft House Bill No. 5515 introduced by Representative Abraham Kahlil B. Mitra. This is titled 'An Act Establishing the Tubbataha Reef National Marine Park in the Province of Palawan as a Natural Park Under the NIPAS and the SEP, Providing for its Management and for Other Purposes'. This is the first concrete example of harmonizing the NIPAS and the SEP in terms of PA management. There is a need, therefore, to expedite the process of securing the Congressional Action for PA Bill 5515. Many of the current institutional constraints may be addressed by the passage of such bill. The enactment of this Bill is crucial to obtain a sustained financial assistance from the national government, by means of an annual budgetary allocation through the General Appropriations Act. Its approval is needed to set up a TMO with professional and reasonable amount of staff complement.

Given the current political climate, however, it is unlikely that the bill may be approved prior to the onset of May 2004 election. The more realistic scenario is to expect its passage towards the termination of the KKP project in late 2004. Hence, there is a need for another legal option to strengthen the current management set-up, and at the same time secure financial resources. An Executive Order (EO) is a complementary legal route that may be pursued. An EO is an issuance by the chief executive to implement or carry out an existing law or policy pertaining to a specific subject matter. It lays down the mechanics for their implementation.

In the context of TRNMP, the policy provisions to be implemented will refer to those found in Presidential Proclamation 306. Other elements may refer to the constitutional provisions on the environment and natural resources article XII and NIPAS law. This EO will be an interim legal framework for the operational management of TRNMP while the bill is pending in Congress. The EO may also provide the necessary funding during the interim period. Such funding may emanate from sources with similar justifications, eg biodiversity conservation and sustainable developments.

Annex 8 List of Respondents of GEF TRNMP Mission

GEF Initial Mission in Puerto Princesa, March, 2004

Key Interviews

Marivel Dygico, WWF Project Manager
Joel T. Carceller, Cagayancillo Municipal Mayor
Angelique Songco, Park Manager TRNMP TMO
Yasmin Arquiza, Chairperson, Saguda Palawan and TPAMB member
Arturo Faburada, CRM Specialist WWF Phils.
Joseph C. Padul, Municipal Agriculture Officer

Focussed Group Discussion

Tubbataha Protected Area Management Board Meeting (TPAMB)

Yasmin Arquiza	Saguda Palawan ----- NGO
Marivel Dygico	WWF Phils. ----- NGO
Joel Carceler	Mayor, Cagayancillo ---- LGU
Evelyn Cajigal	Department of Tourism --- Govt Agency
Rhodora Ubani	DENR-PENRO -----Govt Agency
Priscilla Adriano	DEN-PENRO -----Govt Agency
Mario Basay	Bureau of Fisheris and Aquatic Resources
Mateo Buncag	Municipal Councillor, Cagayancillo--- LGU
Angelique Songco	Park Manager, TRNMP
PO3 Abner Mase	Philippine Navy
Virgillo Tiongson	DENR- PENRO
Isidro Forlacion	Philippine Coast Guard

II List of Respondent of GEF Final Mission in Cagayancillo and Tubbataha May 18 – 26 and June 1, 2004

Key Informant Interviews – Respondents

Lina Sales Bundak, Municipal Accountant
Erico Magbanua, Fisher, KSK member
Rogelio Bunag, Jr. Municipal Assessor
Erico Magbanua, Kilusang Sagip Dagat/Bantay Dagat
Roy Magbanua, TNMP Park Ranger and Cagayancillo resident and spear fisher
Sofronio Cayao, Seaweed and Fish trader, newly elected municipal councilor
Rainerio Bundac, Local Businessman, rice trader, part-time fisher
Arnold Bunag, Municipal Planning and Development Officer
Luis Bundac Jr., President, Cagayancillo Seaweed Farmers Association and President,
Takas Fisherfolk Association
Garce Cayao, President, Barangay Lipot North Fisherfolk Association
Mondoñedo Iguana, Member, KSK and former illegal fisher
Joseph C. Padul, Municipal Agriculture Officer

Focused Group Discussion

Youth Group – Sangguniang Kabataan Officers

Pinky Cayapas, 18 SK Chairman 2nd year Civil Engineering
Merliza Conde, 17 AB Political Science, freshman year
Journey Cuyos, 19, 3rd year BA Education

Pangabuhi-an Foundation Officers and Members

Victor Pedigan, DECS, public school teacher
Luz Favila, Barangay Talaga, seaweed planter
Tina Bundac, Bookkeeper, municipality of Cagayancillo
Magdalena Sembrano, Sari sari store owner
Gemelyn Conde, Sari-sari store owner

Cagayancillo Women's Federation

Gloria Cardano, 39, former seaweeds trader and sari-sari store owner
Nely Madamag, 45, Sari-sari store owner
Emy Escobin, 26, Sari-sari store owner
Gabrilyn Fresnillo, 30, Homemaker
Lily Cayabo, 48, Homemaker

Fisherfolk and Seaweed Farmers

Sonnie Condesa - Vice Pres. of Fisherfolk Asso, Bgy. Iwahig

Ronald Cayaban - President, Fisherfolk Asso., Bgy.Lipot South
Alejo A. Como - Agar-agar grower, Bgy. Magsaysay
Nicolas Mompoy - Member of Fisherfolk Asso, Bgy. Calsada
Emilio Buñag – Member of Fisherfolk Asso, Bgy. Nusa

Garcy E. Cayao - Bgy. Kagawad Lipot North
Luis C. Bundac Jr - Bgy. Kagawad Tacas
Joey Escubin – Bgy. Bantayan
Mondoñedo Iguana, Member, KSK and former illegal fisher

**Participants from the Cagayancillo Stakeholders Consultation
May 24, 2004 at Mainland Cagayancillo**

Barangay/Purok Officials

1. Nilo T. Buñag - Bgy. Kagawad Lipot South
2. Peter B. Buñag - OIC Kagawad Lipot South
3. Garcy E. Cayao - Bgy. Kagawad Lipot North
4. Jose Sembrano - Tanod Lipot North
5. Rolly F. Bonales - OIC Kagawad Sta. Cruz
6. Jorge C. Conde - SK Chairman Sta. Cruz
7. Consuelo C. Bonales- Purok Treasurer Sta. Cruz
8. Douglas T. Favila - Punong Barangay Mampio
9. Carlos Conde - Purok Pres. Talaga
10. Jose Favila - Bgy. Kagawad Talaga
11. Cyrus B. Buñag - Bgy. Kagawad Iwahig
12. Gerardo C. Bundac - Purok Vice Pres Magsaysay
13. Lily C. Coñate Punong - Barangay Magsaysay
14. Nelson B. Favila - Bgy. Kagawad Tacas
15. Luis C. Bundac Jr - Bgy. Kagawad Tacas
16. Rogelyn M. Gapuz - SK Chairman Tacas
17. Diosdado B. Cuyos Sr. - Bgy. Kagawad Convento
18. Pinky C. Cayapas - SK Chairman Convento
19. Pacifico C. Bundac - Bgy. Kapitan Calsada
20. George B. Cayao - Punong Barangay Nusa

Government Offices

1. Mayor Joel Carceller, Cagayancillo
2. Norma P. Camo - Agri. Tech. DA. Cagayancillo
3. Kay Paalan - Agri. Tech. DA LGU
4. Frederico M. Gapuz - Treasurer's Office
5. Joseph C. Padul - Municipal Agriculture Officer LGU
6. Arnold Buñag - MPDC LGU

Fisherfolk

1. Sonnie Condesa - Vice Pres. of Fisherfolk Asso, Bgy.Iwahig
2. Ronald Cayaban - President, Fisherfolk Asso., Bgy.Lipot South

3. Alejo A. Como - Agar-agar grower, Bgy. Magsaysay
4. Nicolas Mompoy - Member of Fisherfolk Asso, Bgy. Calsada
5. Emilio Buñag – Member of Fisherfolk Asso, Bgy. Nusa

Ordinary Resident

1. Dexter M. Arol - Bgy. Magsaysay

Women's Federation

1. Gloria M. Cardaño - Women's Fed. President, Bgy. Iwahig
2. Anita G. Favila – Member of Womens Club, Bgy. Nusa
3. Cecile B. Sepico - Member of Womens Club, Bgy. Calsada

Barangay Nutritionists (BNs)

1. Vicky T. Condesa – Bgy. Mampio
2. Vida B. Cuyos – Bgy. Convento
3. Nelia B. Madamay – Bgy. Bantayan
4. Panie Conde – Bgy. Mampio
5. Ameliana Buñag – Bgy. Lipot South
6. Adora C. Favila - Bgy. Bantayan

Barangay Health Worker (BHW)

1. Elizabeth M. Palanca – Bgy. Talaga

KSK

1. Joey Escubin – Bgy. Bantayan
2. Mondoñedo Iguana– Bgy. Talaga

Youth

1. Jaime Bundal, Bgy. Nusa

Business Woman

1. Evelyn C. Favila – Bgy. Convento

Participants from the Puerto Princesa City Consultation on June 1, 2004

Government Agencies

- | | | |
|----------------------------|----------------------|---------------------------|
| 1. Col. Arturo Salazar | CS | Wescom |
| 2. Capt. Benhail Sevilla | CSNFW | NFW |
| 3. Capt. Rey S. Trajano | Governor's Office | Palawan |
| 4. Dante B. Cayanan | Tribal Chieftain | |
| 5. Celso B. Almonte | PIU | DA-BFAR |
| 6. Froilan M. Factor | OIC Special Projects | PPA |
| 7. Arnold Valdez | Tourist Receptionist | Provincial Tourism Office |
| 8. Alfredo L. Abordo | Asst. PBO | Provincial Budget Office |
| 9. CPC Isidro M. Poblacion | Dep. Commander | Coast Guard Dist. Pal |
| 10. SCPO Rufino A. Robles | OIC, OPNS | Coast Guard Dist. Pal |

11. Edmund M. Villaruz	Chief, FMS Division	ENRO- Province
12. Delia F. Sualog	Chief- ERDS/SSRS	DENR-PENRO
13. Priscilla Adriano	Chief PAWS	DENR-PENRO
14. Raymundo G. Padrones, Jr.	Legal Researcher	Provincial Legal Office
15. Cdr. Abe Celzo	PN CO PC 383	Phil. Navy, NFW
16. Capt. Armando S. Rodriguez	PN (MNSA) CNTF 41	NTF 41, NFW
17. Cdr. Romy Nebres, PN (CSC)	CO-PG-112	Philippine Navy
18. Joel A. Carceler	Mayor	Cayancillo
19. Mateo Buncag	Security	Cayancillo
20. Melanio B. Magbanua	Liason Officer	Cayancillo
21. Maribeth Caymo	PDO	PCSDS

Non-Government/People's Organizations

22. Emilio Bonbon, Sr.	Punong Barangay	Bgy. Sta Cruz, PPC
23. Dante B. Cayan	Tribal Chieftain	Cagayenen
24. Anthony S. Padilla	IPA Staff	IPA
25. Merla Foronda	Admin Staff	BPPI
26. Lilibeth Rinzon	Admin	Natripal
27. Nadia Palomar	Marine Coordinator	CI
28. Marivic Q. Bero	Paralegal Staff	Panlipi
29. Grace T. Sescon	Staff	IDEAS
30. Laurence Padilla	Staff	PCART
31. Berna Anzale	PC	World Vision
32. Gaspar T. Cardejon	Chieftain	Makata
33. Menzie C. Bungalso	Bgy. Secretary	Bgy. Matahimik
34. Jehu P. Cayaon	President	Tambuli Ta Mga Kagayanen
35. Edong Magpayo	Education Officer	PCC
36. Boy B. Pabon, Jr.	Station Manager	DWRM-Palawan
37. Ren T. Balofinos	Community Org.	Haribon Palawan
38. Mansueta N. Zabanal	APPDC	PPDO
39. Vicki Mendoza	PM	PIA-Palawan
40. Marivel Dygico	PM-Tubabataha	WWF-Phils
41. Zoe Latumbo	IEC Officer	WWF-Phils
42. Gerthie Mayo-Anda	Asst. Area Manager	ELAC
43. Mean Tablazon	Intern	ELAC
44. Terry Aquino	Volunteer	

45. Angelique Songco	Park Manager	TRNMP/TMO
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46. Yasmin Arquiza	Chairperson	Saguda-Palawan
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Dive Tour Operators/Dive Guides

1. Fern Morato	Dive Instructor	Island Divers
2. Omer Alanis	Dive Guide	Freelance
3. Urs Rechsteiner	Boat Manager	Queen Anne Pal., Inc.
4. Nonie Fernando	Boat Manager	Stella Maris

Academe

1. Herminio Palla	Instructor	WPU
2. Michael Pido	Professor I	PSU
3. Sabine Schoppe	Professor VI	WPU



PHOTOS BY RICKY NUNEZ

Public Elementary school
in Cagayancillo.



Cagayancillo Mayor Joel Carceller and TRNMP Park Manager Angelique Songco

FGD Women's Association in Cagayancillo



Typical boat used in Cagayancillo. Notice the blue LPG tank at the end of the boat on right side of photo. These types of LPG tanks are used for cooking.



Typical agricultural farm planted to corn crops. Notice the corn crops planted between the limestone rocks and tillable land which are common in Cagayancillo.





Sand bar in Tubbataha Reef National Marine Park. At left is the TRNMP ranger station.



TRNMP Ranger Station.



A brown boobie. Photo by Ricky Nunez



Youth Association in Cagayancillo pose in front of GEF-UNDP-WWF Project Office in Cagayancillo. At left is TRNMP Project Manager, Angelique Songco and on the left is Ricky Nunez researcher. Below is a group of fisherfolks and seaweed farmers after the FGD conducted by the researcher.





Above is a typical rainwater impounding system. Notice the pipes connected to the roofs. Potable water is scarce in mainland Cagayancillo. When rainwater catchment is not available, women and children fetch water in wells not too far from their homes which they use for bathing, washing and cleaning. Most of the rainwater catchments are storage of drinking water for the households.

Another water impounding system. The sign says: Let's protect our seas, stop illegal fishing





A view of the islets of Cagayancillo by the roadside.



Park manager and researcher take time with local resident fisherfolks and seaweed farmers during coffee break. The local stakeholders were attending a stakeholder's workshop organized by the LGU and WWF.

Local resident respondent during the UNESCO-WWF socio-economic survey in Cagayancillo.



Marivel Dygico, WWF Project Manager stressing a point during the stakeholder's consultation in Cagayancillo.