



Coral and Giant Clam Gardens: Experiences and Lessons in Establishing a Payment for Ecosystem Services (PES) Project in Taytay, Palawan, Philippines

Coastal and Marine Resources Management
in the Coral Triangle-Southeast Asia



**CORAL TRIANGLE
INITIATIVE**
ON CORAL REEFS, FISHERIES AND FOOD SECURITY

Coral and Giant Clam Gardens: Experiences and Lessons in Establishing a Payment for Ecosystem Services (PES) Project in Taytay, Palawan, Philippines

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ABOUT THE PROJECT

The Global Environment Facility (GEF) and Asian Development Bank (ADB)–funded Regional Technical Assistance (RETA) Coastal and Marine Resources Management in the Coral Triangle–Southeast Asia (TA 7813–REG or RETA 7813) operates in the Sulu–Sulawesi Marine Ecoregion, specifically in Indonesia, Malaysia, and the Philippines (or the CT3).

The project works with communities and local leaders to help them better manage their resources, become better prepared to face climate change effects, and to adopt environment-friendly and sustainable livelihood options. The project also aims to address natural resource degradation, poverty within coastal communities, and weakness in coastal and marine resources management policy implementation.

The project has three main outputs:

- Supporting CT3 governments in establishing an enabling environment for sustainable coastal and marine resources management;
- Addressing constraints to sustainable fisheries management and economic development in the coastal zone, such as illegal, unreported, and unregulated fishing, overfishing, and natural habitat destruction, among others; and
- Establishing a project management system to ensure effective project implementation.

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PREFACE

In archipelagic countries like the Philippines, coastal areas draw huge numbers of visitors, thereby contributing a substantial share to tourism revenues. This is especially true in the island province of Palawan, which is dubbed as the country's "last ecological frontier" due to its relatively pristine conditions. The province was visited by 1,162,439 foreign and domestic tourists in 2016, an increase of 15% over the previous year (<http://www.pna.gov.ph/articles/994366>). Puerto Princesa was the destination of most of these tourists, followed by the municipalities of El Nido, Coron, San Vicente, and Taytay — the latter recently identified as an emerging tourist destination.

The municipality of Taytay, with its more than 100 islands and islets, has a huge potential to become a prime tourist destination. However, in order to realize this potential, the town needs to be able to better manage and protect its marine resources, especially those associated with coral reef ecosystems. While these resources are considered to be in generally "good" or "very good" conditions, the benchmarking study conducted under this project found some coral reef degradation in several sites in Taytay Bay. These appeared to be mostly human-induced, attributed to overfishing or overexploitation and illegal practices, such as poaching and cyanide and dynamite fishing.

This book, *Coral and Giant Clam Gardens: Experiences and Lessons in Establishing a PES Project in Taytay, Palawan, Philippines*, provides an account of the pioneering efforts of a coastal municipality in establishing payment of ecosystem services (PES) as a sustainable financing mechanism to protect and manage its marine resources.

Chapter 1 of the resource book introduces the reader to Taytay, a municipality in northern Palawan, and provides a glimpse of the many tourist attractions it can offer. It also explains the concept of PES and the purpose for adopting this scheme. Chapter 2 describes the results of the benchmarking assessments (status of marine resources including economic valuation, socio-demographic characteristics of households, institutional/political profile of the study *barangays* or villages, and status of tourism), which informed the design of the PES scheme and its basic features.

Chapter 3 describes the PES scheme adopted in Taytay Bay, namely, the establishment of coral and giant clam gardens (CGCGs) as a means of coral reef restoration and protection. This chapter details the **process** of how the ecosystem service (ES) was defined, how the CGCG was conceptualized, and how the ES buyers and sellers were identified.

It also describes the establishment and monitoring of the underwater gardens, as well as the training provided to the fishermen who were involved in these activities. Lastly, it outlines the findings of the willingness-to-pay (WTP) study, whose results provided the basis for determining some of the proposed tourism fees.

Chapter 4 describes the structuring of the CGCG–PES deal and the crafting of the Memorandum of Understanding (MOU) for the project. It also outlines the proposed tourism fees and revenue sharing system. Chapter 5 focuses on the establishment of a conservation and sustainable tourism development fund and its importance, as well as the process of drafting the ordinance creating the fund. Chapter 6 summarizes the Taytay stakeholders’ experience and the lessons they learned in the course of establishing their CGCG–PES project, and identifies remaining issues that need to be addressed going forward.

It is the hope of the RETA 7813 Team that by publishing this resource book, institutions and communities engaged in the restoration, conservation, and management of natural resources will consider adopting PES as a mechanism for the sustainable financing of their initiatives.

The full length reports on the benchmarking assessment and the WTP study, as well as the manual on *Establishing and Monitoring Coral and Giant Clam Gardens*, are available at the CTI–CFF website (<http://www.coraltriangleinitiative.org/>) and the RETA 7813 page on the GEF/IW:Learnsite (<http://iwlearn.net/iw-projects/3589>).

Chapter 1

INTRODUCTION

The Municipality of Taytay

Endowed with a beautiful landscape and seascape, Taytay is reminiscent of an old Spanish municipality. The town is famous for its historical fortress, known to many as *Fuerza de Sta. Isabel* (or Fort Sta. Isabel), named in honor of Spain's Queen Isabela II. The fort was built in 1667 and completed in 1738 under the Augustinian Recollect Fathers and served as a military station during the Spanish colonial period. The 350-year-old fort with its own chapel and the nearby Sta. Monica Church are the most visible remnants of Spanish influence in the municipality.



N. Guevara

Façade of Fort Sta. Isabel with Taytay Bay on the other side of the structure

Bounded by marine environments on its left and right, with Taytay Bay in the east and Malampaya Sound in the west, the town of Taytay offers sea-based activities for tourists the whole year round, irrespective of the direction of the monsoon winds (Figure 1).

Approximately 10–15 minutes away from Barangay Poblacion, or the town center, is Lake Manguao, the only lake in mainland Palawan. This 640-hectare freshwater lake beckons to visitors who love nature, bird watching, boating, fishing, and camping.

Figure 1: Map of Taytay, Palawan



Source: D.R. Salony

Disclaimer: This is only a tourist map of Taytay, which features select destinations. Map is stylized and is not to scale. Please do not use as official reference. Map information retrieved from the Provincial Assessors Office and Tourism Council of Taytay in 2015.

The lake has a catchment area of about 4,425 ha and a forest cover of at least 50%. Declared as a municipal conservation area, it is known as a “haven to birds and heaven to birdwatchers” as it harbors at least 136 bird species, along with three endemic lake fish species and numerous other globally threatened wildlife species. It also remains as one of the country’s most unexploited lakes.

Taytay is recognized for its rich biodiversity with abundant wildlife and many endemic flora and fauna. It provides sanctuary for Palawan’s endemic birds such as the Palawan hornbill (*Anthracoceros marchei*), Palawan peacock pheasant (*Polypectron emphanum*), and hill blue flycatcher (*Cyonis lemprieri*). Taytay is also home to endemic mammals like the Palawan bearcat (*Arctictis binturong*), Palawan pangolin (*Mauis culionensis*), Palawan tree shrew (*Tupaia palawensis*), and many others.

Included in the list of the town’s many attractions is Malampaya Sound and its surrounding forests. The sound was declared as a protected area owing to its rich natural resources, particularly for the fishing industry. It is also one of only three locations in the country where critically endangered populations of the Irrawaddy dolphin (*Orcaella brevirostris*) are found. The numerous islands and islets in the sound are ideal for island hopping and snorkeling. The majestic Mt. Capoas stands as a backdrop to the sound. At 99 m above sea level, it is the highest peak in Northern Palawan.

Complementing these tourist attractions are water activities in Taytay Bay, such as swimming, snorkeling, and scuba diving. Even the most seasoned scuba divers would have difficulty choosing dive sites from among the many coral reef areas in the bay. For instance, there is Black Rock, which is known for its 90% live coral cover, marine turtles, and visiting reef sharks. There is also Nabat Island, an underwater photographer’s dream because of its reef wall that drops to 40 m, harboring a wide array of fishes of all sizes and colors. Many other islands have fringing reefs that have walls and drop-offs – features that divers often look for and rave about.

The above list of natural treasures of Taytay only proves that this lesser known town has a huge tourism potential, which is yet to be fully explored and sustainably developed. The application of a sustainable financing scheme through the imposition of acceptable user fees can support current efforts of the municipal government of Taytay to maintain and protect the town’s many attractions.

Payment for Ecosystem Services (PES)

Ecosystem Services

Ecosystems provide society with a wide range of services — from reliable flows of clean water to productive soil and carbon sequestration. People, companies, and societies rely on these services for raw material inputs, production processes, and climate stability (see Box 1 and Table 1 for a full breakdown of ecosystem service types as well as illustrative ecosystem services).

Box 1: What is PES?

Wunder (2005) defined PES as:

- a. a **voluntary** transaction where
- b. a **well-defined** environmental service (ES) (or a land use likely to secure that service)
- c. is being ‘bought’ by a (minimum of one) ES **buyer**
- d. from a (minimum of one) ES **provider**
- e. if and only if the ES provider secures ES provision (**conditionality**).

Why engage in PES?

PES is perceived as a promising and efficient approach that allows for the protection of ES by integrating them into the market system. It is one of the conservation tools that can be used in preserving existing marine habitats (e.g., coral reefs, mangroves).

Given the realities of lack of funding for conservation, PES serves as a basis for charging fees for the use of resources as source of funding and financing the conservation and protection of such resources.

Likewise, this innovative tool can be incorporated in creating and formulating environmental policies that can help in promoting sound management of natural resources.

The PES Scheme

PES is an incentive system that may be applied to modify the behavior of individuals whose resource management practices are resulting in negative environmental effects to other users. The scheme can be applied in cases where:

- There is an opportunity for an environmental service (ES) to be maintained. For example, for coral reefs, ecosystem services include nursery grounds for juveniles, protection against waves and storm surges, and sources of sand material for beaches;
- There are identified ES buyers or users and ES sellers or providers (they are not one and the same);

- The problem to be addressed is a conservation problem with a financing solution — and not an enforcement or a social problem;
- The price for the ES has been previously agreed upon; and
- The payment is made to ensure that the flow of ES is maintained and sustained.

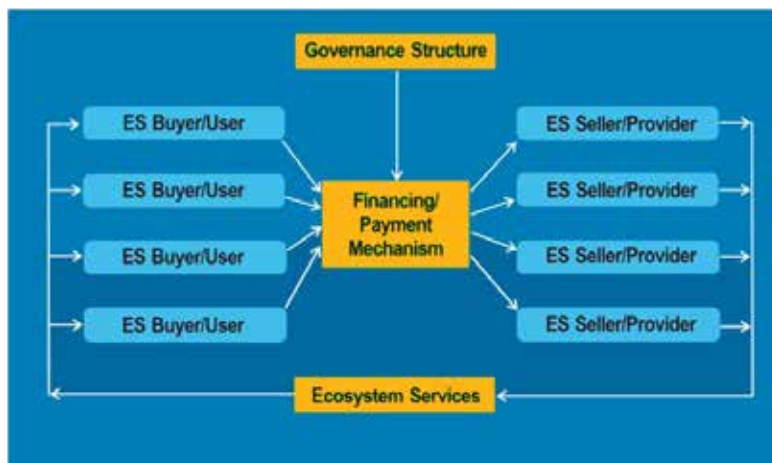
Table 1: Types of Ecosystem Services (ES)

	Forests	Oceans	Cultivated/ Agricultural lands
Environmental Goods	<ul style="list-style-type: none">▪ Food▪ Fresh water▪ Fuel▪ Fiber	<ul style="list-style-type: none">▪ Food	<ul style="list-style-type: none">▪ Food▪ Fuel▪ Fiber
Regulating Services	<ul style="list-style-type: none">▪ Climate regulation▪ Flood regulation▪ Disease regulation▪ Water purification	<ul style="list-style-type: none">▪ Climate regulation▪ Disease regulation	<ul style="list-style-type: none">▪ Climate regulation▪ Water purification
Supporting Services	<ul style="list-style-type: none">▪ Nutrient cycling▪ Soil formation	<ul style="list-style-type: none">▪ Nutrient cycling▪ Primary production	<ul style="list-style-type: none">▪ Nutrient cycling▪ Soil formation
Cultural Services	<ul style="list-style-type: none">▪ Aesthetic▪ Spiritual▪ Educational▪ Recreational	<ul style="list-style-type: none">▪ Aesthetic▪ Spiritual▪ Educational▪ Recreational	<ul style="list-style-type: none">▪ Aesthetic▪ Educational

Source: Millennium Ecosystem Assessment 2005 (<http://www.millenniumassessment.org>)

In its generic form, PES can include a suite of modalities characterized by the following: (i) payments are made to the resource owner or manager; (ii) payments reflect the “real” or scarcity value of the resource; and (iii) payments are used to ensure that the ecosystem or resource value is sustained or maintained.

No two PES schemes are the same, owing to the unique set or combination of elements that goes into each PES arrangement. However, most of them would have a common basic structural design (Figure 2). The model is conceptually appealing for both its simplicity and its flexibility as a template for different environmental and socioeconomic conditions.

Figure 2: General Structure of PES Mechanism

Source: S. Pagiola 2003 (Modified by Calanog 2017)

When successful, a PES deal will result in a steady stream of revenues for the ES seller and an assurance that the environmental objective will be maintained — for as long as payments are made. However, PES is not a magic solution that can end all environmental problems. In fact, it has limited application where an environmental problem can be solved purely by an economic or a technical solution.

Going back to the statement that “PES is an incentive system that may be applied to modify the behavior of individuals...,” translating it into concrete terms and applying it to the case of Taytay, we may ask several questions:

- How can PES be used as an incentive system for fishermen to stop overfishing, poaching, and other destructive practices (e.g., dynamite and cyanide fishing)?¹
- What substitute activities are proposed for them to earn a decent livelihood and, at the same time, conserve and even reverse the damage done to the marine resources?
- Can a fair payment scheme be formulated for them to abandon their old practices and switch to the new one being proposed?
- What mechanisms can be put in place to reinforce and sustain the new practice?

¹ Note that the project is not stopping fishermen from fishing (except in no-take MPAs) but only from their destructive practices.

The RETA 7813 Intervention

The Regional Technical Assistance (RETA 7813) funded by ADB and GEF aims to assist Indonesia, Malaysia, and the Philippines (CT3) in implementing actions under their respective Coral Triangle Initiative (CTI) national plans of action. The initiative is expected to result in the increased resilience of coastal and marine ecosystems and human communities in the three countries through improved management of such resources in the Sulu–Sulawesi Marine Ecoregion priority seascape within the Coral Triangle.

The RETA supports the introduction of more effective management of these resources, especially those associated with coral reef ecosystems. Building the resilience of these ecosystems amidst increased threats from climate change and human-induced impacts will help maintain their integrity and productivity, ensuring the improved socioeconomic status of coastal communities.

Among the major activities of RETA 7813 is broadening the sources of funding and increasing investments and allocations for marine protected area (MPA) management in the CT3. The RETA aims to identify appropriate sustainable financing (SF) strategies and design SF mechanisms including, but not limited to, PES and PES-like instruments, which may include the imposition of user fees, levies, and surcharges; setting up of trust funds; and seeking of grants from international and bilateral agencies, private corporations, or large international or national NGOs.

In Taytay, RETA 7813 adopted the PES framework for the establishment of an SF system for tourism development. Since 2014, after conducting a comprehensive resource assessment of Taytay Bay and extensive consultations with several stakeholders in the municipality, the establishment of CGCGs as tourism destinations was found most promising to spur the municipality's tourism development. The PES scheme is considered as one of the more efficient approaches for the protection of ecosystem services. It provides a new source of income for the conservation and sustainable use of ecosystems, and thus, has significant potential to promote sustainable ecosystem management (UNEP 2008).

The early stages of the PES project in Taytay are described in Box 2.

Box 2: How the PES Intervention Started in Taytay

In early March 2014, the RETA Team Leader and Regional Project Management Office Sustainable Financing Specialist/Resource Economist, together the Philippine Project Management Office's Coastal and Marine Resources Management Specialist and Key Biodiversity Area Coordinator conducted a scoping mission in Taytay, Palawan to identify prospective ecosystem services and potential buyers for a PES deal.

The team paid courtesy calls on key officials and interviewed concerned individuals about PES. During this mission, tourism was identified as the most likely ES that can be pursued. Mayor Romy L. Salgame himself expressed that tourism will help address the twin objectives of providing steady source of income not only for the LGU, but also for the local communities for conserving and protecting the rich marine resources of Taytay Bay. **Hence, for purposes of the PES project, tourism was going to be adopted as the banner ES for Taytay.**

Based further on the interviews and consultations, the initial islands identified for the PES intervention were: the Apulit Island Resort (AIR), which offers tourists an experience of a tropical paradise; it also included the islands of Pabellon (Pavilion), Teras, and Quimbaludan, which AIR uses to provide its guests with other kinds of tourism experiences like diving and snorkeling, swimming in a lagoon, or having a private dinner in a romantic and secluded beach area, etc. In the context of PES, Apulit Resort, together with other resort/tourism operators will be the ES users; the LGU and the *barangays* that have jurisdiction over Taytay Bay and the other islands will be the ES providers.

In addition to the marine environment, the LGU and the local communities can offer existing resort operators (the ES users) with other services like:

- i) supply of food such as rice, fish, meat, fruits and vegetables;
- ii) easy and fast access from Manila through Taytay's local airport system;
- iii) security through the *Bantay Dagat* and existing law enforcement/police force;
- iv) health and first aid services through the Northern Palawan Provincial Hospital; and
- v) access to other land-based tourist destinations like Lake Manguao, Malampaya Sound, waterfalls in Canique, Pamantolon, and Cataban, and many others.

Chapter 2

BENCHMARKING AND SITUATIONAL ANALYSIS

One of the key requirements in designing a PES scheme is a thorough understanding of the ecosystem where the project will be implemented. This entails establishing a strong benchmark of the area, which includes the physical, ecological, and social dynamics of the system. This chapter describes the importance of each component studied, the methods used in gathering data, and the key findings.

Actual field data gathering is the most visible set of activities in benchmarking, although it is just one of the stages in the whole process. Keeping in mind that the findings of the assessment will serve as the foundation for the PES framework, a thorough preparation prior to the field work is required. This critical pre-field work phase is outlined in Table 2 below.

Table 2: Preparatory Activities Before the Actual Benchmark Assessments

Activities	Considerations
1. Identify who or what unit in an organization will handle the PES project.	For instance in a local government unit (LGU), if the ES will be agriculture or food-based (e.g., rice or fish), the Municipal Agricultural Office will likely handle the PES. If it is environment-based (e.g., biodiversity conservation or provision of water from a watershed area), the most appropriate unit would be the Municipal Environment Office. If it is tourism-based, then the Municipal Tourism Office will be in charge.
2. Form a PES core team to specifically handle the benchmarking for the PES project.	The team should be multi-disciplinary whose members represent the kind of ES to be sold or provided. The team must also have someone from the social science group, e.g., economist, sociologist, or anthropologist (especially if dealing with an indigenous group or community).
3. Define the Terms of Reference (TOR) for undertaking the benchmarking activities	The terms should clearly define the scope of work, duration of the activities, and date of delivery. It will help if the outline of the benchmarking is provided.

continued on next page

Table 2 continued

Activities	Considerations
4. Look for an organization that can be commissioned to do the job.	The organization should have a reputable background and proven track record in conducting benchmarking or situational analysis. Research institutions and the academe are the likely candidates.
5. Meet with the organization and agree on the TOR	When an agreement is reached, prepare the necessary Contract of Services.

Taytay Benchmarking

A team of researchers² from the Western Philippines University (WPU) in Puerto Princesa City was commissioned by RETA 7813 project to carry out the benchmarking assessment for the PES initiative. The study, conducted from August to December 2014, covered the following major areas:

- Present condition of marine resources in four identified sites in Taytay Bay;
- Economic valuation of the marine resources;
- Current status and conditions of tourism in the municipality; and
- Socioeconomic profile of and institutional arrangements in the selected communities.



The PES benchmarking team all ready for the field data gathering (also in the photo are SF Specialist Lope Calanog and CMRM Specialist Benjamin Gonzales)

² The WPU research team was composed of Roger G. Dolorosa, Ria S. Samaniego, Rodulf Anthony T. Balisco, Sol de Villa B. Rama, Joie D. Matillano, Allaine T. Baaco, and Jonson M. Javier.

MARINE RESOURCES

The sites for this 2014 assessment included the islands of Apulit, Lopez, Tetas, and Pabellon. Previously surveyed areas for a similar study conducted in 2007 in the first three islands were revisited with the aid of a global positioning system (GPS). The marine resource assessment focused on three major areas: marine plant communities (seagrasses and seaweeds), coral reefs, and reef fish and fisheries. Together, they constitute a complex web of tightly interacting components that support each other and other life forms in the marine ecosystem, and beyond. Below are just a few examples of such key interactions.

What is commonly overlooked is that marine plants, like trees and other terrestrial plants, are major producers of oxygen which humans and other members of the animal kingdom need in order to live.

Seagrasses stabilize sand and mudbanks, protecting the seafloor from erosion. Coral reefs provide a similar protective function. They break the extreme force of waves especially from storms, water surges, and tsunamis, thereby helping prevent coastal erosion and flooding that often result in the loss of lives and property.

Seagrass beds and coral reefs alike are better known as habitat and refuge for many fish species and marine life. They also provide the most ideal environment for spawning and nursery activities for many commercially important species of fishes, mollusks, and other marine invertebrates. Prawns specifically spawn among seagrasses, where the juveniles live up to a certain point in their life cycle.

Seaweeds range from the microscopic phytoplankton to the giant kelps. Many of the seaweed species provide shelter and food to most fishes, while some of them constitute a regular part of people's diets in coastal communities. The edible red algae, *Pyropia yezeonsis* and *P. tenera* (*nori* in Japanese), are either eaten raw, cooked, or processed into snack foods, but they are most commonly known for making *sushi* wrap. Many seaweed species are processed and used as ingredients for a variety of food, health, and cosmetic products. Like the tropical forests, seaweed forests are becoming a valuable source of medicines; some species have been found to have anti-inflammatory, anti-microbial, and even anti-cancer elements.

Unlike seaweeds, seagrasses have high cellulose content. Thus, relatively fewer animals can directly feed on them — the *dugong* or seacow, green sea turtles, and some rabbitfishes (*iganids*) are some examples.

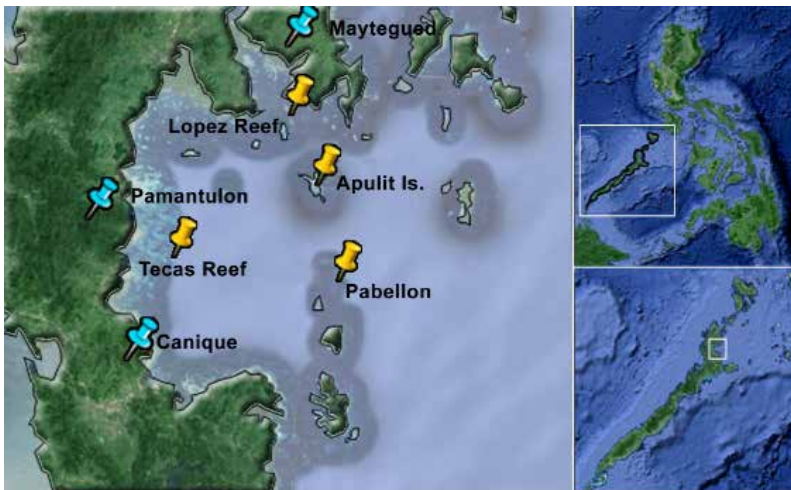
The role of seagrasses and seaweeds as a nutrient source continues even after they die, as their detritus provides food for sea cucumbers, crabs,

and bottom or filter feeders. Further decomposition releases nutrients into the water, which are reused by the seagrasses and phytoplankton themselves, which are in turn eaten by another set of sea creatures.

Not to be overlooked are the reef fishes, many of which serve other important functions in our oceans, along with their respective roles in the marine food web, e.g., feeding on phytoplankton and also being fed on by the larger target fishes. Herbivores like surgeonfish and parrotfish keep some of the algal species from taking over the coral reefs. In addition to their ecological value in the marine ecosystem, reef fishes also provide fisher families with their major source of income and food.

The interdependence of marine plant communities, coral reefs, and reef fishes makes it obvious that the health of one component depends on the health of the others. And a healthy reef ecosystem means one that is teeming with a wide diversity of marine life and with a very high attraction value to tourists, many of whom travel across the world just to enjoy them. It was therefore deemed necessary to look at the status and condition of these three major components of the marine ecosystem, in addition to assessing their economic value. The map in Figure 3 below shows the sampling stations for the marine resource assessment (yellow pins) and the *barangays* covered by the socioeconomic and institutional studies (blue pins).

Figure 3: Site Map for the Benchmarking Study in Taytay Bay



Source: Dolorosa et al. 2014

The results of the benchmark assessments presented below constituted a major input into the PES design and the formulation of an SF scheme for the protection and conservation of marine resources of Taytay.

Methods of Data Collection

Marine plant communities. Systematic sampling using the transect quadrat method was carried out in the reef flats of Apulit, Lopez, and Tecas Islands. Random throw using quadrat was also done in Pabellon, although systematic sampling was not applied due to this island's narrow reef flat, and the seaweed bed in this site occurred only as a strip on the shallow portion of the reef.

Seaweed and seagrass species intercepted were identified *in situ*. The relative cover and relative frequency of each species were estimated to determine the proportion of the species to the total cover (dominance) and the occurrence (abundance) of all seaweed species, respectively.

Coral reefs and reef-associated invertebrates. The same sites used for the marine plant assessment were surveyed. In Pabellon, an area with high coral cover was selected with the help of a local guide. Six stations, each with a 100 m x 5 m belt transect each were laid: Apulit (3), Lopez (1), Tecas (1), and Pabellon (1). The surveyed sites were generally 4–6 m deep along the edge of the reef (reef crest), where there was high coral cover. Percent live coral cover, macroalgae, rock, rubble, and other biotic and abiotic components of the reef were measured. The species of invertebrates found along the transect lines were counted, and the sizes of some commercially exploited species were measured to the nearest 1 cm.

Reef fish and fisheries. Six stations were established along with the coral survey. All fishes encountered in the 100 m x 5 m belt transects were identified and counted, and their lengths estimated. These were later categorized as target, major, or indicator species. Surveys were conducted from 9:00 a.m.–2:00 p.m. in the reefs within depths of 3 m–8 m.

Data on fishes listed were compared with those collected in Apulit Island and surrounding reefs in 2007. This comparison specifically included the number of families and species occurring in the area; the number of target, major, and indicator species; and the estimated fish biomass.

In addition, 80 fishermen selected at random³ were interviewed using a structured survey instrument to determine the status of fisheries

³ Twenty fishermen from Pamantolon, 30 from Canique (or Pularuquen), and 30 from Maytegued were randomly selected for the fisheries status data. These *barangays* have administrative jurisdiction over the surveyed sites.

activities in the study sites. Data on the fishing gears used and their catch composition, the number of hours in operation, catch-per-unit effort, and exploitation status were gathered.

Economic valuation. To estimate the economic value of marine resources in the study sites, data from the resource assessment were used as inputs for the production valuation method. Data from the Tourism Council were used in computing travel costs. Other methods employed include benefit transfer and avoided future cost. Net loss in fishery production was computed based on the potential and actual fish biomass in the surveyed sites.

The contingent valuation method (CVM) was used to determine the future use/option value, bequest value, and existence value of the resources. A total of 48 randomly sampled households involved in non-fishing livelihoods and 32 fishers from the *barangays* of Canique, Mayteged, and Pamantolon were interviewed, as well as 30 tourism-related establishment owners and service providers in the Poblacion. Only one of the two resort owners operating within the study sites was personally interviewed.

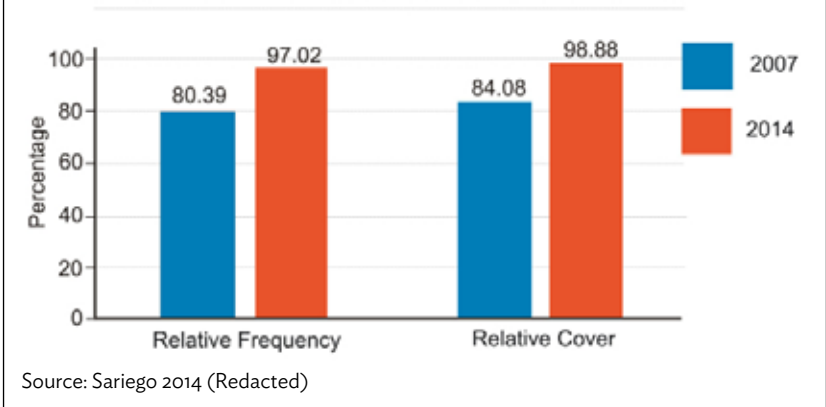
General Findings

1. Marine Plant Communities

- The different sites studied showed low seagrass and seaweed species diversity. Only two seagrass species were found in the study area (*Halophila novalis* and *Cymodocea rotundata*), which were also observed during the 2007 assessment in Apulit Island.
- A total of 24 seaweed species were recorded from the four islands: 10 brown algae (*Ochrophyta*), 8 green algae (*Chlorophyta*), and 6 red algae (*Rhodophyta*). With the exception of *Chlorophyta*, which increased from six species in 2007 to seven in 2014, *Ochrophyta* decreased from six species to five, and *Rhodophyta* drastically dropped from nine species to only one.
- The most dominant and abundant species is the brown seaweed. The different *Sargassum* species contributed largely to the dominance of the brown algae in the study area. The abundance and dominance of these species increased by 21% and 17% respectively in the past seven years (Figure 4). *S. cristaeifolium* dominated in the islands of Apulit, Tetas, and Quimbaludan, while *S. polycystum* was the most abundant and dominant in Pabellon.

Although algae are an important part of marine ecosystems as they provide food for herbivores, the change from coral- to algae-dominated reefs is however a global concern (Figure 5). This shift could be due to several chronic pressures favoring the growth of algal species, namely:

Figure 4: Comparison of Relative Frequency and Cover of *Sargassum* Species in Apulit Island , 2007 and 2014



loss of herbivores due to overfishing; increase in nutrient inputs causing eutrophication;⁴ and other disturbances that destroy corals such as bleaching, crown-of-thorns outbreaks, coral diseases, and many others. Coral rubble resulting from such disturbances provides suitable substrates for the attachment of algae. In the Great Barrier Reef of Australia, increased abundance and distribution of *Sargassum* were attributed to nutrient runoff (Bell and Elmetri 1995). These species hinder coral growth by shading and abrasion of coral polyps (River and Edmunds 2001).

Figure 5: Shift from Coral-to-Algae-dominated Reefs Signals Reef Degradation



⁴ Excessive nutrients in a body of water, usually caused by runoff of nutrients, such as animal waste, fertilizers, and sewage, result in a dense growth of plant life. The researchers recommended a study on the nutrient load, particularly around Apulit (being an island resort), to determine whether eutrophication caused the increase of *Sargassum* in the area.

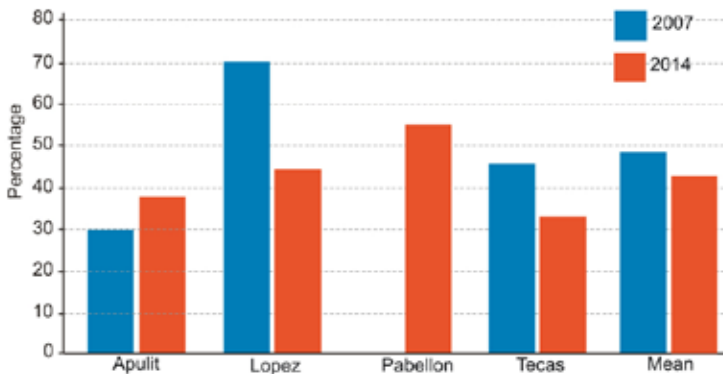
On healthy reefs, algal dominance may be gradually reversed, as corals recover and establish themselves in the disturbed area. However, on reefs with reduced resilience, macroalgae may develop into thick mats that overgrow coral remnants and exclude coral recruitment (Sin et al. 2012). This could lead to failure of reef recovery and long-term reef degradation (McCook et al. 1997), further resulting in a host of other ecological and economic impacts.

2. Coral Reefs and Reef-associated Invertebrates

Live hard coral cover

- The percent hard coral cover in Apulit increased from 31% in 2007 to 38% in 2014. A decline was noted in both Lopez and Tepas. Pabellon, on the other hand, showed the highest percentage of live coral cover (Figure 6). However, statistical comparison revealed no significant changes ($p > 0.05$) within the studied sites between 2007 (50%) and 2014 (43%).⁵

Figure 6: Comparison of Percent Live Hard Coral Cover in Selected Islands in Taytay Bay, 2007 and 2014



Source: Dolorosa 2014 (Redacted)

- Reef conditions in Apulit were generally found to have improved from 2007. Areas surveyed were reef slopes, which were not colonized by *Sargassum* spp. and may be the reason why the corals thrived over the past seven years. The opposite was noted in the other areas, also as reported by PCSD in the same year (2014). The decline in Lopez Island may be attributed to uncontrolled or illegal (cyanide and dynamite) fishing activities, while it could have been due to the effects of siltation in Tepas Reef.

⁵ T-tests were used to compare the percent live hard coral cover and abundance of giant clams and long-spined sea urchin (*Diadema setosum*) in 2007 and 2014.

- Nevertheless, the average live hard coral cover of 43% for all surveyed sites fell within the “good” category (DENR 2013),⁶ which is corroborated by the coral cover of 41% reported by PCSD in 2014. However, some of the reefs in Taytay Bay were also observed to be gradually overtaken by macroalgae, a situation which may worsen if not immediately addressed.

A total of 11 species of reef invertebrates spread over two phyla, five classes, seven families, and eight genera were recorded in the reef areas surveyed.

Giant clams

- The abundance of giant clams varied among the sites and between the 2007 and the 2014 surveys. The average giant clam density of 8.10 ind/100m² in 2014 was lower than the 11.45 ind/100m² recorded in 2007, although the difference is not significant ($p > 0.05$).
- There was a big increase in the giant clam population in Tecas Reef, while a large decline was noted in Lopez. The increase in Tecas could be due to the effective guarding of the reef, while the decline in the other areas could be associated with uncontrolled exploitation. Lopez Island is frequented by fishers, which could be the reason for such a sharp drop.
- In spite of the noted decrease in their population, giant clams were nevertheless found to be more common in Taytay Bay compared to those in Malampaya, Bacuit, Turtle, and Binunsalian (Picardal and Dolorosa 2014).
- Five species were observed, which include the very rare *Hippopus porcellanus* and *Tridacna derasa*. The presence of exceptionally large-sized *T. derasa* in Apulit reflects the importance of island resorts (which have the motivation and the means to patrol their reefs) in conserving biodiversity.
- The shell lengths of *H. porcellanus* and *T. derasa* ranged from 20 cm–45 cm and 40 cm–70 cm, respectively; they were likewise found to be larger than their reported maximum shell lengths as shown in Table 3.

Diadema setosum

The long-spined sea urchin, *Diadema setosum*, occurred excessively in all the surveyed sites except in Pabellon, where the observed density was 0.5 ind/100 m². The highest density of 215 ind/100 m² was recorded in Lopez, while it ranged between 26 ind/100 m²–34 ind/100 m² in the other sites. The overall mean density in this study (69 ind/100 m²) was slightly lower than the 74 ind/100 m² observed in 2007, but the difference is not statistically significant ($p > 0.05$).

⁶ DENR classification of live coral cover: poor, >0%–10%; fair, 11%–30%; good, 31%–50%; very good, 51%–75%, and excellent, 76%–100%.

Table 3: The Maximum Shell Lengths of Giant Clams in Taytay Bay

Species	Maximum shell length (cm)	
	Poutiers 1998	This study 2014
<i>Hippopus porcellanus</i>	40	45
<i>Tridacna crocea</i>	15	15
<i>Tridacna derasa</i>	60	70
<i>Tridacna maxima</i>	35	25
<i>Tridacna squamosa</i>	40	25

Source: Dolorosa 2014

Sea urchins are also a key component of the reef ecosystems as herbivores. A healthy reef may only require a *D. setosum* density of about 10 ind/100 m² because higher numbers can cause substantial damage to the reef (Qiu et al. 2014). Their presence well above the ideal density, especially in Lopez, could be associated with the abundance of food and the absence of predators. If such outbreaks are left unchecked, coral reefs where *D. setosum* abound could not remain healthy for an extended period.⁷

Possible solution to the problem. Studies involving the translocation of *D. setosum* from sites where they exceed normal levels to algal-dominated reefs may be tested. The promotion of *D. setosum* as exotic food for tourists may also provide additional income for the locals.

3. Reef Fish and Fisheries

- A total of 19 fish families and 156 fish species were recorded in the four sampling stations. The reefs surrounding Apulit Island have the highest number of species, followed by Lopez, and Pabellon. Tecas Reef had the least number of fish families and species (Table 4).
- Although live coral cover increased in Apulit Island, the number of fish species found in the area generally declined. The 2007 study noted 107 fish species, while this survey encountered only 92; a reduction was also seen in the number of target, indicator, and major species (Table 5). This suggests that there could be overharvesting of fishes in the recent past, particularly of the red groupers, which command a high price in the market.

⁷ Sea urchins are also considered bioreroders. A bioreroder is a marine organism that helps convert coral reefs to sand.

Table 4: Summary of Fish Family/Species Composition and Categories in the Surveyed Sites, 2014

Island/ Reef	No. of families	No. of species	Target species	Major species	Indicator species
Apulit	16	93	51	30	12
Lopez	13	71	34	9	28
Pabellon	17	51	23	11	17
Tecas	11	39	18	5	16
Total	19	156	84	21	52

Source: Balisco 2014

Note: Many of the species were observed in all four sites, thus the totals are less than the sum of the families and species listed under each column.

Table 5: Comparison of Categories and Fish Families and Species in Apulit Island, 2007 and 2014

Category	Number of families		Number of species	
	2007	2014	2007	2014
Target species	10	10	58	53
Indicator species	2	2	35	30
Major species	8	4	14	9
Total	20	16	107	92

Source: Balisco 2014 (Redacted)

- The number of species of the herbivorous parrotfishes (*Scaridae*) decreased from 7 to 5. The reduction might have partly contributed to the increase of macroalgae (e.g., *Sargassum*) in the study sites. On the other hand, while the number of the herbivorous *D. setosum* increased, this did not seem to be adequate to neutralize the bloom of *Sargassum* in the area.
- Despite the observed decline, the indicator families, e.g., butterflyfish (Family *Chaetodontidae*) and damselfishes (Family *Pomacentridae*) were abundant in the Apulit sampling stations. These species are highly associated with coral reefs, and damselfishes are known to be highly territorial. Thus, their presence suggests that the reef conditions in these areas are in a relatively good state.
- As an important determinant of the productivity and condition of reef areas, fish biomass was also calculated. On the average, the computed fish biomass was 82.59 MT/km². Using the category of Hilomen (2000), this means that fish biomass in these sites is “very high”. Among the surveyed sites, Lopez had the highest fish biomass (104.26 MT/km²), while Tecas had the lowest at 16.27 MT/km² (Table 6).

Table 6: Number of Individuals and Fish Biomass in the Study Areas, 2014

Island / Reef	Number of individuals 1000 m ²	Category (Hilomen et al. 2000)	Biomass (MT/km ²)	Category (Hilomen et al. 2000)
Apulit Is.	2,656	High	104	Very High
Lopez	4,638	High	130	Very High
Pabellon	4,266	High	36	High
Tecas	1,184	Moderate	16	Low
Average	3,186	High	72	Very High

Source: Balisco 2014 (Redacted)

4. Estimated Economic Value of Marine Resources

Economic analysis provides a powerful tool for decision-making based on the economic value of the ecosystem. It also helps us understand how dependent the economy is on the ecosystem being studied. In Taytay, knowledge of the current economic value of its marine resources would help identify opportunities and strategies to promote their protection and management.

The total economic value of the marine resources in the surveyed sites was estimated to be around P53 million/yr. This is based on the direct, indirect, and non-use values of the marine resources in the four islands/reef sites (Table 7). Among the numerous benefits provided by these marine resources, their recreational value to tourists had the highest economic value of P47 million/yr.

The generally favorable conditions in Taytay Bay are important in the effort to promote it as a prime marine tourist destination. These include the “good” status of coral reefs (average of 43% live coral cover) in selected sites within the bay; the relatively “high” number of fish species and “very high” fish biomass; the presence of exceptionally large-sized giant clams; and the abundance of other reef invertebrates. However, while coral cover has increased in Apulit, a general decrease was noted in the other areas. This suggests a reduction in fishery resources and, therefore, a negative impact on the livelihood of fishing communities, as well as on the tourism attraction value of Taytay Bay.

The data on fish extraction in the three *barangays* tells an interesting story that we can learn a lesson from. Reported annual fish extraction was estimated at ~50 MT in Pamantolon, about 250 MT in Canique, and an even higher ~350 MT in Maytegued. The fishermen interviewed in Pamantolon were also engaged in seaweed farming.

**Table 7: Total Economic Value of Marine Resources
in the Study Sites, 2014**

Benefits	Annual Value (P/yr)
Direct Use	
Fisheries ^a	3,670,400
Recreation (tourists) ^b	47,002,279
Recreation (resort owners) ^c	422,856
Research and education ^a	113, 901
Indirect use	
Carbon sequestration and storage ^a	636,844
Coastal protection ^a	1,058,212
Non use	
Existence value, option or future use, bequest value	139,043
Total economic value	53,043,535

Source: Dolorosa et al. 2014

a. Estimated direct use values of coral reefs in the three island sites and reef site in Taytay Bay, Palawan

b. Estimated recreational value of Apulit island as a recreational site to local and foreign tourists in 2013

c. Estimated recreational value of coral reefs, sea grasses, fish, and other marine species to the resort owners in the islands of Apulit and NoaNoa, Taytay Bay

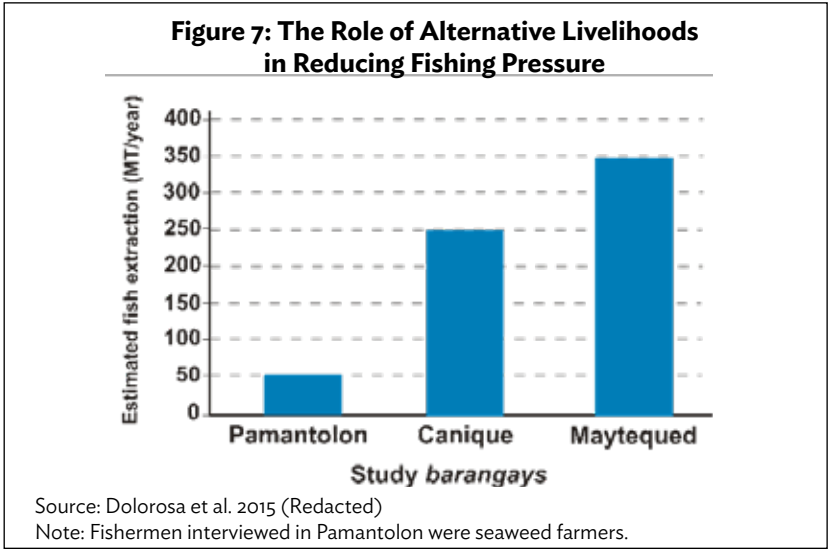
Note: Average exchange rate for November 2017 is \$1 ~ P51.

For Taytay to adequately satisfy the increasing demand for its marine resources, there is clearly a need to address the drivers of reef degradation. For instance, coral reefs are threatened by *Sargassum*, which have overtaken some reef flats extending towards the edge of the reefs. *Sargassum* species can be used as special garden mulch and as raw material for liquid fertilizer and alginate production. The annual stand of *Sargassum* species in Apulit Island alone was estimated at 65 MT; the market price of dried (cultivated) *Sargassum* in Taytay is P10/kg (2014).

However, there is now a law being enforced through the Bureau of Fisheries and Aquatic Resources (BFAR) prohibiting the collection and harvesting of *Sargassum*. The local communities, with support from the local government, may need to negotiate with the proper authorities on this matter. With proper study and appropriate regulation, harvesting or trimming of *Sargassum* may be possibly allowed for corals to recover in some reef flats where their cover has exceeded desired levels.

A coral reef restoration project such as coral gardening may be implemented to restore degraded areas where appropriate. In addition, the promotion of community-based coral gardens as ecotourism sites

will not only result in increased coral cover in Taytay Bay, but also provide alternative livelihood opportunities for the local people. And as demonstrated in Pamantolon, alternative sources of livelihood can help reduce fishing pressure on the bay (Figure 7).



While large individuals and rare species of giant clams are found in Apulit Island, greater protection is needed to manage and restore their populations. The giant clams (*T. derasa*, *H. porcellanus*, *T. squamosa*) are distantly located from their conspecifics, requiring the need to establish properly designed giant clam gardens not only for effective protection, but to enhance the recruitment of juveniles for restocking of depleted areas (Teitelbaum and Friedman 2008). A newly established giant clam garden in Samal Island in Davao del Norte is becoming a popular tourist destination and an important source of income for the community (Gumarao et al. 2014).

TOURISM

Tourism associated with coral reef ecosystems highly benefit tropical and especially archipelagic countries like the Philippines, which are blessed with this resource. Tourists travel from across the globe to enjoy the cultural/recreational opportunities (e.g., snorkeling, scuba diving, glassbottom boat viewing, and other marine-based activities) that these ecosystems offer.⁸

⁸ The benchmark assessment found that with the exception of South Korea, China, Japan, and Australia, the top foreign visitors to Taytay in 2010 and 2011 came from the northern hemisphere: France (267), USA (144), Canada (87), Germany (75), United Kingdom (67), Sweden (44), and Switzerland (42).

The scoping mission undertaken during the earlier stages of this project identified tourism as the banner ecosystem service for Taytay. However, in order to make informed decisions on the most feasible PES scheme for pilot testing, it was necessary to understand the current status of tourism in the province in general, and in the municipality of Taytay in particular. Thus, the benchmarking study examined the following: profile of tourists in Taytay, prevailing conditions of tourist destinations and attractions, and existing tourism-related services. It also identified areas for improvement in order to attract more tourists and make their Taytay experience more enjoyable and memorable.

Methods of Data Collection

Basic tourism data. Primary data were collected using key informant interviews (KIIs) and focus group discussions (FGDs). The study used purposive sampling to identify key informants which included business owners, local leaders, and community members engaged in tourism or tourism-related activities. Secondary data were gathered from a variety of sources such as logbooks of resorts and guesthouses in Taytay; records of the Municipal LGU, the Municipal Planning and Development Office (MPDO), and the Municipal Tourism Office (MTO); national, provincial, and local legislation archives; and records from the three study *barangays* of Canique, Mayteged and Pamantolon.

Existing and potential tourism attractions were identified before making actual visits to the areas to conduct a field survey of tourism infrastructure and support facilities.

1. Basic Tourism Data in Taytay

Tourist Arrival Rates and Brief Profile of Visitors

- The 9,548 visitor count in 2011 is considered an all-time high for Taytay. However, this number is quite low if seen in the context of provincial data. Records showed that from 362,565 in 2009, the annual number of visitors to Palawan rose to 883,019 by the end of 2013 (www.lgsp-led.ph/assets/Palawan.pptx), or a 143% increase in five years.
- Between the years 2010 and 2011,⁹ tourist arrivals in Taytay increased by 48% — from 6,452 to 9,548. The increase is more pronounced for foreign tourists, which almost tripled from 646 to 2,066. An increase of 29% was observed for domestic tourists¹⁰ in the same period. Overall, foreigners accounted for only 10% of the tourists in 2010, but this figure more than doubled (22%) the following year.

⁹ Tourist arrival data used in the study were for the years 2010 and 2011 since the more recent records were either incomplete or found to be inconsistent.

¹⁰ The term “local” or “domestic” tourists loosely refers to both “real” tourists and other guests like car or van drivers who lodge in town for the night, as data from accommodation facilities in mainland Taytay do not distinguish between the two.

- The peak season is from March to May for local visitors, and from December to March — the winter months in western countries — for foreign visitors.

Tourist Spending on a Daily Basis

Estimates of tourists' daily expenses in the municipality varied greatly, depending on whether the tourists stayed in exclusive island resorts or in any of the guesthouses in the town proper (Poblacion). The Apulit Island Resort (AIR) has a published daily rate for room and full board per person of P15,000. In contrast, guesthouses in the Poblacion usually cost from P600–P1,500.00/person/day depending on the type of accommodation and meal options. These figures do not include other expenses which may be incurred by tourists. There are no readily available data on costs for tourism activities like snorkeling, scuba diving, island hopping, or inland tours.

Occupancy Rates and Lengths of Stay

- Based on 2014 records when this study was conducted, the total number of guest rooms available in Taytay was 1,568 — equivalent to a room availability of 47,040/mo or 564,480/yr.
- Using the 2011 tourist arrival data, the average year-round occupancy rate for all accommodation facilities in the municipality was computed at 22%, with occupancy in February being the highest (25%) and September and March, the lowest (19%).
- Among all the hotels/inns in Taytay, PEM's Pension House recorded the highest occupancy rate of 45% in 2011, while Casa Ysabelle Pension had the lowest at 8%.
- The 2011 data showed that guests in Apulit and Flower Island Resorts stayed longer (minimum of 3.5 days) than those in the town proper (2 days maximum). In the Poblacion, only John 15:7 Lodging Inn had guests who stayed for more than two days. Even at PEM's Pension House and Tay Lelong's which were the more popular ones among visitors, guests usually stayed an average of less than two days.
- In terms of the daily number of guests, AIR had the highest at 29, with PEM's Pension House running second, but with only about 10 guests per day. On the average, there were only about five tourists/day in Taytay proper — very low compared with El Nido and Puerto Princesa City hotels.

Many of the guests in mainland Taytay are in town for short business-related trips. In contrast, those who stay in exclusive island resorts purposely go there for R&R&R – rest, recreation, and rejuvenation – thus the longer periods they need to enjoy their grand vacation.

2. Estimate of Revenues Generated from Tourism

The annual income of accommodation facilities in Taytay was estimated using the average number of guest nights per lodging facility, multiplied by the cost range per guest night. The figures refer to income based solely on accommodation costs (Table 8).

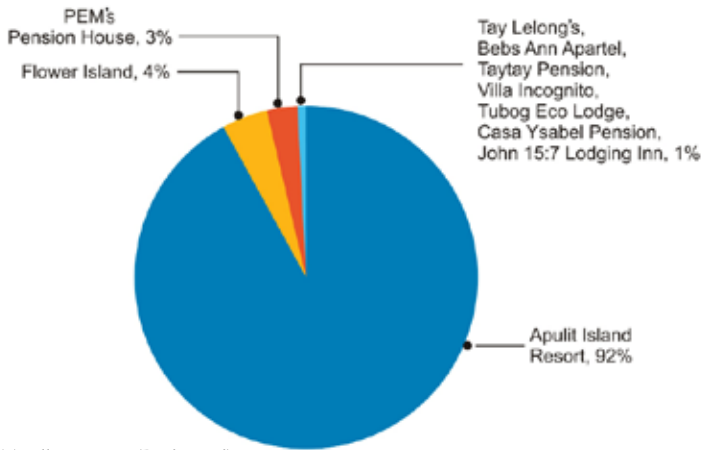
The combined annual gross income of the 10 tourist facilities in the data set ranged from P139.5–P175.7 million. The amount is equivalent to 75% of the annual budget of the entire municipality of Taytay. The graph in Figure 8 below shows that AIR captured 92% of the tourism income from accommodation costs alone. Flower Island Resort got 4%; PEM's Pension House, about 3%; with the seven other establishments in town sharing the remaining 1% of this income.

Table 8: Income Estimates of Accommodation Facilities in Taytay, 2011

	Guest nights/year	Estimated tourist expenses per overnight stay (P)		Estimated Income for year 2011 (P)	
		Lower bracket	Upper bracket	Lower bracket	Higher bracket
Apulit Island Resort	10,671	12,000	15,000	128,052,000	160,065,000
Bebs Ann Apartel	917	600	800	550,200	733,600
Casa Yzabel Pension	286	600	800	171,600	228,800
Flower Island Resort	1,415	3,500	5,000	4,952,500	7,075,000
John 15:7 Lodging Inn	275	600	800	165,000	220,000
PEM'S Pension House	3,614	1,000	1,300	3,614,000	4,698,200
Tay Lelong's	1,207	900	1,200	1,086,300	1,448,400
Taytay Pension	558	600	800	334,800	446,400
Tubog Eco Lodge	292	900	1,200	262,800	350,400
Villa Incognito	527	600	800	316,200	421,600
Grand Total	19,762	21,300	27,700	139,505,400	175,687,400
Mean	1,976	2,130	2,770	13,950,540	17,568,740

Source: Matillano 2014

Figure 8: Percentage of Captured Income by Accommodation Facilities in Taytay, 2011



Source: Matillano 2014 (Redacted)

3. Direct and Indirect Beneficiaries of Tourism

Accommodation facilities. The more obvious direct beneficiaries of tourism in Taytay are the island resorts and the bigger guest houses (e.g., PEM's Pension House, Tay Lelong's, and Casa Rosa). The other (smaller) inns also get a fraction of this income.

Dining facilities. Other establishments that cater to tourists are the restaurants — the two most popular ones also happen to be in-house facilities of two guesthouses in the Poblacion. Casa Rosa, which sits on a hill overlooking Taytay Bay, is known for its western fare (e.g., pizza, pasta, and sandwiches). PEM's Restaurant, located just a stone's throw away from the 350-year-old Fort Sta. Isabel, is popular for its delicious *pancit* (stir-fried noodles) and generous catch-of-the-day seafood fare. In addition, there are several eateries and makeshift stalls in the town center serving mostly local dishes at affordable prices.

Others who benefit from tourism include the following groups:

- Operators and drivers of buses, vans, tricycles, and owners of motorcycles-for-hire;
- Boat owners/operators, who ferry the guests of island resorts or are hired for tours organized by guesthouses in the Poblacion;
- Local fishermen and farmers, who supply food products to the restaurants and eateries;
- Grocery store owners and market vendors, who are part of the food supply chain for tourism; and

- Banks,¹¹ pawnshops that double as money changers and money remittance outlets, internet and photocopy shops, and other businesses that cater to the specific needs of tourists.

4. Supply and Market Demand

- The number of visitors in Taytay is less than 15% of that of El Nido, which reached a peak of 64,896 in 2013 (WWF 2014). This clearly shows that Taytay is lagging far behind its neighbor in attracting tourists. This situation is quite ironic since most tourists arriving in Palawan via Puerto Princesa and bound for El Nido (or going in the opposite direction, from El Nido to Puerto Princesa) pass through Taytay.¹² And they do exactly just that — they simply pass through.
- Despite the number and variety of possible tourist attractions in the municipality, the lack or perceived absence of tour packages to visit these sites was cited as the main reason why Taytay was either ignored by or unknown to tourists. Exceptions were the brief tours to Fort Sta. Isabel in the town proper and the island hopping and inland tours that were mostly organized by Casa Rosa Pension House. The Casa Rosa owner also owns Dinamayan Island, a popular stop for island hopping.
- In contrast, AIR, while located in Taytay Bay, seems like a world away. Despite its hefty rates, the resort enjoyed above breakeven bookings for most part of the year and was reportedly frequently fully booked during the peak tourist season (Anon., pers. comm.).

5. Existing and Potential Tourist Destinations in Taytay

There is no shortage of coral reef areas for ideal underwater activities in Taytay Bay. Nearly every island has a good snorkeling or diving area, particularly the larger ones. Tourists can enjoy swimming, boating, kayaking, and even fishing in many of the islands. However, the six areas described below do stand out in terms of snorkeling and scuba diving spots.

Black Rock is well known for having the most pristine coral reef area in the entire Taytay Bay, if not the whole of Taytay. Boasting more than 90% live coral cover, it has a shallow platform reef and a wall on its eastern side. The diverse coral forms and the presence of megafauna, such as reef sharks and marine turtles, are major attractions. During the onset of the rainy season, one can usually encounter baby sharks, which are regular visitors in the shallow areas of the reef. The reef is also home to at least four species of giant clams.

¹¹ The Development Bank of the Philippines installed the first ATM in Taytay in July 2017, providing an added convenience to locals and visitors alike.

¹² Cars/vans and shuttle buses from Puerto Princesa heading to El Nido or going the opposite direction stop at the Taytay transport station/terminal.



J. Matillano

Healthy coral colonies at Black Rock Reef

Nabat is a small limestone island that holds the distinction of being the best dive site in Taytay Bay. The reef wall along its eastern coast drops to depths of more than 40 m. It offers very good visibility, which affords divers a visual feast of the reef's wide array of fish species, both big and small. This area is particularly photogenic, and the impressive diversity of its marine life makes it ideal for close-up and macro photography. The west coast of the island is a popular site for skin diving and underwater photography since visibility is usually more than 15 m.

Pabellon Grande and Lopez Reef have distinctive coral reef formations similar to those in El Nido, where fringing reefs often have drop-offs and walls. These types of reef are some of the most sought after dive sites among scuba divers.

Apulit Island Resort and NoaNoa Island Estate

are private island resorts catering mainly to a niche high-end market. AIR boasts of a house reef with live coral cover of more than 70% (Gonzales et al. 2014a). The house reef in NoaNoa Island is also known to be one of the best in Taytay Bay. However, access to these sites by non-guests is currently restricted.

Unfortunately, all these reefs are currently open access dive sites. This means that no site-associated fees are charged for users. At the same time, there are no regulations in terms of dive protocols, except for those that may be imposed by the dive master. As such, there is no way of checking for reef damage caused by the divers; consequently, no fines or sanctions are imposed in cases where damage has been done.

All the other islands below are also fringed with beautiful coral reefs of varying structures and configurations. Moreover, each one has its own unique attractions, which may help tourists in deciding which one/s to visit. For instance, if one is interested in seeing the several species of giant clams in the bay, then Tecas Island should definitely be part of the itinerary.

Beton is popularly known for the white squirrels or *bising* (not yet officially identified) that can only be found in this island. It is also home to thousands of giant flying foxes (*Acerodon leucotis*). Trails along its hilly ridges offer panoramic views of Taytay Bay and part of the Palawan mainland. There is one beach resort in the island.

Dinamayan Island has a fine white sandy beach. Juvenile black tip sharks are common in its reefs. This island is also less than 10 minutes by boat from nearby Beton Island. Currently, access to the island is through bookings with Casa Rosa, whose owner also owns Dinamayan.

Pabellon Islands. Pabellon Pequeño and Pabellon Grande (or Elephant Island) are quite popular, not just for their imposing towering limestone formations, but also for being a major producer of the high-value edible bird's nest. Both islands are managed by concessionaires of the bird's nest trade, although tourists are allowed access upon arrangement.

Pabellon Grande has a small strip of white sand beach and a hidden lagoon that is open to visitors. Within the two islands are several cave systems that are regularly explored by the bird's nest harvesters during the nesting season. Visitors may also be allowed into the caves subject to permission from the caretakers of the island.

Quimbaludan Island has the reputation of being the most beautiful in Taytay Bay largely due to its white sand beach which is ideal for daytime picnics; a large portion of the island is covered with thick stands of beach forest. Quimbaludan is also known as roosting and nesting site for wild imperial pigeons (*Ducula pickeringii*), locally known as *balud*.

Tecas Island and its surrounding 100 ha MPA, the first one established by the municipality, is one of the best examples of a locally managed protected area. Its shallow coral reef is home to several species of giant clams or *taklobo*. During low tide, a sand bar appears on the western side of the island, making it a very scenic picnic ground.

Other Tourism Spots

Other ecosystems in the municipality can further diversify their tourist activities and may easily complement the tours being offered in Taytay Bay. Some of the potential spots that can be developed further as tourist destinations are identified below.

J. Matillano



Pabellon Grande towering over the surrounding waters

J. Matillano



Quimbaludan Island with its white sandy beach against a backdrop of lush beach forest and several coconut trees

N. Guevara



Guard house in Tepas Island has a 360-degree view over the reefs around it

Malampaya Sound. Situated on the western coast of the municipality, the sound is popularly known as the fish bowl of the Philippines and, as expected, there are numerous fishing villages along the coastal areas of the sound. The outer sound is one of the most picturesque places in Taytay. Coral reefs with good to excellent live coral cover and abundant fish populations surround several of the many islands in the sound, including its coastal areas. The ones in Tumbod and Liminangcong are also in better condition than those in El Nido (Gonzales et al. 2014; 2013). Also within the sound are numerous thick mangrove forests, particularly in Abongan, Alacalian, Pancol, and Liminangcong.

In Palawan, the Irrawaddy dolphin is seen only in Malampaya Sound and around Lipoon Point in Quezon. This dolphin is considered as critically endangered by IUCN (Smith and Beasley 2004).

Lake Manguao is the only lowland freshwater lake in mainland Palawan, with a surface area of more than 600 ha and a catchment of at least 4,400 ha. The lake's high ecotourism potential is not only due to its aesthetic qualities but also because of its unique biodiversity. As the only wetland area that can support waterfowls during the dry season, the lake serves as a refuge for the globally threatened and endemic Philippine ducks during summer (Birdlife 2012), when a flock of more than 1,000 of these birds is a common sight.

Aside from harboring 136 bird species as of 2007 (Matillano 2011), the lake is also home to several globally threatened mammals (Esselstyn et al. 2004), IUCN threatened and endemic freshwater fishes (Matillano 2002; Matillano and Atrero 2014), and the IUCN critically endangered freshwater/forest turtle (*Siebenrockiella leytensis*).



Snub-nosed and playful Irrawaddy dolphins sighted in Malampaya Sound

Mt. Capoas is situated in Barangay Banbanan in Malampaya Sound and is the highest mountain in northern Palawan. It is popular among local hikers, particularly during the summer months. Tourism activities in Mt. Capoas are currently unregulated, and no user fees are charged to scale the mountain. Paid local guides are available to take mountaineers to the summit for a minimum of two days' hike.

Waterfalls. Several waterfalls can be found in the municipality of Taytay. These falls are popular among locals as picnic sites during holidays, especially in the hot summer months. Of these, two are within the pilot sites for PES: Canique Falls and Pamantolon Falls. Canique Falls is, so far, the most developed spot and is a regular stop for inland tours offered to visitors. The small picnic area at the base of the waterfalls is regularly maintained by the *barangay*. In addition, there is Kuyawyaw Waterfalls, a series of five waterfalls along a 2 km stretch of the Cataban River. The falls are within the Kuyawyaw Nature Park. Wildlife abound in the area, including many of Palawan's endemic flora and fauna, such as the Palawan peacock pheasant (*Polyplectron emphanum*), blue paradise flycatcher (*Terpsiphone cyanescens*), Palawan blue flycatcher (*Cyornis lemprieri*), and Palawan tit (*Periparus amabilis*). The famous Palawan stink badger (*Mydaus marchei*) also considers the area its home.

Aquatourism sites. Taytay has quite a number of aquaculture farms within its waters. At least two pearl farms operate in Taytay Bay, which can serve as part of the attractions for the island hopping tours. Several islands, particularly Beton, Casian, and Paly, are known for their live reef fish industry. This industry also has good potential to be developed as a local-based tourism attraction. Visitors can experience feeding the popular giant groupers being grown in cages, or they can also order them for lunch fresh from the cages.

Potential tour packages. The municipality has the enviable position of being flanked by coastal waters on both sides – Taytay Bay to its right and Malampaya Sound to its left. This unique geography affords some flexibility in terms of offering sea-based tours the whole year round. Several tour loops or packages can be designed, with each loop equivalent to one full day of activities. These can combine island hopping with visits to any of the inland attractions. If fully developed, these tours can potentially hold tourists to stay for another day or two (or even more) in Taytay. A sample tour package is given in Annex 1.

Fort Sta. Isabel. Taytay, as the old capital of the province of Palawan, can maximize the tourism potential of its famed Fort Sta. Isabel. Situated in the municipal town proper and constructed at the edge of Taytay Bay, the fort affords visitors a 360-degree view of the Poblacion and a sweeping panorama of the bay. The port adjacent to the structure is the perfect jump-off point for island hopping in Taytay Bay.

The fort is open only from 8:00 a.m.–5:00 p.m. However, there are plans to keep the place open in the evenings, when tourists are more likely to enjoy the serene ambience coupled by the gentle breeze coming from the bay.

Aside from the fort, a stroll around the remnants of the old Spanish settlement that includes the Sta. Monica Church can be incorporated in a short tour of the town proper. The 350-year-old fort should be made the centerpiece and icon of the municipality’s tourism industry due to its historical significance.

Potential tourist destinations in Taytay can equal, if not surpass, the variety of what its neighbor El Nido currently offers. It has more attractions in terms of island and inland tours, dive and snorkeling sites, wildlife species, and potential aquaculture and agriculture community-based ecotourism sites.



The centuries old small chapel and brass cannon add an old world charm to the fort

However, Taytay's tourism industry is far from ready to aggressively promote its many attractions. No coherent marketing strategy is currently in place to attract tourists. There is a general lack of organized tours to bring visitors to the various attractions described.

Transport infrastructure and services to visit these destinations are likewise quite limited. Even the most basic amenities (e.g., rest rooms, sheds, etc.) are lacking in most of these sites. With the exception of the exclusive island resorts, most, if not all, of Taytay's tourist attractions are generally undeveloped or underdeveloped.

Cognizant of all the above deficiencies and mindful of its potential as a prime tourist destination, Taytay is now making tourism development a priority program. The Sandoval Airport is being rehabilitated, and the road network leading to it is being upgraded. Similarly, three major seaports — Liminangcong, Poblacion, and Sta. Cruz — are also being improved. Fort Sta. Isabel is undergoing restoration, and construction of facilities around it is in progress to upgrade the whole complex. Plans are also underway for building a visitors' center in Lake Manguao.

More importantly, the municipal LGU is currently working on its Tourism Development Master Plan, starting with a 5-day strategic planning workshop in February 2017. The LGU aims to formulate a long-term (10–20 yr) development framework with emphasis on a wide range of areas. This covers policy and strategy, planning, institutional strengthening, legislation and regulation, tourism infrastructure, marketing and promotion, and human resource development. The master plan will also include a short term (three-year) action plan for priority activities to kick-start sustainable tourism development, including the preparation of several tourism pilot projects to be implemented in selected sites.

SOCIOECONOMIC PROFILE AND INSTITUTIONAL ANALYSIS

Socioeconomic-cum-institutional analysis was conducted in the *barangays* of Canique, Mayteged, and Pamantolon, which have political jurisdiction over the islands/reef sites covered in the marine resources assessment. This third component of the benchmarking study is divided into two main parts: (i) a basic description of the *barangays* and socioeconomic characteristics of its residents; and (ii) description and analysis of the institutional arrangements in these *barangays*.

Methods of Data Collection

Primary data were gathered using prepared survey instruments administered through face-to-face interviews with 207 selected

household heads in the three *barangays*.¹³ FGDs with selected participants were also held to augment and validate the primary data generated through the household survey. The secondary and primary data were then analyzed. The findings are summarized below.

1. Physical Profile of Canique, Maytegued, and Pamantolon

Transportation infrastructure and facilities. From Taytay town proper, Pamantolon and Canique are reachable through a dirt road by motorcycle, tricycle, and jeepney; Canique can also be reached by boat. The main road traversing through Pamantolon and Canique is currently under construction as it is the same one going to the local airport in Sandoval, which is being rehabilitated. All three *barangays* are located near the airport. From the Poblacion, it is quicker to reach Maytegued by boat. Both Maytegued and Canique have existing ports; the one in Pamantolon is under construction.

Utilities. The communication channel of choice is the now ubiquitous cell phone. Signals are available in the three *barangays*, with Maytegued having the strongest signal. Prepaid cell phone loading stations are available in some of the neighborhood convenience (*sari-sari*) stores. Electricity runs for only 4–6 hrs/day. Water supply is likewise available for a limited time only. In Pamantolon and Canique, faucets for communal use are installed in street corners. The residents collect water from these faucets and store them in drums and other containers in their homes.

Business establishments and other support services. There are 13 *sari-sari* stores across the three *barangays*. Of the three, only Canique has a hardware store and eatery. Eleven schools operate in the three *barangays*, and each *barangay* has its own health center.

2. Demographic Characteristics of the Households

Age. Almost three-fourths (73%) of the respondents are 49 years and below, meaning that the population in the sample *barangays* is relatively young. The mean age of the respondents is 41.3 years; the youngest is 18 years old, and the oldest is 73 years old.

Household size. The average household has around five members (5.1), quite typical in coastal *barangays*.

Education. The respondents have generally low educational attainment, most of them (86%) having reached only high school level and below. Very few have completed high school; fewer still have attended or completed college, or have taken vocational courses after high school.

¹³ Eighty-seven household heads in Canique, 69 in Maytegued, and 51 in Pamantolon were interviewed for the socioeconomic survey. The sample sizes were determined in proportion to the number of households in the three *barangays*.

Ethnic groups. The respondents belong to various ethnic groups. Almost half of them are Bisaya (47%), followed by Cuyunon or natives of the province (37%). A few of them are Tagalog (13%), Bicolano (1.4%), and Agutaynen (0.5%). Most household heads in the three *barangays* are migrants from other regions. This is true in the province as a whole because Palawan used to be a resettlement area.

3. Economic Characteristics of Household Heads

Income sources. Most of the respondents (79%) are engaged in natural resource-based economic activities as a primary source of income. These include fishing (30%), farming (29%), seaweed farming (22% for Canique and Pamantolon), and providing labor and services (6%). For secondary income sources, majority (56%) are also involved in farming, providing labor and services, fishing, and seaweed farming.

That the respondents' primary and secondary means of livelihood are the same (e.g., fishing, farming, and seaweed cultivation) is indicative of the limited livelihood opportunities in the studied communities. The nature of the respondents' occupations could also be a function of their generally low educational attainment. To a certain extent, the poor transport infrastructure and facilities limit their opportunity to go the Poblacion (or elsewhere outside the village), where they might find alternative day jobs.

Monthly earnings. The respondents reported earning a mean monthly income of P5,837 from their main source of livelihood. They also make an average of P2,633 from other sources, or a combined total of P8,471/mo (P101,652/yr). At an average household size of five members, this translates

N. Guevara



Father and son hauling in a day's seaweed harvest

into an annual per capita income of P20,330. This further means that residents in the sample *barangays* are a little above the poverty threshold of P17,292 in Region IV-B in 2012 (www.nscb.gov.ph).

Monthly expenditures. On the average, the respondents spend P6,873/mo, suggesting that only a small portion of their total monthly income is retained (P1,597). Food constitutes the bulk of household expenses, accounting for an average of 78%. The items for their second highest expenditure varied among respondents. However, most of them spend an average of 14% of their income on education,¹⁴ and the rest on clothing and other household needs.

Real property and other assets. The respondents have modest-sized residential lots measuring an average of 322 m². About two-thirds (67%) declared that they own the lot where their house stood on. Almost a fourth of them (24%) act as caretakers of the said lots; 2% indicated they were renting; 1% was in a marine area (easement); and the rest gave no answer.

The average farm landholding is 2.15 ha. Only 29% of the respondents own their farms, the others are caretakers (17%), and a few are leaseholders (5%). Only one of them does not cultivate a permanent piece of land because he practices *kaingin* or shifting cultivation. About half of the respondents are into farming either as a primary or secondary source of livelihood. However, less than a third own farm lots as previously mentioned. This may be associated with their lack of disposable income, which would enable them to buy the land that they till.

Lastly, very few respondents own vehicles like a motorbike (19 respondents or 9%) and tricycle (4.3%). These vehicles are either fully owned or are still being paid on installment. Again, the respondents' inability to purchase or amortize a vehicle can be attributed to their low disposable income. The lack of vehicle ownership and the scarcity of public transport in these *barangays* also limit the residents' mobility to seek livelihood opportunities elsewhere.

4. Social Characteristics of the Respondents

Information source. Most of the respondents (92%) still rely on radio as their source of mass media information. A fourth of them (25%) access information from television. Almost all (94%) get local information through announcements made by their *barangays*.

Social organizations. Most of respondents (90%) are members of organizations. Majority (52%) are beneficiaries of the Pantawid

¹⁴ Based on the mean age of 41.3 years, many of the respondents would have children of school age.

Familyang Pilipino Program (4Ps) of the Department of Social Welfare and Development (DSWD).¹⁵ Others belong to a fishers' group (17%), while the women respondents are members of *Kababaihang Ilaw sa Lahing Pilipino* or KISLAP (8%). Community development is the major thrust of most of the organizations — either providing livelihood projects (25%), quarterly allowance for education and health of children (20%), or financing assistance (1%).

Social and economic problems in the barangays. Limited supply of electricity was given by 69% of the respondents as the foremost problem in their communities. Other problems mentioned were poor road conditions, lack of water supply, and illegal fishing in the area.

Human resources. The increasing population of Taytay (32% increase from 2000 to 2010), the moderate household size (5 members/household), and the relatively young population of the three *barangays* indicate that the areas studied have a potentially large supply of labor that can be tapped for the development of the municipality's tourism industry, among others.

However, the increasing population of the town also means increasing pressures on the natural resource base, particularly on the marine resources of Taytay Bay. This problem could be partly addressed through PES. Payments made by ES buyers can be used to fund alternative livelihoods for the residents of the three *barangays*, who will lose income due to the regulated use of marine resources, e.g., conversion from fishing to recreational or (eco)tourism purposes.

5. Institutional Profile of Canique, Maytegued, and Pamantolon

The respondents identified several institutions that have a direct impact on their *barangays*. These agencies can be categorized into three levels: provincial, municipal, and *barangay*.

Barangay level. The respondents identified 10 institutions that are operating in the three study sites. These are the *barangay* LGUs, eight social organizations, and WPU in Canique. Among the social organizations, they considered the DSWD's 4Ps that provides direct financial assistance to beneficiaries as the most active. The Barangay Fisheries and Aquatic Resource Management Committee (BFARMC) was also perceived to be very visible, given that the three sites are all fishing villages. This committee is organized by BFAR, which tasks the locals to protect the coastal and marine resources under their *barangays'* respective jurisdictions.

¹⁵ More than half of the study respondents are recipients of the DSWD's conditional cash transfer program; this indicates that residents of the three *barangays* are generally of low income (indigent) status.

Municipal level. Five institutions were seen as most prominent at the municipal level. These are the municipal LGU, PSU, and three cooperatives, viz., Taytay Palawan Municipal Employees Multi-purpose Cooperative (TPMEMPC), Palawan Electric Cooperative, and the Taytay Water District Cooperative. Among the three cooperatives, TPMEMPC was considered the most active and visible. It operates a well-stocked grocery store just outside the gates of the municipal government office complex and provides a whole range of services to its members.

Provincial level. Lastly, the Provincial Environment and Natural Resources Office (PENRO) is the only provincial level organization that has a physical presence in Taytay. It is a government institution under DENR which is mandated to conserve, manage, develop, and properly use the environment and natural resources of Palawan.

6. Key Institutional Actors and their Levels of Influence

The researchers made an inventory of institutions that may be relevant vis-a-vis the PES project, identified their roles, and determined their levels of influence (Table 9). The assessment was based on the interviews and FGDs conducted and an analysis of documents. The level of influence was seen as a combination of decision making, policymaking, planning, and agenda setting powers.

At the village level, deemed to have a large influence on the PES project are the *Sangguniang Barangay* (village council), the Committees on Tourism and Environment, and the BFARMC. Although mentioned as active organizations at the *barangay* level, the Local Enterprise Committee, Seaweed Farmers' Association, and KISLAP KABABAIHAN were seen as having only moderate influence relative to the proposed PES. They clearly do not have the characteristics of typical civil society actors as they were organized in all *barangays* mainly as livelihood-driven associations.

At the municipal level, the offices of the local chief executive, the *Sangguniang Bayan*, the Municipal Tourism Office (MTO), and Taytay Tourism Council (TTC) are considered as the most influential government entities relative to PES.¹⁶ Likewise, high influence was ascribed to the Provincial Tourism Office, with the Palawan Council for Sustainable Development (PCSD) and the PENRO perceived as having only moderate influence.

¹⁶ The MTO is under the administrative supervision of the LGU, while the TTC is a multi-sector body composed of tourism-related service providers and stakeholders, with several municipal officials sitting in the Council as members.

Table 9: Key Institutional Actors in the Study Sites
and their Levels of Influence

LEVEL	STAKEHOLDER	TYPE OF ENTITY	ROLE	INFLUENCE
PROVINCIAL	PCSD	Government office	Regulatory	Moderate influence
	Provincial Tourism Office	Government office	Planning Implementation	High influence
	PENRO	Government office	Regulatory/ issuance of permits or tenurial instruments for public lands under Forest Land Agreement for Tourism	Moderate influence
MUNICIPAL	Office of the Local Chief Executive	Government office	Execution Implementation of policies	High influence
	Office of the Sangguniang Bayan	Government office	Policymaking Legislation Oversight	High influence
	Municipal Tourism Office	Government office	Promotion Implementation Supervision	High influence
	Municipal Planning Office	Government office	Planning Coordination	Moderate influence
	Local Finance Committee	Special body/ committee	Fiscal management	Moderate influence
	TPMEMPC	PO/ Cooperative	Service provider	Moderate influence
	Consolidated Bank of Palawan	Private bank	Service provider	Moderate influence
	Taytay Tourism Council	Local committee	Policymaking Coordination	High influence

continued on next page

Table 9 continued

LEVEL	STAKEHOLDER	TYPE OF ENTITY	ROLE	INFLUENCE
BARANGAY	Barangay Council	Government office	Policymaking/legislation	High influence
	Barangay Development Council	Government office	Planning	High influence
	Committee on Tourism	Local committee	Implementation Coordination	High influence
	Committee on Environment	Local Committee	Implementation Coordination	High influence
	Local Enterprise Committee	Local committee	Implementation Coordination	Moderate influence
	BFARMC	Local committee	Planning Coordination	High influence
	Seaweed Farmers Association	Peoples Organization	Service provider Marketing	Moderate influence
	KISLAP	Peoples	Planning	Moderate
	KABABAIHAN	Organization	Implementation Coordination	influence

Source: Rama 2014

It is noteworthy that not even one NGO was mentioned by the respondents. This, despite the legal mandate through the *Local Government Code of 1991* providing for not less than 25% representation of NGOs or civil society in local special bodies. As revealed by Neef and Thomas (2009), NGOs and civil society organizations (CSOs) still face problems of recognition and, therefore, tend to be underrepresented in any policy arrangement. With the seemingly limited presence of strong local NGOs/POs/CSOs in Taytay, the researchers felt that bureaucratic or hierarchical interaction patterns for the proposed PES might prevail.

7. Available PES Support Services

As previously indicated, several social organizations exist in the three *barangays*. Some of them (e.g., BFARMC, KISLAP KABABAIHAN, and a government-recognized fisherfolk organization) can be tapped to provide the manpower for the protection and conservation of the communities’ marine resources.

The higher education institutions (e.g., WPU in Canique and PSU in Taytay) could serve as providers of technical assistance and training to community members on conservation and protection of marine resources, especially on alternative non-fishing based livelihoods. The Taytay LGU has an existing MOA with WPU to this effect.

At the municipal level, the LGU has several departments or offices whose functions are related to tourism, natural resource management, and environmental conservation and protection. In addition, there is the TTC whose members include owners of resorts and guesthouses as well as operators of other tourism-related services. Other TTC members include the Municipal Tourism Officer and SB members chairing the committees of agriculture, environment, and tourism.

Given the substantive role of the TTC as a multi-sector policymaking body that plans and directs the development of the town's tourism industry, it could be one of the lead implementing agencies for the PES project.

Taytay Bay is within the municipal waters and is under the jurisdiction of the Taytay LGU. Thus, the municipal government should provide for the improvement of tourism facilities in the bay to support PES-related activities in the area.

Lastly, PENRO has the mandate for the proper management and use of the province's environment and natural resources. It can provide additional funds, manpower, and the necessary technical knowhow to the Taytay LGU and concerned *barangay* LGUs.

Lessons:

- Paying a courtesy call on local authorities to inform them about the project as early as its inception stage will serve the project in good stead. Specifically for a benchmarking study, it is important to clearly explain the objectives and mechanics of the resource assessment. The research team should inform the authorities in advance of their work schedule, particularly the field work for data gathering purposes. If necessary, they should be apprised on the progress of the study so that they do not feel that you are there only to extract data or information which they do not have access to.
- It is important to work with specialists who are known in their respective fields and who belong to a reputable organization with a proven track record in conducting benchmarking and similar studies. The team should be multi-disciplinary, with expertise matching what is required by the study, and who will not subcontract the job. People are more likely to have confidence in their findings and more accepting of their recommendations if they are perceived to be credible. The members need to be apolitical, and they should be neutral and impartial so that people do not ascribe any ulterior motives to their activities.
- Having prior baseline information (i.e., 2007 marine resource assessment for Apulit, Lopez, and Tetas) was a big bonus to the benchmarking study. The availability of 2007 data from the aforementioned sites made it possible for the research team to make comparisons. Such comparisons made the results of the 2014 study more meaningful — as people can better appreciate how certain physical, biological, and ecological conditions have changed in seven years due to certain natural and human-induced factors.
- Benchmarking greatly helps in identifying the ecosystem services that will serve as the core of the PES scheme, the players (e.g., ES buyers and sellers), and the institutions and organizations that may be tapped for the implementation of the PES project.

Chapter 3

ESTABLISHING THE CGCG: A PES SCHEME

Crucial to the establishment of a PES project is determining the most appropriate ecosystem service to offer. It is also important to identify the potential buyers who will benefit from the service, along with the sellers — individuals, groups, or associations — who can (and will) continuously supply the service. A clear picture of the ES must be defined for the buyers' appreciation. The sellers, on the other hand, must be fully aware of the status and desired quality of the ES and be able to sustainably supply it. Moreover, the value of the ES must be assessed to have a concrete and fair basis for fees or payments to be imposed.

Several missions were undertaken to prepare for the implementation of the PES project in Taytay. Given the characteristics of the municipality, especially its rich marine resources, tourism was identified as the most appropriate ecosystem service for the PES deal.

Why tourism?

- Taytay has about a hundred islands and islets, many of which can easily qualify as world-class tourist destinations.
- It serves as the stopover destination for tourists coming from Puerto Princesa en route to El Nido, a well-known tourist destination.
- It has the potential capacity to supply the food needs (e.g., rice, fish, meat, vegetables, and fruits) of big resort facilities and restaurants.
- The municipality is renovating its airport and seaport facilities to provide quicker, cheaper, and more convenient access to tourists.
- Other support facilities are available to provide the accommodation, dining, recreation, and communication needs of visitors and help ensure their health and safety.

After subsequent meetings and consultations with concerned local government officials, the PCSD, and other stakeholders, the Taytay PES project implementation formally started on 24 August 2014.

In establishing a PES scheme, several basic steps have to be undertaken, namely:

- Define the ecosystem service (ES);
- Conceptualize the PES scheme (e.g., Coral and Giant Clam Gardens);¹⁷
- Identify the players in the PES scheme: ES buyers and ES providers;

¹⁷ The coral and giant clam gardens (CGCGs) was called coral and *taklobo* gardens (CTGs) during the early stages of the project; *taklobo* is the local name for giant clam.

- Identify other stakeholders involved;
- Present the PES scheme to stakeholders at a consultation meeting (or series of meetings, as needed); and
- Conduct the necessary training to adequately equip the stakeholders involved in delivering the ES.

Establishing a PES scheme is a highly iterative process. The steps are not discretely delineated, and they are not carried out in a neatly sequential or linear fashion. Some of them may overlap or may have to be done simultaneously. Other steps need to be done repeatedly (e.g., presenting the scheme at various stages of development in a series of consultation meetings).

Defining the Ecosystem Services and Conceptualizing the CGCG

Workshop to Present the Benchmarking Study Results

On 29 January 2015, a month after the conclusion of the benchmarking study, the results were presented at a multisector workshop, *PES Benchmark Assessment Reports and Formulation of PES Design*.¹⁸ It was a well-attended affair. Some 50 participants represented the municipal and village level government units, other government agencies, NGOs, private resorts, and other tourism-related service providers.

Dr. Lope Calanog, RETA 7813 Sustainable Financing Specialist, served as the lead resource person for the day's event. He explained why tourism was selected as the ecosystem service for Taytay and why relevant benchmarks had to be established to inform the PES scheme to be adopted. He outlined the agenda for the one-day workshop:

- Presentation and validation of the results of the PES benchmark assessment;
- Introduction of the PES concept and determining the level of feasibility and acceptability of PES among the stakeholders; and
- Identification of stakeholders' roles and possible schemes for the PES deal to work.

The assessment results were presented in two parts. The first was on the status and condition of tourism in Taytay and Palawan, with Mr. Joie Matillano as the resource person. The second was on the condition of Taytay's coastal and marine resources, with Dr. Roger Dolorosa as presenter. The researchers highlighted key findings of their studies and gave their recommendations for future action.

¹⁸ Only the Marine Resources and Tourism Status and Condition, which comprised Part 1 of the PES benchmark study, were presented during the workshop.

An introduction to PES. Following the discussions on the results of the benchmark assessments, Dr. Calanog gave an introductory presentation on the concept of PES — its definition, characteristics, principles, and structure. He also cited a number of successful PES cases in other countries to provide the participants a glimpse of its practical applications.

The participants raised several issues in the ensuing open forum, e.g., failures in developing and maintaining environmental funds, transparency in the use of funds, and existing payment mechanisms in Taytay and El Nido. They also expressed the need for assistance in drafting an integrated management plan for established and potential MPAs¹⁹. Other topics brought up were possible agri-tourism in Taytay, and current popular environmental movements such as those advocating the “rights of mother nature.”

Workshop activity. The core of the day’s event was the workshop activity, which was meant to elicit ideas for the PES design. The participants were divided into three groups: those from the LGU and other government agencies comprised Group 1; people from the local communities made up Group 2; while the resort owners, NGOs, and other stakeholders formed Group 3. The groups worked on three tasks: (i) mapping the different zones in Taytay Bay; (ii) identifying the ES players or actors; and (iii) identifying mechanisms to make the PES scheme work.



L. Calanog

Participants from the private sector and NGOs working on their assigned map

¹⁹ By the later part of 2017, the MPA network management plan was already finalized, but still up for final review.

1. Mapping of tourism and fishing areas or zones. The local community group was instructed to indicate the existing areas for fishing (and other uses) in their respective *barangays*. The two other groups, on the other hand, were tasked to indicate the existing and planned zones, including areas designated (or yet to be designated) as MPAs. Table 10 shows the consolidated outputs of the workshop groups.

Table 10: List of Fishing, Tourism, and Marine Protected Areas/ Fish Sanctuaries

Fishing areas	Tourism areas	MPAs/Marine sanctuaries
Silanga to Baras	Flower Island	Tecas (declared)
Apulit to Baras	Club NoaNoa	Black Rock
Pabellon to Open sea	Apulit Island	Nabat
	Punta Negra	Noanao
	Cagdanao	Apulit
	Beton: Dilis Farm	Pabellon
	Elephant	Dumapli
	Pabellon	Elephant Island
	Tecas	Flower Island
	Nabat Island	Malutamban
	Isla Blanca	Budacan
	Lopez Reef	
	Purungyawan Beach	
	Rainbow Beach	
	Malaquiquin	
	Canique Falls	

The LGU group proposed to make the whole of Taytay Bay an MPA,²⁰ and also suggested several ideas for consideration:

- User fees must be collected for visiting tourist sites;
- Funds collected could be handled by the municipal government by way of a MOA with concerned agencies, groups, or individuals; and
- Revenue distribution will be subject to negotiation, but sharing must be equitable among ES providers.

²⁰ According to the group, specific zones for specific uses will be identified; hence the entire bay will not be declared as a strictly protected area.

Note that the lists made by the groups overlapped. The designated areas were not mutually exclusive, indicating that some of them have multiple uses. For instance, Apulit and Pabellon were listed under all three columns — meaning that they serve three functions: as areas for fishing, tourism, and marine protection or sanctuaries.

Similarly, Flower, Nabat, and NoaNoa Islands were considered both as tourism areas and marine sanctuaries. This exercise proved to be extremely useful for the participants; they saw that other groups also have a stake or interest in areas that they considered to be for their “own” use.

- 2. Identifying the ES players.** For the second task, all three groups were instructed to indicate the different ES actors or players, their roles in the possible PES deal, and the expected benefits from the performance of such roles. The outputs for this workshop are consolidated in Table 11.
- 3.** For the third task, the groups were asked to indicate the **possible instruments or mechanisms that could be adopted** to make the PES deal work. The consolidated outputs are in Table 12.

At the day’s end, some of the participants gave their impressions about the workshop and their hopes for tourism in Taytay:

“Once an ordinance on tourism has been passed, we expect all stakeholders to accept it and help in its implementation. We hope that tourism areas in Taytay will be widely recognized and that the municipality’s natural resources will be sustainably managed.”

— Ms. Liza Magbanua, Taytay SB member

“Participants representing different stakeholder groups were able to communicate what they can offer in order for tourism in Taytay to boom. The workshop was a good avenue for everyone to internalize the municipality’s vast potential as a tourist destination.

— Ms. Kryzl Maranan, AIR representative

“The whole planning process for tourism in Taytay, which involved all relevant sectors is heartwarming. Fishers are the first in line to experience the effects of decreasing incomes due to lower fish stocks.”

— Mr. Renato Ignacio, head of a fisher group/association

“Generations to come must be able to enjoy our natural resources. Ecotourism will provide benefits across multiple sectors, but in order for this to be realized, everyone’s support needs to be sustained.”

— Ms. Marissa Garcia, ADB

A month after the above workshop, a follow-up mission was organized to further concretize the design of the PES project. The mission also aimed to present the design of the PES project to the individual stakeholder groups to solicit their feedback. It also intended to seek counterpart financial support and other forms of assistance in its implementation.

The SF Specialist met with the WPU team to review the outputs of the January 29 workshop. After an extensive discussion, the group agreed that coral restoration and protection through **coral gardening** was the most appealing and feasible PES scheme for pilot testing. As a complementary activity, the garden will incorporate *taklobo* or giant clam gardening in the overall design. **The PES design will have the following features:**

- *Ecosystem services:* tourism, specifically the experience of tourists in coral and giant clam gardening;
- *ES providers:* local community, who will establish, protect, and maintain the CGCGs;
- *ES buyers:* local resort owners, who will pay for the labor to be provided by the local community in establishing, maintaining, and protecting the CGCGs;
- *ES governance:* LGU, through the *Sangguniang Bayan*, which will issue the relevant ordinance(s). The LGU will partly provide the logistics required, e.g., boat for transport of materials or it can share this responsibility with the resort owners;
- *ES knowledge providers:* PRIMEX (through WPU), DENR, and other organizations. The knowledge providers and technical support group will bear the costs of all related professional services.

The following benefits are expected from the PES deal:

- *ES buyers (resort owners):* expect an increase in the number of tourists and, therefore, an increase in income; they can charge extra for those interested in the additional experience of planting corals and translocating giant clams;
- *ES providers (local community):* compensation for their labor; additional CGCGs to be established would mean additional income to more local people;
- *ES governance:* get a share from the tourist entrance and environment fees that will be charged by the resort or tour operators, which will be authorized through an LGU ordinance.

Table 11. PES Actors, their Respective Roles, and Expected Benefits

Actors	Roles/obligations	Expected returns/ benefits from performance of roles
1. ES providers		
LGU	<ul style="list-style-type: none"> ▪ establish MPAs (Taytay Bay), tourism zones, backed up by municipal ordinances ▪ employ strict implementation and enforcement ▪ provide funding ▪ (include all of the above points to the Comprehensive Land and Water Use Plan) 	<ul style="list-style-type: none"> ▪ better coral cover and more fish ▪ ecotourism livelihood opportunities ▪ formulation of tourism development, CRM, and CCA master plans
Local communities	<ul style="list-style-type: none"> ▪ support <i>barangay</i> legislation ▪ provide tour guiding services ▪ provide homestay services ▪ food processing ▪ land and sea transport provider ▪ support law enforcement 	<ul style="list-style-type: none"> ▪ additional income ▪ promotion of peace and order ▪ sustainable livelihood ▪ generate employment
2. ES users		
Resort owners/ operators	<ul style="list-style-type: none"> ▪ reward/incentives for caretakers of marine sanctuaries ▪ local employment by providing funds to pay for salaries of fish wardens or <i>Bantay Dagat</i> from communities ▪ install mooring buoys ▪ alternative livelihood: seaweed farming, coral farming, mangrove as ecotourism site, and clam farming ▪ make locals “suppliers” of souvenir items/tours 	<ul style="list-style-type: none"> ▪ protection of tourist attractions ▪ protection of coral reefs, thus making sites more attractive ▪ food supply for the resort and local communities ▪ additional tourist attractions ▪ supplies from locals (logistics) like souvenir items, tour services, etc.

continued on next page

Table 11 continued

Actors	Roles/obligations	Expected returns/ benefits from performance of roles
3. Management/governance body (intermediaries)		
Academe (e.g., Palawan Ecosystem Research and Conservation Center- WPU)	<ul style="list-style-type: none">▪ conduct of technical studies▪ provision of technical advice▪ provision of training activities for locals▪ resource assessment▪ resource assessment and IEC activities	<ul style="list-style-type: none">▪ manage funds on technical/ scientific studies▪ effective protection of fish sanctuaries/ tourism sites
NGOs	<ul style="list-style-type: none">▪ provide assistance on community organization and livelihood▪ provide technical assistance on tourism and environment-related activities▪ provide assistance on tourism networking activities	

Table 12: Possible Instruments that may be Adopted for the PES Deal

Actors	Instrument/mechanism	Remarks/other considerations
Local communities	<ul style="list-style-type: none">▪ Payments made by a company via PES council to local community, which will be executed through a MOA between said council and municipal LGU	<ul style="list-style-type: none">▪ This mechanism will promote community participation in the protection of natural resources and the overall implementation of the project
LGU	<ul style="list-style-type: none">▪ Setting up of trust fund and MOA with service provider▪ Formulation/inclusion of all rates into revenue code▪ Establishment of payment schemes through willingness-to-pay survey	
Resort owners/ operators	<ul style="list-style-type: none">▪ MOA/trust fund through community/PO	

The CGCG experience itself, on the other hand, will have the following features:

- Aside from the usual diving and snorkeling in reef areas, tourists will be given the opportunity to experience actual coral restoration by planting coral fragments and translocating giant clams (akin to tree planting in degraded forests and upland areas).
- Tourists planting corals and translocating giant clams will be the first of its kind in Palawan (and maybe in the Philippines and perhaps in the world).
- While planting corals and translocating giant clams, each tourist will be photographed and covered in video. The photo/video documentation will be included in a directory of “coral planters and giant clam movers,” which will be uploaded on a website and tagged as *Coral Reef Heroes*.
- Each coral and giant clam will be tagged and named after the tourist who planted it.
- A certificate will be given to every tourist who opts to engage in this activity; a sample of the certificate is shown in Annex 2.

Or

- A group of tourists may simply watch how coral and giant clam gardening is being done (could be by a partner local community).
- The tourists can swim around the established CGCGs.
- A certificate will be given to every tourist who opts to engage in this activity.

The PES design developed with the help of the WPU team is quite unique as it incorporates a relatively new concept in tourism development. It is hoped that its features would generate interest among tourists and will bring in yet more tourists by word of mouth and through the internet (mainly via the Taytay tourism website). The PES scheme will not only highlight Taytay Bay’s rich biodiversity, but also the LGU’s marine conservation advocacies. It will also generate income for the local community, tourism-related service providers and associated enterprises, as well as the local government.

Presenting the PES Design

Meeting with different stakeholder groups. The PES design was presented to the leaders of Canique, headed by its chair, Mr. Ely C. Abes, and Mr. Perfecto Dolliente, BFARMC President. The local people were quite excited about the PES concept, were eager to put up their own CGCGs, and looked forward to the immediate implementation of the PES project.



Dr. Calanog presents the PES design before local officials and leaders of Brgy. Canique

The meeting with Martin and Flora Fankhauser, the couple who bought the right to operate a resort in a portion of Talacanen Island, turned out to be very fruitful. They responded positively to the PES idea and committed their participation in the project.

Several attempts were made to meet with other potential partners. However, the owner-operators of the two other island resorts who initially signified interest to collaborate in the project were both very busy and begged off.

The DENR-CENRO Taytay office was also visited to sell the idea of PES and make it a partner in this undertaking. The officer showed interest in the scheme and signified to support it.

Presenting the updated design in a consultation meeting. After the above meetings, the SF Specialist again prepared an updated version of the CGCG-PES design. He presented this at a meeting with key members of the LGU, including the Protected Area Supervisor (PASU) from DENR.

The CGCGs would be established in suitable areas²¹ in Taytay Bay, where tourists can enjoy the usual water activities such as boating, kayaking, swimming, snorkeling, or scuba diving. However, the CGCG-PES project would have something more to offer — an opportunity for tourists to help further develop these underwater gardens by having them plant their “own” corals and giant clams.

²¹ The decision on the specific sites for the underwater gardens was not yet made during this stage.

The SF Specialist stressed that stakeholder cooperation and support are key to project success. For instance, the LGU must pass the needed legislation to provide the legal foundation for project implementation. DENR is expected to help provide technical and financial assistance. For their part, the resort owners will be responsible for paying the fees of local people to be designated as coral and giant clam gardeners.

The LGU officials were optimistic about the potential of the PES project and committed to provide all the necessary institutional and logistical support to make it work. They agreed to implement the project in Tucas Island for several reasons: Tucas is an MPA; some portions of the island's coral reefs are in need of immediate rehabilitation; and the island is being promoted as a tourist destination.

The PASU, on the other hand proposed that the PES project be also implemented in Malampaya Sound. The sound is under the jurisdiction of DENR, and could therefore be partially funded by the Department. The PASU added that some coral reef areas in the sound also need immediate rehabilitation, and that the area is also being promoted as a tourist destination — hence, fit for PES. The matter was tabled for further discussion with the CENRO.

Identifying the CGCG- ES Buyers and Sellers

At the same meeting where the updated version of the PES design was presented, the group further deliberated on the initial set of ES sellers and buyers and enumerated their specific roles in the PES scheme — an elaboration on the January workshop output:

1. Local communities (as ES sellers/providers/suppliers)
 - Collect coral fragments;
 - Maintain coral nurseries;
 - Plant coral fragments;
 - Transfer giant clams;
 - Protect and maintain the CGCG gardens; and
 - Act as tour guides during diving and snorkeling in CGCG areas.
2. LGU (as ES seller/provider/supplier)
 - Pass ordinances on: (i) designation of coral restoration and conservation zones; (ii) entrance fees or environment fees; (iii) establishment of a conservation trust fund (CTF); and (iv) other pieces of legislation as may be deemed necessary;
 - Provide other logistical support like the use of speedboat, office space, etc.; and
 - Maintain assigned CGCG in Tucas Island.

3. DENR (as ES provider/supplier and knowledge provider)
 - Provide capital/budget for Malampaya Sound PES project;
 - Protect and maintain the PES project in Malampaya Sound; and
 - Provide other forms of technical assistance, as necessary.
4. Private resorts (as ES buyers/users)
 - Pay salaries of local fishermen who will be tapped for the CGCG project;
 - Protect and maintain the CGCGs assigned to them;
 - Allow for the use of scuba diving gear and other equipment and facilities; and
 - Collect entrance fees and other related fees and deposit them in the trust fund to be created for the purpose
5. PRIMEX (as ES knowledge provider)
 - Conduct training on coral and giant clam gardening;
 - Promote coral and giant clam gardening as a tourist activity;
 - Draft MOA on PES project implementation;
 - Help draft local ordinances and related legislation; and
 - Design the CGCG website

The group identified several islands along with the *barangays* where the PES project can be possibly implemented. They also named the potential partner resorts or institutions as shown in Table 13 below:

Table 13. Possible Locations and Partners for PES Project

Location of PES Project	Partner Institution or Resort
Tecas Island, <i>Barangay</i> Pamantolon	LGU
Flower Island, <i>Sitio</i> Calabugtong, <i>Barangay</i> Casian	Flower Island Resort
NoaNoa Island, <i>Barangay</i> Silanga	NoaNoa Private Island Estate
Apulit Island, <i>Barangay</i> Maytegued	Ten Knots Development Corporation
Talacanen Island, <i>Barangay</i> Canique	Forest Villa/Floral Hotel
Malampaya Sound, <i>Barangay</i> New Guinlo	DENR-CENRO

At the same meeting, it was announced that HEED Foundation²² will be donating 10 sets of scuba diving gear and equipment to a federation of local fisher groups and will also train 25 of their members on scuba diving. The foundation aims to wean the fishermen away from destructive fishing practices by providing them with alternative livelihood opportunities. The

²² Health, Education, Environment Discipleship (HEED) Foundation, Inc. is an NGO based in 49 Annapolis St., Greenhills, San Juan, Metro Manila. Its guiding principle is “...good citizenship begins with a good education.”

HEED project was considered very timely and could work perfectly with the PES initiative as coral and giant clam gardening requires local people who are trained in diving. Bringing the HEED Foundation on board the PES project was to be explored further as it could be an ideal partner in the CGCG initiative.

In a follow-up consultation meeting, the CENRO confirmed his interest to establish a separate PES project in Malampaya Sound. He mentioned that the sound is a priority area for development by his Department, and some budget could be allocated for it if they could also implement a CGCG project there. The idea was not part of the original design in terms of location (i.e., it is outside Taytay Bay) and management/players (i.e., fish operators may be considered as the ES buyers). Nevertheless, it was deemed worth looking into as it is also within the context of tourism and coral reef rehabilitation. However, the issue of possible DENR assistance in implementing PES in Taytay Bay will have to be taken up with higher officials of DENR like the Director of the Biodiversity Management Bureau and the MIMAROPA²³ Regional Director.

The SF Specialist also pitched the updated design of the CGCG-PES project to the owners of NoaNoa Private Island Estate and the manager of Flower Island Resort in separate meetings. The owner of NoaNoa agreed to be a project partner, but he preferred to work with out-of-school youth and also mentioned about his plans of giving them scholarships. He committed to setting aside a section of his island for the project.

The Flower Island Resort manager was also quite receptive of the project concept. She believed that giant clam and coral planting will surely excite tourists and may even entice them to keep coming back to check on the growth of “their” corals and giant clams. She suggested, however, that the matter be discussed first with the general manager of the resort before a more official presentation is made to the owners, who are based in Manila.

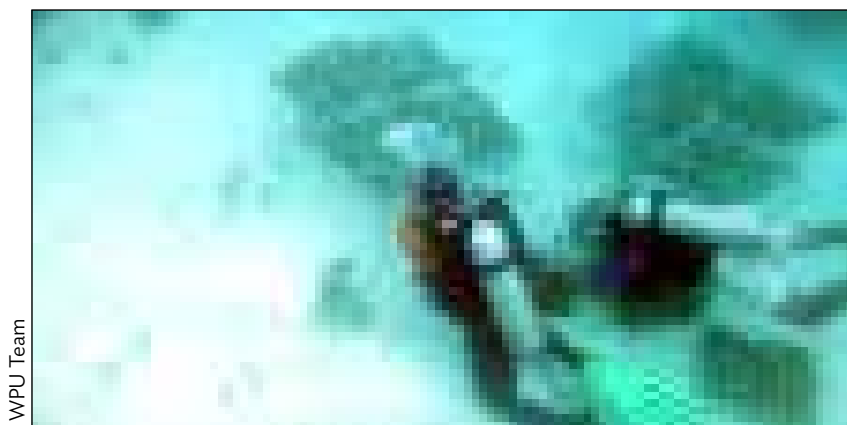
Establishing the CGCGs

Site selection. Four demonstration sites were eventually chosen for the CGCGs, namely: Tecas Reef, an MPA, and the reefs fringing the islands of Denot, Quimbaludan, and Talacanen. The decision was based on the results of the benchmarking of marine resources and the recommendations of the WPU team who conducted the study, further consultations with the LGU, and concurrence of the resort owners involved.

²³ Administrative Region IV-A comprises the provinces of **M**indoro, **M**arinduque, **R**omblon, and **P**alawan (MIMAROPA). For the local DENR to be officially involved in the project, it was deemed necessary to get approval from higher authorities (e.g., regional and national levels) since Taytay Bay is outside DENR's jurisdiction.

Planting of coral fragments and translocation of giant clams. The initial establishment of the CGCGs in Denot Island and Tecas Reef was undertaken as part of the practicum for the training on CGCG establishment in mid-2015, described on page 61.

1. *Coral nursery in Denot Island.* The coral nursery installed on underwater platforms was established south-center of the island, at the immediate drop-off of its fringing reef. Seven platforms were installed at depths of 5 m–7 m, while another three were placed at a depth of 9 m. With each platform containing 200 coral fragments,²⁴ the coral nursery has about 2,000 coral fragments. These will be allowed to grow for transplanting in selected degraded coral reefs in Taytay Bay.



WPU Team

Divers installing the underwater coral nursery platforms

2. *Giant clam garden in Tecas Reef.* A total of 211 giant clams were collected, tagged, and released in two days. The selected site was about 70 m–80 m away from the island in a rubble-sandy area at a depth of 5 m–6 m where natural populations of *Tridacna squamosa*, *T. crocea*, and *T. maxima* were observed.

In mid-July 2015, three members of the local fishers' group gathered more clams to add to the giant clam garden. Researcher-divers from WPU and two others from the local fishers' organization assisted the group in deploying the just collected 140 individuals underwater. This brought to 351 the total number of translocated giant clams in the area.

²⁴ Each coral fragment was secured firmly on a sawed-off PVC pipe. The PVC pipes are fixed on nursery plates that are, in turn, fastened to the underwater platforms anchored on posts.

In November 2016, a monitoring team went to Tecas Reef to transplant another batch of giant clams that were newly collected for the purpose. The team learned from the local guides that more than 500 individuals have since been added to the ones that were placed in the site in 2015. In a wide and sandy area about 5 m deep, and with the guidance of the reef restoration expert who led the team, the divers arranged the giant clams in groups of 20-25, forming a “highway” as previously suggested by the stakeholders. Some of them were so arranged to read “CTI,” the acronym of the Coral Triangle Initiative. The length of the giant clam highway could be further extended depending on the number of additional clams that can be collected.



N. Guevara

Giant clams arranged in the underwater garden off Tecas Island

3. *Direct planting of corals in Quimbaludan Island.* During the first monitoring of the coral nursery in Tecas Reef in July 2015, the team²⁵ discussed with the boat operator the locations and conditions of reefs surrounding Quimbaludan. The latter used to guide tourists from AIR to swim, snorkel, and scuba dive in the reefs in this area. The information was verified with the caretaker of Quimbaludan Island. The divers searched for poor coral cover and identified the reefs north of the island as a site for expansion of the coral gardens.

The team rehabilitated two 10 m x 10 m areas of coral reef using the direct planting method. They drove bamboo pegs into dead coral rocks and attached coral fragments and colonies onto the pegs. They planted around 245 coral fragments and colonies and then marked the planting sites with a floating marker.

²⁵ The first monitoring team consisted of four members of the PO, one DENR staffmember, four WPU research divers, and two CTI-SEA consultants.

WPU Team



Direct planting with corals fastened onto bamboo pegs

4. *Dome coral gardens in Talacanen Island.* In mid-September 2015, the project team, together with the resort owner's son, deployed 10 coral frames in the waters of Floral Talacanen Island Resort (FTIR); the frames are dome-shaped, made from iron bars. They attached an average of 78 coral fragments to each dome, or a total of 780 fragments for the 10 domes. The Fankhausers have committed to keep adding more domes to their coral garden.
5. *Fort Sta. Isabel's replica-cum-coral garden in Denot Island.* A replica of Fort Sta. Isabel was installed underwater in October 2016. The set-up includes a signage of "I LOVE TAYTAY" and an artist's rendition of the likeness of Queen Isabela II, which were added later. The planting of corals onto the replica was scheduled several times, but repeatedly aborted due to unfavorable weather conditions.

N. Guevara



Monitoring the Fort Sta. Isabel replica coral garden

Members of PILAKSAMA who have been involved in the previous underwater gardening activities were instructed to plant the coral fragments as soon as the weather allowed it. They were finally able to do so in April 2017, planting approximately 200 fragments onto the replica. They left out certain portions as these were reserved for tourists to plant “their” corals.

6. *Expansion of the CGCGs.* Another positive development is the keen interest expressed by the Sulubaaï Environmental Foundation (SEF, <https://sulubaaï-foundation.com/>), which operates the Pangatalan Island Resort. The resort owners and operators are coordinating with the CTI-SEA project for the setting up of coral gardens in their island. They introduced their own innovation of coral reef frames for deployment in areas needing rehabilitation. SEF designed frames of reinforced concrete, with steel bars sticking out from the sides and top where coral fragments can be fixed.

Monitoring and Maintenance of the CGCGs

The first monitoring of the coral nursery in Denot Island was done in mid-July 2015, less than a month after the nursery platforms were deployed. The survival rate of the corals was estimated at 99%. The divers fixed fragments which were loosely attached to the PVC pipes and replanted the empty pipes with new fragments.

A second monitoring was conducted two months afterward, in September 2015, where a similar 99% survival rate was observed; by that time, the corals have cemented themselves onto the pipes. The divers fixed one platform that was dislodged from its supporting post and removed algae that were attached to the screens and frames of the nursery platforms. They observed numerous coral fishes swimming around the structures.



WPU Team

Coral fragments outgrowing the PVC pipes in the nursery

Training on Coral and Giant Clam Garden Establishment

The training on *Principles, Guidelines, and Establishment of Coral and Taklobo Gardens in Taytay, Palawan* was conducted in Poblacion, Taytay on 22–27 June 2015. This activity was led by CTI–SEA RETA 7813 through PRIMEX and WPU. Forty-one participants, mostly from coastal and island *barangays* of Taytay Bay, took part in the training.

The five-day training equipped the participants with basic knowledge in the following areas:

- Biology and ecology of coral reefs and giant clams;
- Effects of climate change and humans on coral reef and marine ecosystems;
- The need for coral restoration and protection through planting of corals, complemented with translocation of giant clams;
- Ecological and economic benefits of CGCG establishment; and
- Monitoring and maintenance of CGCGs.

Equally important, the participants were provided with the following basic skills in and the proper way of establishing CGCGs:

- Coral nursery development: preparing coral garden plates and assembling coral platforms, collecting coral fragments and securing them onto the coral garden plates, deploying nursery platforms underwater; and
- Giant clam stock enhancement: collecting, tagging, transporting, and releasing clams in selected sites.



L. Calanog

Preparing the nursery plates as part of the hands-on exercises



L. Calanog

Cleaning and tagging giant clams prior to translocation

The team likewise visited the Quimbaludan planting site. They found 10 dead coral fragments out of the 245 that were planted, or a 96% survival rate. They cleared the planted corals of *Sargassum* which dominated the reefs in the area, and fixed the few bamboo pegs (where the coral fragments were attached) that came loose — perhaps due to wave action.

On the third monitoring of the coral nursery in Denot in mid-October 2015, the average survival rate of the fragments was estimated at 95%. This trip also included checking on the sites in Teras, Quimbaludan, and Talacanen.

The team found the giant clams in Teras Reef to be doing quite well. The survival rate was considered very high at 99.15%. Of the 351 giant clams released, only three mortalities were observed; 18 clams were partly bleached, of which 17 have few white spots on their mantles, while one individual had at least a third of its mantle bleached.

At the Quimbaludan coral garden, the team counted a total of 228 live coral fragments (7 dead ones in addition to the 10 recorded during the previous visit), or a 93% survival rate after three months of planting. The dead corals were covered with thin filamentous algae. The divers cleared the corals of macroalgae and fixed the dislodged fragments.

In Talacanen Island, the coral fragments attached to the domes appeared healthy, with a very high average survival rate of 97.55%. Some fishes were observed swimming about, and a decent-sized cuttlefish was found under one of the domes.



WPU Team

Cuttlefish swimming under one of the domes

In mid-November 2016, the coral reef restoration expert went back to Talacanen Island and Tecas Reef together with three divers from the community. They observed that almost all the planted fragments in the coral domes in Talacanen/FTIR had survived and have grown to about 20 cm in height or diameter. They saw no signs of mass coral bleaching in the area, macroalgal blooms, or siltation, which would negatively affect the corals. For these reasons, the FTIR site is considered ideal for a coral garden, and a future source of planting materials for areas that need rehabilitation.

The “underwater garden monitors” also noted plenty of fish and some giant clams along the reef edge, which they estimated to have an excellent coral cover of about 80%. They likewise observed three species of giant clams — two of which were free living, and one, rock boring. The expert conjectured that the free living clams must have been introduced to the site since these were not observed when the coral domes were installed in 2015.



In Tecas, the team inspected the clams deployed in the shallow area (at a 3 m depth) during the previous year; they appeared healthy, although about 10 empty shells were found. The mortalities could be due to bleaching since a few of the clams were already partly bleached the previous year. However, during this 2016 visit, no sign of bleaching was observed among the remaining live ones. As earlier mentioned, the group also added more giant clams to the garden during this trip.

On the third week of May 2017, the monitoring team visited the underwater Fort Sta. Isabel replica to check on the coral fragments planted the previous month. Twenty percent of the corals were sampled for growth to serve as basis for subsequent monitoring.

On the average, the fragments measured about 19 cm and were found to be generally healthy. However, a few of them showed signs of bleaching, probably due to stress during transplanting. The reef restoration expert suggested quarterly monitoring to assess the health of the corals and to note other species (e.g., fish and invertebrates) that have started to colonize the replica.

Table 14 provides a summary of the establishment and maintenance/monitoring of the CGCGs.

Table 14: Timeline for the Establishment and Monitoring of the CGCGs

				
June 2015	Establishment of coral nursery (2000 coral fragments)	Establishment of giant clam garden (211 giant clams)		
July 2015	First monitoring	First monitoring (+140 giant clams)	Direct planting in degraded coral reef site (245 coral fragments)	
Sept. 2015	Second monitoring		First monitoring	Deployment of 10 coral domes (780 coral fragments)
Oct. 2015	Third monitoring	Second monitoring	Second monitoring	First monitoring
.....		Third monitoring (+ 500 giant clams)		Maintenance by owner/operator
Nov. 2016		Fourth monitoring (+ more giant clams)		Second monitoring
April 2017	Planting of 200 coral fragments onto the underwater Fort Sta. Isabel replica			
May 2017	First monitoring of Fort Sta. Isabel coral garden			

Lessons

- Holding the multi-stakeholder workshop in January 2015 was a very strategic move. It was an ideal venue for leveling off the expectations of the different groups vis-à-vis the PES project. Moreover, the workshop outputs provided proof to the old saying that *“two (or more) heads are better than one.”* By contributing their ideas, the participants gave flesh to the initial design of the CGCG project. The exercise also provided them with a sense of ownership and responsibility for the project itself.
- Digesting fully the results of the benchmarking study and organizing the stakeholders’ outputs from the workshop in order to further develop/refine the PES scheme is serious business. Sequestering the experts/benchmarking team in a secluded out-of-reach venue (away from their offices) enabled the group to concentrate on the task at hand without unnecessary interruptions.
- When coming up with the PES design for a project, make sure that the required minimum ingredients for PES are present. First, the ES that will be identified falls under the four major categories of ES (provisioning, regulating, supporting, and cultural services) as defined under the Millennium Ecosystem Assessment (2005). And second, the PES players are present: the ES buyers and the ES sellers/suppliers/providers.
- When in doubt as to who to collaborate with, it is good to err on the side of inclusiveness. It is better to initially welcome all interested parties, rather than exclude them very early in the process. Let natural selection take its course — the more serious ones will stick around, while others will not. Live the PES spirit of the process being a voluntary transaction. Keep the door open for new/potential partners, but be discerning especially if they want to be officially included. Anyone who sees some benefit from participating in the project must also have something valuable to offer in return.

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Lessons *continued*

- Be mindful of existing policies, institutions, service providers, or individuals to support the PES project. The following are just a few examples of available support from the community/institutional benchmarking: (i) BFMARC, PILAKSAMA, and other community-based organizations which can be tapped as sources of manpower for CGCG establishment and maintenance; (ii) WPU and PSU, which could provide technical assistance; (iii) municipal LGU departments and offices whose functions are related to tourism, environmental protection, and natural resources management; and many others.
- Training the ES suppliers/providers on the ES product to be sold is key to ensuring the provision of quality ES. The training held for local fishermen involved in establishing and maintaining the CGCGs served to make them fully aware of the technical requirements for making their ES product (i.e., CGCGs) continuously available.
- Regular monitoring and maintenance of the established CGCGs is crucial to ensuring the sustainability of the ES to be sold. The CGCGs should be kept in good shape, and hence, the growth and survival of coral fragments and giant clams planted in the sites need to be monitored regularly. Moreover, continuous planting and replanting have to be done to expand the existing sites.

Chapter 4

STRUCTURING the CGCG-PES DEAL

Structuring the deal for the CGCG-PES project entailed three basic steps:

1. Developing the PES framework that will define and formalize the roles of the PES players;
2. Undertaking a willingness-to-pay study; and
3. Conducting consultation meetings with each of the PES providers or provider groups to determine the fee system and revenue sharing scheme to be applied.

The process of shepherding the CGCG-PES deal was as arduous and lengthy as the steps were deceptively simple. From the January 2015 workshop attended by a cross-section of stakeholders, it took more than two years of meetings and consultations before an MOU, which embodied the PES deal, was ready for signing.

Flashback to the 29 January 2015 workshop:

The first part of the agenda was a presentation of the benchmark assessment results for tourism and coastal/marine resources. Afterwards, the participants worked in groups with three major tasks: 1) mapping of Taytay Bay into fishing, tourism, and MPAs/marine sanctuaries; 2) specifying the PES actors, their roles, and the potential benefits they could get from the PES project; and 3) identification of instruments that may be adopted for the PES deal.

The composition of the PES project actors has evolved since then. Of those that were originally identified, only the Taytay LGU remained the same. Two have been specifically named, i.e., PILAKSAMA, a federation of fisher groups in lieu of the nameless “local communities” and FTIR for the generic “resort owners/operators.”

TTC and PRIMEX, which were not among the original set of actors, completed the set of signatories to the MOU for the PES project. Their roles and responsibilities in the project were defined, redefined, and refined through several consultations. After all the parties had examined the sixth draft of the MOU²⁶ and found the provisions to be acceptable,

²⁶ The document started out as a memorandum of agreement (MOA) and ended up being a memorandum of understanding (MOU). This was because an MOA accordingly has legal repercussions for any party if it fails to perform the identified roles/tasks/functions/obligations, while an MOU has none — and the partners felt a lot more comfortable with the latter.

the official document was finalized and signed by their respective representatives. By then, several activities had already taken place:

1. Giant clams had been translocated in Teras Reef on three separate occasions;
2. A coral nursery and the Fort Sta. Isabel replica-cum-coral garden had been established in the vicinity of Denot Island;
3. Direct coral planting had been undertaken in a degraded reef area off Quimbaludan Island; and
4. Dome coral gardens had been deployed in the waters of Talacanen. The established sites were also regularly visited to monitor the condition and survival rates of the giant clams and coral fragments.

The MOU

Wednesday, the third of May 2017, marked a milestone for the CGCG-PES project. Representatives from the major stakeholders finally signed the MOU governing its implementation and management. The well-attended ceremony also served as the formal launch of the CGCG-PES Project.

Five institutions signed the MOU:

- The municipal government of Taytay, represented by the Mayor, Hon. Romy L. Salvame;
- The Taytay Tourism Council (TTC), represented by its President, Mr. Chan Lee de Luna;
- PILAKSAMA, an organization of local fishers of Taytay, represented by its President, Mr. Nerio P. Samaniego;
- Floral Talacanen Island Resort, a private resort in Barangay Canique, represented by its attorney-in-fact, Ms. Flora M. Fankhauser; and
- Pacific Rim Innovation and Management Exponents, Inc. (PRIMEX), represented by its President and CEO, Ms. Elvira C. Ablaza.

By affixing their signatures on the MOU, the project partners signified their commitment to their respective roles and responsibilities, as spelled out in the document. (The full MOU is shown in Annex 3).

In essence, the Taytay LGU will initially pass two key pieces of legislation that will help ensure success of the project: (i) the establishment of a network of islands in Taytay Bay as tourism zone-cum-MPA; and (ii) the creation of the Taytay Tourism Fund for Environmental Conservation (TTFEC). The fund will provide sustainable financing for the protection and management of marine resources in Taytay Bay.

Moreover, the LGU will provide the necessary funds, human resources, and logistical support for maintaining and protecting the established CGCGs and other identified coral and giant clam restoration areas. The LGU will also manage all revenues generated by the CGCGs until an appropriate body is established to officially take on this role.

D.R. Salomon



CGCG- PES project partner representatives during the MOU signing and project launch (From left to right: Joie Matillano, Tourism Officer; Chan Lee de Luna, President, Tourism Council; Flora Fankhauser, Proprietor, Floral Talacanan Island Resort; Mayor Romy L. Salvame, SB member Merlyn Paculanang; Nerio P. Samaniego, President, PILAKSAMA; Guillermo L. Morales, Team Leader, CTI-SEA; and Lope A. Calanog, Sustainable Finance Specialist, CTI-SEA)

Having been mandated as the main coordinating body to facilitate the town's tourism development, the TTC is primarily responsible for promoting and marketing the CGCG tour experience and other tourism activities in Taytay. It will also advise the Taytay Tourism Office (TTO) on matters regarding tourism development, policy requirements, structures and facilities, standards, coordination and networking, and promotion and marketing.

For their part, members of PILAKSAMA will assist in the overall maintenance and protection of established CGCGs. They will also guide tourists who will avail of CGCG tour packages, specifically in planting coral fragments and translocating the giant clams. It is noteworthy that the establishment of CGCGs has already started in selected areas of Taytay Bay, with PILAKSAMA playing its assigned role in the project.

FTIR will maintain the coral domes already established in Talacanan Island. It will also expand the CGCGs to neighboring coral reef areas. It will allow tourists/visitors to dive and snorkel in FTIR's area of jurisdiction, subject to proper coordination and arrangement with its management. It will also help encourage other private resort owners in the development, expansion, and maintenance of CGCGs and to participate in other tourism-related activities.

PRIMEX, as the Project Management Consultant (PMC) of RETA 7813, is the principal technical partner in the PES project. It serves as the

main coordinating body for the establishment and development of the CGCGs for the duration of the project. It has already provided technical and financial assistance for the conduct of the training program on how to establish, monitor, maintain, and protect the CGCGs, including open water scuba diving for selected LGU and fisher group participants. The project has recommended a fee system for the CGCG tour experience and an income sharing scheme among stakeholders. It has also laid the foundation for the establishment of the TT FEC.

The partners are also designated to work together on the following specific aspects of the PES project:

- **Capacity building.** PRIMEX, as PMC, is responsible for providing technical assistance and other trainings deemed necessary. The LGU, in coordination with private resort owners, the academe, and other institutions, is likewise mandated to capacitate the local fisher groups on CGCG establishment and management, including other marine protection and conservation strategies.
- **Promoting the CGCG experience and other local tourism activities.** PRIMEX is assisting TTC in promoting the CGCG experience and in developing information materials for the project. FTIR will also promote and market the CGCGs with potential visitors and encourage other resort owners to do the same.
- **Acquisition of scuba diving gear.** Scuba diving gear is needed for one to plant corals and translocate giant clams. PILAKSAMA and FTIR will strive to acquire additional scuba diving equipment to add to the initial five sets that RETA 7813 has provided. Moreover, PILAKSAMA will be primarily responsible for the maintenance of the diving gear and other diving equipment and paraphernalia.
- **Establishment of TT FEC.** With RETA 7813 laying the foundation for the TT FEC and the LGU responsible for passing an ordinance for its creation, PILAKSAMA and FTIR are expected to contribute to the environmental fund — with the assistance of TTC.

Willingness-to-Pay Study

One of the key requirements for the formulation of an SF scheme for the PES project is the conduct of a willingness-to-pay (WTP) study. The results of the study will partly inform the setting of fees and payments for the use²⁷ of tourism-related resources in the municipality.

²⁷ The word “use” here refers to many forms, e.g., having access to a tourism destination; engaging in activities such as swimming, snorkeling, scuba diving, etc.; use of facilities like parking, anchorage, etc.; and many other uses.

Box 3: Responsible Tourism and Sustainable Financing

- Responsible tourism requires the protection and conservation of natural and cultural resources.
- Tourism, as an ecosystem service (ES), can be tapped as a financing scheme to support continuing efforts in protecting and conserving a community's natural resources.
- Financing can be done by imposing payment or fees for use of ecosystem services or PES.
- Fees are usually determined by conducting **willingness-to-pay (WTP)** studies.

For this purpose, a team of 10 technical staff/researchers from PSU-Taytay Campus was commissioned to undertake the study which was done over a three-month period, from 1 April to 30 June 2016.

Preparations for the Study

Before the actual field data gathering, a three-day training-workshop was conducted to apprise the research team on the background of RETA 7813 and the context of the WTP study. The training focused on the following aspects:

- Presentation and thorough discussion on the proposed survey instruments;
- Administration of the interview schedules and techniques to be used in conducting face-to face interviews;
- Data encoding and cleaning; and
- The contingent valuation technique for analyzing data generated by the study.

The survey instruments²⁸ were pretested before actual application. This process helped in establishing the different bids for the WTP analysis. Bid prices were meant to determine how much the respondents were willing to pay for the use of selected tourism sites and facilities in Taytay. Pretesting was likewise useful in improving the instruments by eliminating redundant and unnecessary questions. (The template of the survey instrument is in Annex 4.)

It is worth noting that some of the enumerators already had previous experience in conducting socioeconomic surveys and other related studies. Particularly relevant was the profiling study of Taytay, which was commissioned by the Malampaya Foundation in the past.

²⁸ Structured questionnaires or interview schedules were used. Three versions were prepared for use with the corresponding respondent groups: tourists, store owners, and boat operators.

The researchers conducted face-to-face interviews with the target respondents who were selected through simple random sampling. A total of 248 respondents were interviewed, which included 160 local and foreign visitors, 44 stall/store owners, and 44 boat owners/operators.

The interview schedule for the tourists/visitors had four parts: (i) socio-demographics; (ii) tourism-related information; (iii) awareness and perception of Taytay's CGCGs; and (iv) WTP. The questionnaires for the other two groups were a lot shorter as they only dealt with socio-demographics and WTP. **The WTP questions for the three groups essentially focused on the following aspects:**

1. Tourists

- Fee for the experience of coral and giant clam gardening, including the opportunity to be named as coral hero and included in the list that will be uploaded in a dedicated website;
- Entrance fee for Fort Sta. Isabel;
- Parking fee in the vicinity of Fort Sta. Isabel and the nearby pier;
- Entrance fee for Lake Manguao; and
- Parking fee in Lake Manguao

2. Stall/business owners

- Rental fee for the use of space for stalls and souvenir shops in the vicinity of Fort Sta. Isabel and the nearby pier; and
- Rental fee for use of space for stalls and souvenir shops in Lake Manguao.

3. Boat operators/private resort owners

- Fee for the use of pontoon facilities for boats of private resort owners/operators while waiting for tourists or visitors; and
- Anchorage fee for the use of facilities at the pier by private boat owners/operators.

A single-bounded dichotomous choice or “take-it-or-leave-it” approach was adopted in eliciting respondents’ willingness (or unwillingness) to pay the given bid amount (Table 15). This approach was chosen since most of the tourists or visitors in Taytay spent only a limited time in the town, as most of them were originally bound for El Nido to the north or for Puerto Princesa if they were going south.

During the portion on WTP for coral and giant clam gardening, the researchers showed the tourists photos of the ongoing underwater activities. The interviewers described to the respondents the experience that they may have if they choose to go on a CGCG tour. It was made clear to them that payment for such experience does not cover the costs of boat rental, scuba diving equipment, and tour guiding fee; these will have to be paid for separately.

Table 15. Bid Prices Offered to the Respondents of the WTP Survey

Activities/use of facilities	Bid 1	Bid 2	Bid 3	Bid 4
Entrance fee (Fort Sta. Isabel)	50	60	70	80
Parking fee (Fort Sta. Isabel)	10	15	20	25
Entrance fee (Lake Manguao)	50	60	70	80
Parking fee (Lake Manguao)	10	15	20	25
Coral gardening experience	1,000	1,500	2,000	2,500
Giant clam gardening experience	1,000	1,500	2,000	2,500
Stall concession fee/month (Fort Sta. Isabel and Lake Manguao)	1,000	2,000	3,000	4,000
Anchorage fee	100	200	300	400

Source: RETA 7813, 2016
Note: Amounts indicated for the different bids are in Philippine pesos (P).

General Findings

The survey results established that the respondents were generally willing to pay for different tourism-related services in Taytay. Like most WTP studies, this study confirmed that resource conservation and development were the primary motivations for tourists’ willingness to pay for such fees. The estimated mean WTPs for the respondent groups are summarized in Table 16 below.

Table 16. Summary of WTP for Tourism-related Fees

Respondent Group	Facilities/Activities	Range and Mean WTP
Tourists	Entrance fee-Fort Sta. Isabel	P 59.80 – P 78.40
	Parking fee-Fort Sta. Isabel	P 18.40
	Entrance fee-Lake Manguao	P 58.70 per visitor
	Parking fee-Lake Manguao	P 22.50
	Coral gardening experience	P 1,609.50–P 1,744.20
	Giant clam gardening experience	P 1,475 – P 2,248.20
Stall owners	Concession fee in Fort Sta. Isabel	P 1,909
	Concession fee in Lake Manguao	P 3,000
Boat operators	Anchorage fee	P 82

Source: RETA 7813, 2016

J. Matillano



Serenely scenic Lake Manguao at daybreak

Projected Revenues

The projected annual revenues that may be generated from imposing the different fees are presented in Table 17.

Table 17. Projected Revenues from Tourism Fees

Sources	Proposed fees	Projected annual revenue
Entrance fee- Fort Sta. Isabel	P 60 or P 78	P 360,295-P 472,161
Parking fee- Fort Sta. Isabel	P 18 or P 20	P 28,915-P 32,128
Entrance fee- Lake Manguao	P 58 or P 60	P 176,684-P 180,720
Parking fee- Lake Manguao	P 22.50*	P 18,072
Coral gardening experience	P 1,610- P 1,744	
Giant clam gardening experience	P 1,475- P 2,248	
Rental of business space- Fort Sta. Isabel	P 1,909*	
Rental of business space- Lake Manguao	P 3,000*	
Anchorage fee	P 82.00*	

Source: RETA 7813, 2016

*mean WTP amounts

Fort Sta. Isabel. The respondents considered an entrance fee of P60 or P78 to be fair and compensating. This revenue stream can generate an annual income of P360,295–P472,161 for the municipality.²⁹ The increased rate translates to an additional P291,441 over the earnings from the current rate of P30/visitor. The parking fee of P18–P20 in the vicinity of the fort would mean another P28,915–P32,128/yr. These revenues from entrance and parking fees can be used for improving the facilities and amenities at the fort.

Lake Manguao. Quite accessible and only 10–15 minutes by car from the town proper, one may make the assumption that at least half of the tourists that visit Fort Sta. Isabel may also go to the lake. From entrance fees of P58 or Php60 from about 3,012 visitors, the estimated yearly income is about P176,684–P180,720. An additional P18,072 in parking fees can also be generated annually.³⁰ The yearly income from combined entrance and parking fees may be used to augment the budget allocated for the development and maintenance of Lake Manguao as an ecotourism destination.

Coral and giant clam gardening. Some 95 respondents or 60% of the total indicated their willingness to pay for the experience of planting corals for the reasons outlined in Table 18 below.

Table 18. Reasons for Willingness to Pay for the Coral Gardening Experience

Reasons	Frequency*	Percentage
1. The activity is new and exciting/new adventure	78	82
2. Want to help in conserving the marine resources of Taytay	56	59
3. Want to contribute to the economy of Taytay	31	33
4. Want to provide income to local fishermen who are acting as guides	16	17
5. Want private resort owners to also benefit from and help in conservation	4	4

* Multiple responses, thus total frequency > 95, the number of respondents who gave affirmative answers

²⁹ The computation was based on 2013 figures which recorded the highest number of visitors to Fort Sta. Isabel at 6,024.

³⁰ The survey results showed that most of the tourists arrive in groups of three, and 80% of them travel on private or hired vehicles (cars or vans), translating to an estimated 803 parking spaces being taken or occupied.

Similar results were obtained for giant clam gardening. Majority of the tourists — although slightly lower at 56% or 90 respondents — also indicated their willingness to pay for the said experience. Their reasons followed the same trend as that for coral gardening as shown in Table 18.

The study found that charging fees for coral and giant clam gardening is feasible. Majority of the tourists interviewed showed interest in this experience, as reflected in their expressed WTP for this novel activity. The rates were considered reasonable since these amounted to only a small fraction of the respondents' median monthly income.

Ascertaining the potential revenue from this new tourist attraction (CGCG experience) is quite premature at this early stage. There are no numbers or records on which to base some estimates, unlike those of Fort Sta. Isabel and Lake Manguao. Being a new addition to the repertoire of marine-based tourist activities in Taytay, the CGCG experience needs to be in full operation before it is fully advertised or promoted. At least a year or two may be needed for the project to be able to make a count of actual demand, and another two to three years or more for a trend to emerge.

Likewise, projected annual revenues from the rental of business space in Fort Sta. Isabel and Lake Manguao, as well as docking fees in Taytay Bay could not be made. There is no data on the following on which to base the estimates: (i) number of stalls for rent, which will be built in or around Fort Sta. Isabel and Lake Manguao; and (ii) number of boats docking in the port, which will greatly depend on the volume of tourists who will sign up for the CGCG experience and the proposed island hopping tour packages.

Municipal Ordinance on Tourism Fees and Revenue Sharing System

A municipal ordinance is necessary to provide the legal basis for implementing the proposed tourism fees and revenue sharing system. With that in view, an ordinance was drafted with the title, *“An Ordinance Prescribing Tourism Fees and Revenue Sharing System, Establishing an Environment Conservation Trust Fund, Creating an Environment Conservation Trust Fund Management Board, and Imposing Fines and Penalties for Violation thereof in the Municipality of Taytay, Palawan.”* The draft underwent first reading at a meeting of the *Sangguniang Bayan* on 18 August 2017. (An ordinance has to go through three readings before it is passed.)

Prescribed Tourism Fees

Section 2, Article II on Tourism Fees and Collection System of the draft ordinance prescribes the following fees to be collected from tourists and from local service providers who operate tourism-related services in the municipality:

- 1. Entrance fee
 - a. Taytay islands tour P100/visitor
 - b. Terrestrial tour P100/visitor
 - c. Fort Sta. Isabel P80/visitor
- 2. Environment/conservation fee
 - a. Foreign tourist/visitor P250/visitor
 - b. Local tourist P200/tourist

(Note: Senior citizens and students get a 20% discount.)
- 3. CGCG experience
 - a. With own diving gear P1,000/visitor
 - b. With rented diving gear P2,000/visitor
- 4. Tour guiding fee for CGCG experience
 - a. Per CGCG experience P500/visitor
- 5. Shoreline swimming/snorkeling/island hopping
 - a. With complete package P1,000/visitor

(Note: Swimming/snorkeling paraphernalia and food included)
- 6. Tour guiding fee for shoreline swimming/snorkeling/island hopping
 - a. 3 pax or less P300/group
 - b. 4 to 6 pax P600/group
- 7. Boat rental
 - a. Small (1 to 4 pax) P2,500/trip
 - b. Medium (5 to 8 pax) P3,000/trip
 - c. Big (9 to 12 pax) P3,500/trip
 - d. Extra big (13 to 25 pax) P6,500/trip
- 8. Docking/mooring fee
 - a. Small and medium boat P50/dock
 - b. Big and extra big boat P100/dock
- 9. Parking fee
 - a. Car/van P20/vehicle
 - b. Bus P100/bus
- 10. Stall rental/concession fee
 - a. Small (3x5 sq. m.) P2,500/month
 - b. Medium (4x5 sq. m.) P3,500/month
 - c. Large (5x5 sq. m.) P4,500/month
- 11. Transportation services
 - a. Tricycle to:
 - Kuyawyaw Falls P1,500/trip
 - Lake Manguao P800/trip

- Malampaya Sound P1,200/trip
 - Canique Falls P1,500/trip
 - Poblacion proper P600/trip
 - b. Van P300/passenger
 - c. Motorbike
 - Big sports bike P1,200/day
 - Small ordinary bike P600/day
 - 12. Movie filming/video shooting (in all tourist sites)
 - a. Pre-nuptial P3,000/day
 - b. Commercial video P4,000/day
 - c. Commercial film/movie
 - Local producer P7,000/day
 - International producer P15,000/day
 - d. Wedding venue P7,000/day
- (Note: In all of the above, local residents get a 25% discount.)
13. Contribution of owners of resorts/accommodation facilities
(Note: Owners of resorts or accommodation facilities will contribute Php20 for every guest they have.)

Revenue Sharing System

Article III, Section 1 of the draft ordinance stipulates that the following sharing system be adopted in distributing the revenues generated from tourism:

- 1. Entrance Fee
 - a. CSTDF³¹ 5%
 - b. General Fund 10%
 - c. Barangay Fund 85%
- 2. Environment/conservation fee
 - a. CSTDF 90%
 - b. General Fund 10%
- 3. CGCG experience
 - a. CSTDF 10%
 - b. Association 5%
 - c. Owner/operator 85%
- 4. Tour guiding fee for CGCG experience
 - a. CSTDF 10%
 - b. Association 10%
 - c. Owner/operator 80%

³¹ In the earlier versions of the ordinance, the fund was referred to as the Taytay Trust Fund for Environmental Conservation (TTFEC). The name was changed to Environment Conservation Trust Fund (ECTF) in the draft presented for first reading at the SB meeting, where it was further amended to Conservation and Sustainable Tourism Development Fund (CSTDF).

5. Shoreline swimming/snorkeling/island hopping	
a. CSTDF	10%
b. Association	5%
c. Owner/operator	85%
6. Tour guiding fee for shoreline swimming/snorkeling/island hopping	
a. CSTDF	10%
b. Association	10%
c. Owner/operator	80%
7. Boat rental	
a. CSTDF	5%
b. Association	5%
c. Owner/operator	90%
8. Docking fee	
a. CSTDF	10%
b. General Fund	80%
c. Barangay Fund	10%
9. Parking fee	
a. CSTDF	10%
b. General Fund	80%
c. Barangay Fund	10%
10. Stall rental/concession fee	
a. CSTDF	10%
b. General Fund	80%
c. Barangay Fund	10%
11. Transportation services	
a. CSTDF	10%
b. Association	5%
c. Owner/operator	85%
12. Movie filming/video shooting (in all tourist sites)	
a. CSTDF	50%
b. General Fund	40%
c. Barangay Fund	10%
13. Contribution of owners of resorts/accommodation facilities	
(Note: 100%, i.e., P20/guest will go to CSTDF.)	

The rates for the tourism fees and system for revenue sharing were arrived at after extensive meetings and consultations with the different sectors involved. These include resort and hotel owners, boat operators, tricycle and motorbike operators, stall concessionaires, and fisher groups who will also act as tour guides. Some of the rates were based on the WTP study conducted by the PSU research team. The SF Specialist consulted tour operators and scuba diving shops in El Nido and Puerto Princesa to get ideas for similar fees to be imposed in Taytay. He likewise consulted with the LGUs of Mabini, Batangas (for the Anilao Beach Resorts) and Dauin, Negros Oriental (for the Apo Island Marine Sanctuary).

L. Calanog



ISLAND DESTINATION	ENTRANCE FEE	3 CYLINDER ENGINE		4 CYLINDER ENGINE	
		MINIMUM FARE GOOD FOR 2 PAX	EXCESS OF 2 PAX ADDITIONAL RATE PER PAX	MINIMUM FARE GOOD FOR 2 PAX	EXCESS OF 2 PAX ADDITIONAL RATE PER PAX
COVRE ISLAND	PHP 75.00			PHP 700.00	PHP 115.50
PANGATO REEF	80.00			800.00	123.33
ULU ISLAND	80.00			800.00	123.33
TARAPAN ISLAND	80.00			1,400.00	233.33
PANDAN ISLAND	80.00			1,400.00	233.33
ISLAND HOPPING COMPRISED OF ANY 3 ISLANDS		PHP 1,300.00	PHP 216.67	PHP 1,500.00	PHP 250.00
OTHER DESTINATIONS:					
LOS PALMAS - DIRECT		PHP 1,950.00	PHP 225.00	PHP 2,200.00	PHP 366.67
LOS PALMAS WITH ISLAND HOPPING		2,100.00	250.00	2,400.00	400.00
CRUISING - BOTTOM LINE 6 TROLLING		3,000.00	300.00	3,000.00	500.00
TACUBARI		800.00	123.33	800.00	133.33
MACUNGAN RIVER		950.00	158.33	950.00	158.33
SCUBA DIVING - INSIDE (TWIN REEL, STARTING DUMES, PANDAN NEARBY)		PHP 1,800.00	PHP 300.00	PHP 2,280.00	PHP 375.00
SCUBA DIVING - OUTSIDE (WRECK, PALANQUE, PANGAS, TUNNEL, INSLATE, BELON'S SHIPWRECK & MAMAY'S REEF)		PHP 3,800.00	PHP 633.33	PHP 4,000.00	PHP 666.67
ENVIRONMENTAL FEE: PHP 40.00/PAX ** TERMINAL FEE: PHP 50/PAX *** VEHICLE FEE: PHP 12.00/VEHICLE					
EXCESS OF MINIMUM CAPACITY ADDITIONAL PER PAX WILL BE CHARGED BASED ON MINIMUM FARE ON EVERY DESTINATION.					

A billboard showing the rates and fees charged in Honda Bay, Puerto Princesa

The process of determining and rationalizing the figures was a long and tedious process. The fees and revenue sharing system went through several revisions until they were considered to be reasonable and fair to all concerned. However, the proposed rates are far from final — they are very likely to change still. Part of the process of passing the ordinance is presenting its key provisions in public hearings with the concerned sectors. If and when the ordinance is eventually passed, the LGU may decide to pilot-test the stipulated rates and modify them later, as needed.

Overall, the stakeholders were happy and relieved that, for the first time, there were rates set for everyone's guidance. With standard fees for specific services, arbitrary rates and overpricing by some operators will be avoided. Moreover, everyone is aware of how revenues from different sources are apportioned, with the revenue sharing system clearly spelled out. The establishment of a fund where a percentage of the income will be deposited is another welcome development.

There was general appreciation for the RETA for having initiated the establishment of the tourism fee and revenue sharing system. More importantly, parties involved felt a sense of ownership of both the process and its outcome. They were consulted throughout, and their inputs were considered in the rate setting exercise. This is an important step in charting the direction for sustainable tourism development in Taytay.

Lessons

- An agreement can be considered complete only after it is signed by all parties concerned, and getting institutions/ES players to do so takes time. However, despite the participatory and exhaustive process that was followed, parties should still be open to further changes if warranted.
- There must be room for additional organizations or institutions to join the PES agreement. For instance, the president of Sulubaa Environmental Foundation repeatedly expressed interest to be made an official partner of the CGCG-PES project, even after the MOU has been signed. The SF Specialist consulted with the other partners, who readily welcomed the addition of another member. They decided that an addendum to the original MOU was all that was needed to formalize the arrangement. (A copy of the addendum is shown in Annex 5.)
- The agreement should be realistic and endorsed by key stakeholders in the community or municipality. Otherwise, it will be of no use if the provisions cannot be fulfilled, or worse, it may result in frustration and breeding mistrust among the key players.
- In undertaking the WTP study, as in the benchmarking assessment, it is important to work with experts who belong to an impartial or independent institution (like the academe). A team of researchers with experience in conducting a similar study should be given priority in hiring, in case there is more than one group being considered for the job.
- Arriving at an agreed fee and revenue sharing system also takes time as different parties have different views about fees and income sharing. It is important to always emphasize that the “formula” was not arrived at through some arbitrary process. The product is the combined outcome of research (WTP study and consultations with similar ES providers in other places) and a continuous process of consultation with local stakeholders.
- Project implementers should treat the agreed fee and sharing system as a work in progress. Although the process for determining the fees and revenue sharing was consultative, there is a big difference between how the system looks on paper and how it will work (or not) in the field. The fee and sharing system should be reviewed after a period of pilot testing, and adjustments made as needed.

Chapter 5

ESTABLISHING THE CONSERVATION AND SUSTAINABLE TOURISM DEVELOPMENT FUND

In keeping with its goal of implementing responsible tourism, Taytay is promoting the management and protection of its marine and terrestrial resources. While finding ways to vigorously promote its tourism program, it also needs to put in place funding streams to better manage its natural resources. The LGU has to ensure sustainable financing through the establishment of a conservation and sustainable tourism development fund (CSTDF).

The SF Specialist consulted extensively with the concerned sectors to gather ideas on how to build an environment or conservation fund along with the imposition of tourism fees. He also discussed with local tourism officials in Puerto Princesa, where he learned that environmental fees collected are deposited in a special trust fund administered by the City Treasurer. A copy of the Ecotourism Fee Ordinance of neighboring El Nido also proved to be a useful reference in drafting a similar document for Taytay.

As previously indicated, the proposed fees are to be imposed alike on tourists and tourism-related service providers, even on tour guides. The idea of establishing the special fund was piggybacked on the initiative of determining the fees and how the income from such fees will be shared among the ES players. While Puerto Princesa collects a fixed environmental fee of P40/tourist which is deposited in a special trust fund, Taytay is adopting a different scheme. Aside from getting 90% from the conservation and sustainable tourism development fees, the CSTDF will also get varying-sized slices from the different tourism fees, e.g., 5% from entrance fees, 100% from the contribution of resort or guesthouse owners of P20/guest, etc. A complete list of these percentages is presented in Box 4.

Creating the CSTDF

The creation and management of the CSTDF³² is imbedded in Article IV of the same draft municipal ordinance mentioned in the previous chapter.

³² The CSTDF was originally set up as the Environment Conservation Trust Fund (ECTF). However, during the first reading of the draft ordinance, some SB members expressed their reservations about establishing a trust fund due to some negative experience in the past. Instead, they proposed to establish the CSTDF, which will form part of the municipal LGU's General Fund.

- The document stipulates several basic provisions, as follows:
- (i) the fund shall be used mainly for the implementation of environmental conservation and development of sustainable tourism programs or projects in the municipality;
 - (ii) a portion of the fees, rentals, fines, and administrative penalties collected under the ordinance shall be put into the CSTDF account to be deposited in the General Fund; and
 - (iii) the fund shall be utilized in accordance with relevant government laws and regulations.

Box 4: The CSTDF– where to get it and where to spend it	
<p>The Municipality shall get the following percentages from the various tourism-related fees toward building the CSTDF as outlined below:</p> <ul style="list-style-type: none">5% : Entrance fees90% : Environment/conservation fees10% : GCGC experience10% : GCGC experience tour guiding fee10% : Shoreline swimming/snorkeling/island hopping fees10% : Shoreline swimming/snorkeling/island hopping tour guiding fees5% : Boat rentals10% : Docking fees10% : Parking fees10% : Stall rental/concession fees10% : Transportation services50% : Movie filming/video shooting fees (in all tourist sites)100% : Contribution of resort/guesthouse owners (Php 20/visitor)50% : Fines and penalties from violators	<p>Uses of the CSTDF</p> <p>The use of fund shall be guided mainly by the programs and projects contained in the CSTD Plan. In addition, subject to the approval of the CSTDF Management Board, the fund may also be used for the following purposes:</p> <ol style="list-style-type: none">1. rehabilitation of coastal and marine and terrestrial resources;2. effective environmental law enforcement;3. local skills development, specifically those related to delivery of tourism-related services;4. disaster risk reduction and climate adaption measures;5. solid waste management;6. conduct of research and studies on: a) establishment of the carrying capacity of tourism destinations; b) rates for conservation fees, premium fees, and other user fees; resource assessment and monitoring; c) determining and declaring open and closed seasons for human activities; d) vulnerability studies; and others;7. strengthening and operations of CSTDF Management Office(e.g., printing of collection tickets, procurement of tokens, salaries and wages of inspectors and collection agents, production of IEC materials, purchase of office supplies and other logistical needs, etc.); and8. monitoring and evaluation.

Establishing the CSTDF Management Board (CSTDFMB)

The ordinance also provides for the creation of the CSTDF Management Board for the fund which shall have the following functions:

- Manage and administer the use of the CSTDF;
- Formulate and recommend to the *Sangguniang Bayan* any adjustments to tourism and tourism-related fees, rentals, charges, as well as the revenue sharing system, as provided in the ordinance;
- Formulate the conservation and sustainable tourism development plan (CSTDP) which will ensure the conservation, protection, and management of the municipality's terrestrial and coastal/marine resources — the foundation of sustainable tourism in Taytay;
- Formulate specific implementing rules and regulations for the ordinance and the CSTDP;
- Review and recommend tourism and environment conservation-related subcontracting agreements by the municipality and for public-private partnerships; and
- Recommend to the Mayor and SB such other policies and regulations to achieve the objectives of the ordinance.

The CSTDF Management Board shall be composed of the following as officers and members:

- Municipal Mayor or his/her duly authorized representative as Chair;
- Chairperson of the Committee on Tourism of the SB as Vice-Chair;

Members:

- Chairperson of the Committee on Fisheries and Agriculture of the SB;
- Chairperson of the Committee on Ways and Means of the SB;
- Chairperson of the Committee on Environment of the SB;
- Municipal Tourism Officer;
- Municipal Agricultural Officer;
- Municipal Planning and Development Officer;
- Municipal Fisheries and Aquatic Resources Management Council (MFARMC) chairperson;
- Taytay Tourism Council President;
- One representative of the association of NGOs directly involved in tourism and coastal resources management duly accredited by the SB;
- One representative from the association of resort owners and tourism accommodation facilities duly accredited by the SB;
- One representative from the federation of boat operators' associations duly accredited by the SB;
- One representative from the transportation services association duly accredited by the SB; and
- One representative from people's/fishermen's organization duly accredited by the SB.

Passing the Municipal Ordinance

As previously mentioned, the ordinance creating the CSTDF (among others) is still in draft form and needs to go through a standard process before it is approved. SB member Delma Edep (Chair of the LGU Committee on Ways and Means), who volunteered to sponsor the ordinance, explained that it has to pass three readings and outlined the procedure below.

- **First reading.** The draft ordinance is introduced to the SB meeting for docketing. The draft is then referred to the relevant committees for initial review. This group includes the committees on Tourism, Fisheries and Agriculture, Ways and Means, and Environment (completed).
- **Community consultations.** The chairpersons of the above-mentioned committees will conduct public hearing by clusters. They will present the salient points of the draft ordinance and get the sentiments (comments, suggestions, objections, etc.) of concerned sectors. The group will meet to consolidate the results of the public consultations and incorporate them into the draft ordinance, as needed.
- **Second reading.** The second reading is reportedly the most difficult in the whole process; the draft ordinance (as revised with inputs from the community) is presented to the plenary for scrutiny and deliberation.
- **Third reading.** The committees-in-charge will incorporate the results of the deliberations and schedule another round of presentation of the draft ordinance (second revision) to the SB. If there are no major or contentious issues raised, this is usually the third and final reading before the ordinance is approved and passed.

Note: The approval of the ordinance does not mean that the collection of the prescribed fees and system of revenue sharing will take effect automatically. **Another ordinance needs to be introduced and passed for that purpose.**

Implementing and Monitoring the CSTDF

A CSTDF Management Office (CSTDFMO) shall be created under the Office of the Mayor to implement the CSTDP and assist the Mayor in enforcing the provisions of the ordinance. **The CSTDFMO has the following functions and responsibilities:**

- Prepare the annual operating budget for the implementation of the ordinance and the CSTDP;
- Serve as the secretariat of the CSTDF Management Board and provide any assistance required in the discharge of the CSTDFMB's functions;

- Collect, together with the Municipal Treasurer, tourism-related fees, including the prescribed administrative fines for policy violations;
- Inspect tourism-related establishment and facilities (e.g., resorts, restaurants, boats, etc.) in partnership with other concerned LGU offices; and
- Monitor the provision of services for compliance with the requirements provided under the ordinance and recommend appropriate action against violators.

The CSTDFMO can call on any government or nongovernment organization, academe, people's organization, or appropriate institution to assist in carrying out its mandate.

Upon the CSTDFMO's assessment and through the endorsement of the CSTDFMB, the municipal government shall provide appropriate incentives for all tourism service providers for their diligence in complying with the provisions of the ordinance.

Fines, Penalties, and Administrative Adjudication

Forming a quasi-judicial body. The ordinance also stipulates fines and penalties for violators. A quasi-judicial body shall be formed to conduct hearings to investigate and impose sanctions on any person accused of violating any provisions of the ordinance. The body shall be composed of the following:

- Municipal Tourism Officer, Chair;
- Municipal Agriculturist, Co-chair;
- Municipal Administrator, Member;
- Municipal Chief of Police, Member;
- Legal Officer, Member;
- FARMC representative, Member; and
- NGO/concerned organization, Member.

This body shall have the power to hear all administrative complaints for violation/s of the ordinance and to impose the corresponding fines or penalties. It is also empowered to administer oaths, summon witnesses, require the production of documents or other things by a *subpoena duce tecum*, and employ other processes, as may be necessary. It may issue supplementary rules and procedures to expedite such proceedings.

The ordinance also provides some guidelines on how the quasi-judicial body shall observe basic procedures in performing its functions, e.g., establishing a quorum, nature of proceedings, hearing, inhibition (of a member) from proceedings, and handing down decisions.

Administrative fines and penalties. The following administrative fines and penalties shall be observed in the enforcement of the ordinance:

- Any person who refuses to pay the prescribed tourism fee shall be penalized with a fine of P2,500 and denied access to all tourism sites/destinations in the municipality of Taytay.
- Misrepresentation of one's identity, residency, and the like in order to avoid payment of tourism fee shall be penalized in the amount of P2,500.
- Non-issuance of tickets by the authorized collector shall be penalized with a fine of P2,500 without prejudice to the cancellation of the authority to collect and the filing of an appropriate criminal case.
- Unauthorized collection of tourism fee by any individual, entity, or group shall be penalized with a fine of P2,500 and without prejudice to the filing of an appropriate case in court.
- Island resorts and other mainland accommodation facilities owners/operators who will not collect the prescribed tourism fee shall be sanctioned and fined in the amount of:
 - a. First offense: P2,500
 - b. Second offense: P2,500 and warning for cancellation of business permit
 - c. Third offense: P2,500 and cancellation of business permit
- Any land transport vehicle or water vessel plying any tourist destination within Taytay without trip clearance and carrying a guest who has not paid the prescribed tourism fees shall be so sanctioned:
 - a. First offense: P1,000
 - b. Second offense: P1,500
 - c. Third offense: P2,500 and suspension of business permit for one year.

The Municipal Mayor, being the Chief Executive, shall impose administrative sanctions on anyone who violates the ordinance.

Sharing of proceeds. Half of the collected fines shall accrue to the CSTDF; 25% shall form part of the General Fund; and the remaining 25% shall be equally divided among members of the apprehending team. This revenue sharing scheme shall be subject to the rules of the Commission on Audit (COA) and other pertinent laws.

Lessons

- Getting the agreement of the project stakeholders on the form of conservation fund takes time. It could be simply a conservation fund or a trust fund. Relevant authorities (e.g., Department of Budget Management and COA) should be consulted. Seek advice from other groups implementing a similar project regarding the most appropriate kind of fund to adopt.
- In keeping with the adaptive approach of the CGCG-PES Project, the name of the fund was changed from the original “environment trust fund” to “conservation and sustainable tourism development fund”. This was the *Sangguniang Bayan*’s response to some of its members’ misgivings about the establishment of a trust fund which they had some negative experiences with in the past.
- All possible key players/stakeholders should be represented in the Fund Management Board. The inclusion of the following is mandatory: local executives, representatives from the most relevant committees of the local legislative body, the private sector, the local community sector, service providers, etc.
- The length of time it will take to pass an ordinance cannot be predetermined. Normally, such local ordinance needs to pass three readings in addition to the community consultations, which are an integral part of the process. No one knows how long these steps will take. The approval of this piece of legislation is the single biggest hurdle that needs to be tackled before the PES deal can be implemented.

Chapter 6

CONCLUSION AND THE WAY FORWARD

Conclusion

Undertaking a PES project is not a quick and easy job. The project in Taytay officially started in August 2014 and it took almost three more years before the partners signed the MOU governing its implementation. In between, several major activities were carried out: benchmarking and situation analysis, designing the PES scheme, establishing and maintaining the CGCGs, providing a number of trainings to the fisherfolk involved in the project, and conducting a WTP study on tourism fees.

Drafting of the ordinance on tourism fees/revenue sharing system and the creation of a conservation and sustainable tourism development fund began in earnest in the later part of 2016. This was right after the WTP study results were presented to the stakeholders. The SF Specialist turned in a ready-to-present version of the draft ordinance to selected LGU officials in July 2017.

The draft document went through the first reading in a *Sangguniang Bayan* meeting a month afterwards. This piece of legislation provides the legal basis for the proposed fees and the establishment of the fund, among others. Until it is approved, all the stipulations contained therein cannot take effect. The SB member who co-sponsored the ordinance projects that it should pass the third and final reading by the end of 2017.

Outlining the process above is not meant to discourage the reader who is interested in adopting a similar SF scheme for an environmental conservation or resource management project. Rather, it aims to paint a realistic picture of what it takes to put a PES deal in place, from the concept stage until it is ready for implementation. There are no — and there should be no — shortcuts in the process.

Based on the CGCG-PES experience in Taytay, the work involves four major steps: (i) benchmarking and situation analysis; (ii) establishing the PES deal or scheme; (iii) structuring the PES deal; and (iv) creating an SF scheme through the establishment of a special fund for the project. Anyone who is interested in a similar undertaking should consider some key lessons and pointers.

1. Benchmarking and Situation Analysis

- Bear in mind that the PES project must be science-based. A comprehensive and thorough assessment of the resources and ecosystem services available in the community is a prerequisite to designing the PES scheme.
- Call on the local authorities and get their permission before conducting benchmarking in the community. Provide them with a background on the PES project. Explain the objectives and mechanics of the assessment, as well as the work schedule and composition of the team who will be going to the field. Equally important, regularly apprise them on the progress of the benchmarking activity.
- Work with a multidisciplinary team of recognized experts in their respective fields and who belong to a reputable organization with proven track record in conducting benchmarking studies. The team needs to be neutral and impartial.
- It would be ideal to have some baseline information prior to the benchmarking study, although this is not always possible. The data and information generated will be more meaningful if they can be compared with results of a similar study conducted previously in the same sites.

2. Establishing the PES Deal

- Developing a PES deal should not be rushed. The results of the benchmarking study should be fully digested. Organizing a workshop to identify/develop the most feasible PES scheme is highly recommended. If possible, bring the benchmarking team to a location away from their workplace so that they can concentrate on the task at hand, free from unnecessary interruptions.
- During the workshop, check that the necessary ingredients for PES exist: (i) the ES that will be identified falls under any of the four major categories of ES (provisioning, regulating, supporting, and cultural services) as defined under the Millennium Ecosystem Assessment (2005); and (ii) the PES players are present: ES buyers and ES sellers or providers.
- Be aware of the institutions and service providers (other than the identified ES providers), including policies that are available to support the PES scheme. These can provide the enabling environment that will help ensure success of the project.

3. Structuring the PES Deal

- Clearly define the benefits that the ES buyers will get from the service. Also make sure that the ES sellers can continuously supply the service. Keep in mind that PES is a voluntary transaction where

both parties should derive mutual benefits.

- Understand that getting institutions/ES players to ink an agreement takes time due to the participatory and exhaustive process required in developing a PES deal.
- Maintain some flexibility and be open to making changes in any aspect of the PES deal, if deemed beneficial, e.g., accepting additional partners even after MOU signing.
- One key component of the PES structure is the tourist fee and revenue sharing system. Arriving at a set of rates that is acceptable to all parties concerned takes time. The fees should be based on research (e.g., WTP study) done by a reputable team of experts familiar with the conduct of such a study. Visit and study the system of similar ES providers in other localities and engage stakeholders in a continuous process of consultation.
- Remind the players that the agreed fee and sharing system is a work in progress. The system should be reviewed after a set period of pilot testing, and adjustments should be made as needed.

4. Establishing the Sustainable Financing Scheme through the Creation of a Special Fund

- The agreed upon (albeit tentatively) tourism fees and revenue sharing system must be translated into a legal document, such as an ordinance, that will also create the SF scheme. Consult with relevant authorities on the most appropriate and legal form to adopt. Learn from the experience of other groups who have developed a similar scheme.
- A management board should be formed to manage the fund. All possible key players should be represented in the board, like local government executives, representatives from concerned committees of the local legislative body, as well as those from the local communities where the project will be implemented. Others will include representatives from the various tourism-related service providers and other relevant groups such as NGOs and CSOs.
- A definite schedule for the approval of the ordinance cannot be made. It will depend largely on the legislative officials who will sponsor the ordinance — how assiduous they are in conducting the requisite consultations in the community for inputs to specific provisions of the ordinance. It will also depend on how persistent they are in including the draft ordinance in the SB meeting agenda for the various stages of reading and deliberation.

The Way Forward

1. **Follow up on the approval of the draft ordinance.** The draft ordinance has already passed the first reading under the SB procedure, but it still has to go through the second and third readings. Every effort must be exerted to facilitate its approval. The ordinance provides the legal basis for establishing the SF scheme in Taytay and until it is approved, the PES deal could not be implemented.
2. **Implement the PES deal.** Once the ordinance has been passed, the next step is to implement the PES deal. Specific provisions of the MOU must be translated into a management plan, which should contain the specific activities and their duration, cost, and responsible parties. The management plan should also be translated into annual work and financial plans that must be approved by concerned authorities.
3. **Identify priority activities from the work plan for implementation.** For instance:
 - Advanced scuba diving training should be provided to the fishermen to augment the basic training they received through the project. They need to pass the Master Diver License test to qualify as underwater tour guides. They should also be trained in handling medical emergencies and rescue operations to ensure safety of the tourists who will sign up for the CGCG tours. The project should also recruit additional fishermen to be trained as underwater/ CGCG tour guides. The assistance of the Department of Tourism should be sought in the design of an appropriate underwater tour guiding training module, if needed.
 - The established CGCGs should be monitored regularly. Other related activities need to be done, such as maintaining the coral nursery in Denot as a ready source of planting materials, transplanting coral fragments from the nursery to the Talacanen/ FTIR and Quimbaludan sites, and collecting more giant clams for translocation in Teras Reef.
 - To make the existing CGCG-PES project more viable, and in anticipation of increased tourist arrivals in Taytay, the CGCGs should be expanded to other sites within Taytay Bay. This may necessitate the participation of more resort owners and tour operators, including other local fishermen's organizations.
4. **Confirm that the ES is delivered and benefits are received.** Following the design of the PES deal, the provision and delivery of the ES (the CGCG experience as described in this resource book) and receipt of the benefits must be verified and confirmed. This may form part of the regular monitoring process of PES implementation.

A third party verifier may be commissioned to conduct this activity. However, the ES buyers and ES sellers must be informed prior to the conduct of verification. The PES parties should also agree on the schedule of the verification and the cost involved.

- 5. Conduct monitoring and evaluation (M&E).** An M&E system will help track the progress of the PES deal, i.e., whether it is meeting its objectives and plan of work, and if not, determine the course of action to take to get everything back on track.

An internal PES monitoring team from the CSTDFMO should be organized, while the evaluation should be undertaken by a neutral third party team. In undertaking the M&E, the PES implementers should agree on the parameters for monitoring (Box 5). Each parameter maybe translated into specific indicators to make the M&E process more efficient. The timing and cost involved in conducting the M&E should also be defined.

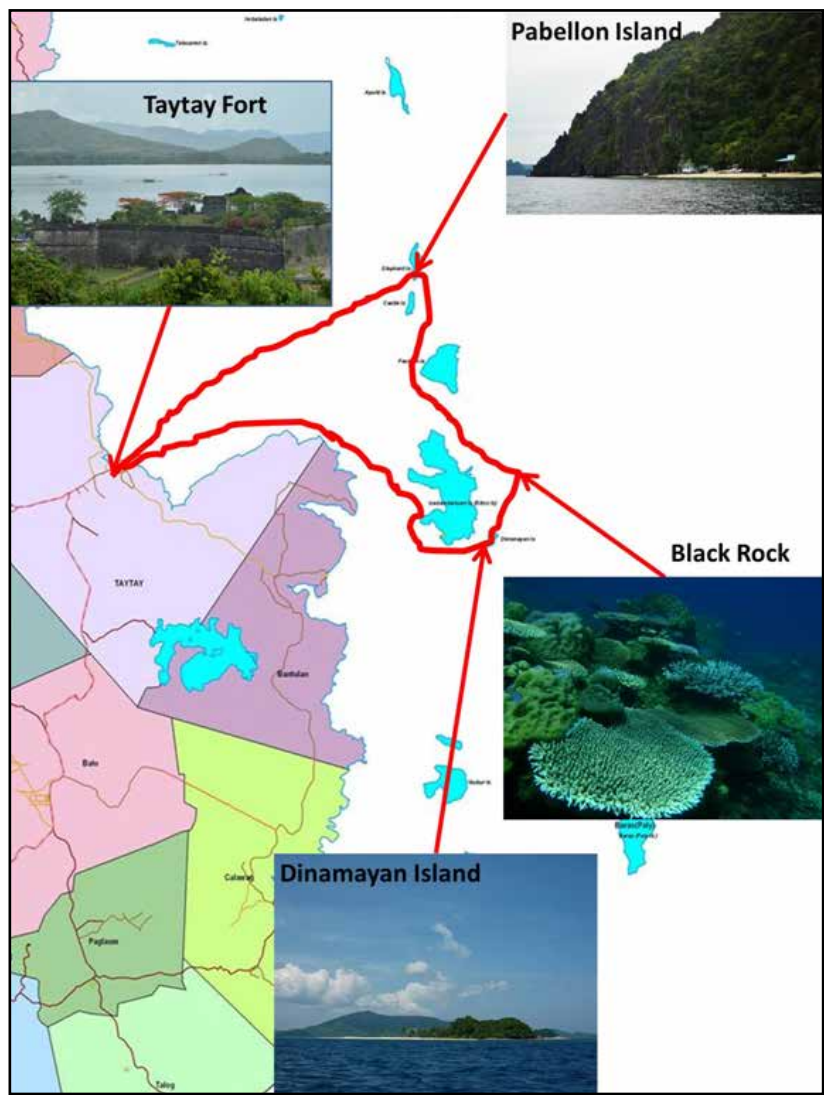
Box 5: Potential M&E parameters

1. Sustainability and availability of the ES
2. Benefits derived from the ES
3. Ability of the supplier to sustain the supply of the ES
4. Timeliness of the delivery of ES
5. Satisfaction of ES users/buyers
6. Cost involved in the delivery of ES
7. Problems that confront the delivery and receipt of the ES
8. Recommended solutions by the parties involved.

- 6. Expand the CGCG to Malampaya Sound.** The interest of the CENRO-Taytay to expand the CGCGs to Malampaya Sound should be pursued. This may not be strictly considered as an “expansion” of the CGCG-PES project, but rather as DENR adopting the existing scheme in its own area of jurisdiction. Establishing CGCGs in a different area (outside Taytay Bay) with a different set of project implementers and ES players presents interesting prospects. Such a move should benefit several groups involved: (i) tourists who would have more CGCG sites to choose from; (ii) local people who have new potential sources of livelihood; (iii) local governments which will have new or additional revenue sources; and (iv) project implementers (of the PES projects in Taytay Bay and Malampaya Sound), who will have an opportunity for cross-learning. Most importantly, scaling up the CGCG initiative will greatly benefit the ecosystems in both areas and eventually redound to the well-being of the people of Taytay.

Annexes

Annex 1. Pabellon Island, Black Rock, and Dinamayan Tour Package



Source: Matillano 2014.

Annex 2. Sample Copy of “Coral Reef Hero” Certificate



Annex 3. Memorandum of Understanding for the Taytay CGCG-PES Project

MEMORANDUM OF UNDERSTANDING

KNOW ALL MEN BY THESE PRESENTS:

This Memorandum of Understanding (**MOU**) is made and entered into by and among the following parties:

MUNICIPAL GOVERNMENT OF TAYTAY, a duly constituted Local Government Unit (LGU) existing under and by virtue of the laws of the Philippines, with office address located at Barangay Poblacion, Taytay, Palawan, hereinafter referred to as “**TAYTAY-LGU**”, represented herein by its Mayor, **Hon.Romy L. Salvame**;

TAYTAY TOURISM COUNCIL, a duly constituted organization existing under and by virtue of the laws of the Philippines, with office address located at Barangay Poblacion, Taytay, Palawan, hereinafter referred to as “**TTC**”, represented herein by its President, **Mr. Chan Lee de Luna**;

PINAGSAMANG LAKAS NG SAMAHANG MANGINGISDA NG TAYTAY, PALAWAN, INC., a duly registered organization of local fisherfolk of Taytay, with office address at Barangay Poblacion, Taytay, Palawan, hereinafter referred to as “**PILAK-SAMA**”, represented herein by its President, **Mr.Nerio P. Samaniego**;

FLORAL TALACANEN ISLAND RESORT, a duly registered private resort, with address located at Barangay Canique, Taytay, Palawan, hereinafter referred to as “**FTIR**”, represented herein by its attorney-in-fact, **Mrs.Flora M. Fankhauser**;

- and -

PACIFIC RIM INNOVATION AND MANAGEMENT EXPONENTS, INC., a management consulting firm, with office address at 502 Manila Luxury Condominium, Pearl Drive, Ortigas Center, Pasig City, Metro Manila, Philippines, hereinafter referred to as **PRIMEX**, represented herein by its President and Chief Executive Officer, **Ms.Elvira C. Ablaza**.

WITNESSETH THAT:

WHEREAS, Taytay has been identified as an emerging tourist destination in the western and northeastern part of the province of Palawan because of its existing and potential tourism attractions, particularly in the wildlife and inland tour sectors, as well as in agriculture and aquaculture community-based tourism;

WHEREAS, Taytay is endowed with rich marine resources, particularly islands and coral reef areas, which are ideal for SCUBA diving and snorkeling, including boating, kayaking, parasailing, and fishing. However, these resources are now under threat due to unabated illegal and destructive fishing activities;

WHEREAS, the LGU of Taytay has identified tourism as one of the development strategies to propel economic growth in the municipality;

WHEREAS, the Asian Development Bank (ADB) Regional Technical Assistance for Coastal and Marine Resources Management in the Coral Triangle – Southeast Asia (TA 7813-REG or RETA 7813) is now being implemented by **PRIMEX** in Taytay and one of its component activities is the pilot-testing of payment for ecosystem services (PES) in Taytay Bay;

WHEREAS, PES is perceived as an innovative tool for providing the twin benefits of environmental protection and generating sustainable financing for the local government and a steady source of income for its stakeholders;

WHEREAS, based on underwater assessments and a multisectoral PES benchmarking workshop in 2015, the establishment of Coral and Giant Clam Gardens (CGCGs) in selected islands has been identified as a feasible PES scheme that will not only highlight Taytay Bay's rich biodiversity but also the LGU's marine conservation advocacies, not to mention the income it will generate for the local stakeholders;

WHEREAS, the development of CGCGs is now ongoing as a tourism (ecosystem service) attraction in Taytay Bay;

WHEREAS, to ensure the successful implementation of CGCGs, there is a need for strong and concerted efforts and support of key stakeholders like the LGU, organized fisherfolk, private resort owners, academe, and other concerned support groups and institutions;

WHEREAS, local fisherfolk organizations have been working closely with the CGCG project and that their main purpose is to provide livelihood opportunities to its members, including helping in protecting and conserving Taytay Bay.

NOW, THEREFORE, for and in consideration of the foregoing premises and of the terms hereinafter provided, the parties hereby agree to execute this **Memorandum of Understanding (MOU)** under the following terms and conditions:

I. ROLES AND RESPONSIBILITIES

The parties hereby agree to undertake the following responsibilities:

A. The **Taytay LGU** shall:

1. Initially pass legislation on the: (i) establishment of a network of islands in Taytay Bay as Tourism Zone *cum* Marine Protected Area, specifically covering the islands of Talacanan, Denot, Quimbaludan, and Tepas Reef, and creating its management board; and (b) creation of the **Taytay Tourism Fund for Environmental Conservation (TTFEC)** to provide sustainable financing for the protection and maintenance of marine resources in Taytay Bay;

2. Pass other pieces of legislation (e.g., municipal ordinance, *Sangguniang Bayan* resolutions, and the like) to support the CGCGs and other undertakings on marine protection and conservation;
3. Be primarily responsible for the maintenance and protection of established CGCGs and other identified coral restoration areas by providing necessary funds, human resources, and logistical support;
4. Provide appropriate office space that will serve as tourism reception area, orientation center, and depository area for SCUBA diving gears and other equipment that maybe acquired in the future;
5. In coordination with private resort owners, the academe, and other relevant institutions, capacitate local fisherfolk on CGCGs and other marine protection and conservation strategies;
6. Maintain the website that will be created for promotion of CGCGs and Taytay tourism and dissemination of relevant materials and publications;
7. Endeavor to acquire additional SCUBA diving gears to augment the initial five (5) sets provided by RETA7813;
8. Assume full responsibility of the CGCGs upon the completion of RETA 7813 until such time that a permanent body is formed and organized for their management;
9. Until the establishment of an appropriate body, initially receive and manage all incomes and revenues, including donations, that will be generated by the CGCGs;
10. Pay accredited local fisherfolk who will provide services as local tour guides in the operation of the CGCGs according to an agreed payment/ fee system; and
11. Be primarily responsible for performing functions necessary to ensure the successful development, maintenance, and operation of the CGCGs.

B. The **Taytay Tourism Council** shall:

1. Coordinate with relevant organizations and institutions in promoting and marketing the CGCG tour experience and other tourism activities in Taytay;
2. Help maintain the website that will be created for the CGCGs and help produce tourism promotional materials and publications;
3. Act as the main coordinating body to facilitate tourism development, including the CGCG tour experience, in Taytay;

4. Advise the Taytay Tourism Office on matters relating to tourism development, policy requirements, structures and facilities, standards, coordination and networking, and promotion and marketing;
5. Assist in the capacitation of local fisherfolk and other stakeholders on tourism development and management;
6. Assist in the establishment of the TTFEC; and
7. Perform other functions and responsibilities necessary to ensure the successful development, maintenance, and operation of the CGCGs.

C. PILAKSAMA shall:

1. Assist in the overall maintenance and protection of established CGCGs, especially in regular cleaning of CGCG areas and replacing dead coral and giant clams, and in the expansion of CGCGs in other identified coral and giant clam restoration areas in Taytay Bay;
2. Under the direction and supervision of concerned Taytay-LGU officials and in coordination with partner Western Philippine University technical staff, collect coral fragments and giant clams and plant/deposit them in designated fostering areas;
3. Guide visitors and tourists who will avail of CGCG tour packages, specifically in planting coral fragments and transporting giant clams, and in other tourism activities;
4. Ensure the safety of tourists and visitors during their CGCG tour;
5. Assist in the proper maintenance (cleaning, regular checking, etc.) of the SCUBA diving gear and other diving equipment and paraphernalia;
6. Contribute to the establishment of the TTFEC;
7. Endeavor to acquire SCUBA diving gears to augment the initial five (5) sets provided by RETA 7813; and
8. Perform other functions and responsibilities that may be necessary to ensure the successful development, maintenance, and operations of the CGCGs.

D. The Floral Talacanan Island Resort (FTIR) shall:

1. With the assistance of the LGU, other authorities, and local fisherfolk, expand the coral domes established in Talacanan Island and in neighboring coral reef areas;
2. Assist in the maintenance and protection of established CGCGs and other tourism-related attractions;
3. Assist in promoting and marketing the CGCG tour experience and other tourism activities in Taytay;

4. Help invite/encourage other private resort owners to participate in the development and expansion of CGCGs and other tourism activities;
5. Tap trained, licensed, and accredited local fisherfolk as tour guides during the CGCG tours in their area of jurisdiction and pay them according to an agreed payment/fee scheme;
6. Allow tourists and visitors of the Taytay LGU to dive and snorkel in FTIR area of jurisdiction, provided proper coordination and arrangements are made with FTIR management;
7. Endeavor to acquire SCUBA diving gears to augment the initial five (5) sets provided by RETA 7813;
8. Contribute to the establishment of TT FEC; and
9. Perform other functions and responsibilities necessary to ensure the successful development, maintenance, and operations of the CGCGs.

E. During the implementation period of RETA 7813, **PRIMEX** shall:

1. Serve as the main coordinating body in the development of the CGCGs;
2. Provide necessary technical and financial assistance in the establishment of CGCGs through RETA 7813, including the provision of five (5) complete sets of dive equipment and a portable compressor which has been fulfilled;
3. Capacitate local stakeholders in managing CGCGs by providing necessary trainings on open water SCUBA diving for seven (7) LGU and fisherfolk participants, underwater tour guiding, organic farming, monitoring, maintenance and protection of CGCGs, and other trainings that may be deemed necessary in the course of RETA 7813 project implementation;
4. Assist in the promotion and marketing of the CGCG tour experience by: (i) creating a dedicated website for the purpose; (ii) coordinating with other concerned institutions like the Department of Tourism (DOT), provincial tourism office, and local travel and tour operators; and (iii) initially design CGCG brochures, posters, and other promotional materials;
5. Establish and recommend the fee system for the CGCG tour experience, including profit sharing scheme among stakeholders;
6. Lay the foundation for the establishment of the TT FEC;
7. Turn over the management of the CGCGs to the appropriate Taytay-LGU office upon completion of RETA 7813;
8. Perform other functions and responsibilities necessary to ensure the successful development, maintenance, and operation of the CGCGs.

II. AMENDMENTS AND DURATION

This MOU shall take effect immediately upon signing and shall continue to be in force unless terminated or amended by all of the parties in a separate written agreement. Any party may terminate its responsibilities by giving all of the other parties a written notice of at least thirty (30) days prior to the intended date of termination.

Any provision of this MOU may be amended only with the written consent of all of parties herein concerned.

IN WITNESS WHEREOF, the parties have signed these presents on this 3rd day of May 2017 in Taytay, Palawan.

HON. ROMY L. SALVAME
Mayor, Taytay

CHAN LEE DE LUNA
President, Taytay Tourism Council

NERIO P. SAMANIEGO
President, PILAK-SAMA

FLORAM. FANKHAUSER
Attorney-in-Fact,
Floral Talacanen Island Resort

ELVIRA C. ABLAZA
President and Chief Executive Officer, PRIMEX

SIGNED IN THE PRESENCE OF:

_____	_____
_____	_____
_____	_____

ACKNOWLEDGEMENT

REPUBLIC OF THE PHILIPPINES)

) s.s.

BEFORE ME, aNotary Public for and in _____,
personally appeared:

NAME
DATE/PLACE OF ISSUE
ROMY L. SALVAME
CHAN LEE DE LUNA
NERIO P. SAMANIEGO
FLORA M. FANKHAUSER
ELVIRA C. ABLAZA

CTC. NO.

Known to and to me known to be the same persons who executed the foregoing instrument and they acknowledged to me that the same is their free and voluntary act and deed as well as that of the entities they respectfully represent.

This instrument refers to a Memorandum of Understanding between and among _____ and _____ as the _____ in _____. Consisting of six (6) pages, including the pages whereon the acknowledgement is written and is signed by the parties, and by two instrumental witnesses.

WITNESS MY HAND AND SEAL on the date and place first written above.

Doc. No. _____
Page No. _____
Book No. _____
Series of _____

Annex 4. Sample Interview Schedule
for the Willingness-to Pay Study

TOURIST SET 1

Annex D. Sample Interview Schedule
Willingness-to-pay study (Tourist visitors)

Interviewer: _____ Date of Interview: _____
Time of Interview: _____ [] AM [] PM
Name of Respondent: _____
Address: _____

A. Socio-demographic characteristics

QUESTION	RESPONSE CODE
Q1: Actual age	
Q2: Gender	1- Male 2- Female
Q3: Highest educational attainment	1- No Formal Education 2- Elementary 3- High School 4- College 5- Vocational / Technical 6- Postgraduate
Q4: Marital status	1- Single 2- Married 3- Widow/widower 4- Separated 5- Divorced 6- Live in
Q5: Household size (incl the respondent and other members if extended family, living under one roof)?	
Q6: Source(s) of income of the household	() Farming/Fishery/Forestry () Skilled labor () Salary and wages () Small business () Pension/ Remittance () Others , please specify _____
Q7: Monthly income of the household	Php (in Philippine Peso)
Q8: Nationality of the respondent	1- Local 2- Foreigner
Q9: If LOCAL: Place of origin (province/city)	
Q10: If FOREIGNER: What is nationality of the respondent?	1- South Korean 2- Japanese 3- American 4- Australian 5- German 6- British 7- Russian 8- Chinese 9- Others please specify

B. Tourism Related Information

Q11. Manner of visit	<i>1-Alone 2-Group</i>
Q12. If in <i>GROUP</i>, total number of companion	
Q13. Mode of transportation in going to Taytay	<i>1-Private car 2-hired van 3-bus 4-taxi 5-motorcycle/motorbike 6-others, pls specify _____</i>
Q14. No. of recreational trips in a year	<i>Local</i>
	<i>Foreign</i>
Q15. Average total expenses on recreational trips in a year	<i>Php</i>
Q16. Visit/ trip arrangement	<i>1-Personal 2-Travel tour package 3-others, pls. specify _____</i>
Q17. How did you know about Taytay, Palawan?	<i>[] Radio [] Television [] Newspaper [] Magazine [] Travel brochure [] Internet [] Tour operator [] Word of mouth [] Others, pls. specify _____</i>
Q18. Reason for visit	<i>[] Pleasure [] Relaxation/Rejuvenate [] Business [] Attraction/ Appreciation of Scenery [] Inspiration/Self-development [] Curiosity about nature/Adventure [] Education [] Family Time [] Others, pls. specify _____</i>
Q19. Is this your first time to visit Taytay, Palawan?	<i>1-Yes 0-No</i>
Q20. If NOT, how many times have you been to Taytay, Palawan	
Q21. Are you accustomed to paying fees for use of facilities and activities in other sites you've visited?	<i>1-Yes 0-No</i>
Q22. How do you find the fees being collected in Taytay, Palawan?	<i>1-expensive 2-fair and compensating 3-cheap</i>

<i>Please check your opinion on the following statements</i>	strongly disagree	disagree	no opinion	agree	strongly agree
Q23. Corals and “taklobo” giant clams are important attractions for tourism development in Taytay.					
Q24. It is quite difficult to reach Taytay because of limited public transport system.					
Q25. Taytay, Palawan is a secured place to visit.					
Q26. Even without corals and “taklobo” giant clams gardens tourism will flourish in Taytay.					
Q27. Taytay, Palawan is an accessible place to visit.					
Q28. It is not safe to stay in Taytay					
Q29. Taytay, Palawan has a well-developed infrastructural facilities for accommodating tourists.					
Q30. There are no places to stay in Taytay, Palawan.					

Code for Q23,Q25,Q27,Q29: 1- strongly disagree 2-disagree 3-no opinion 4-agree 5-strongly agree
Code for Q24,Q26,Q28,Q30: 5- strongly disagree 4-disagree 3-no opinion 2-agree 1-strongly agree

C. Willingness to Pay

Q31. Are you willing to pay an amount of (Php50) for the entrance fee of Fort Sta. Isabel?	1-Yes 0-No
Q32. If YES, why?	() amount is fair and compensating () fees collected can help preserve Fort Isabel () fees can help improve existing facilities () others, pls. specify _____
Q33. If YES, how much is the maximum amount you are willing to pay for the entrance fee of Fort Sta. Isabel?	Php
Q34. If NO, why are you not willing to pay?	() too expensive () existing fee is adequate () others, pls. specify _____
Q35. If NO, how much would you like to pay?	Php
Q36. Are you willing to pay an amount of (Php20) for the parking fee in the vicinity of Fort Sta. Isabel and nearby pier?	1-Yes 0-No
Q37. If YES, why?	() amount is fair and compensating () fees collected can help preserve Fort Isabel () fees can help improve existing facilities () others, pls. specify _____
Q38. If YES, how much is the maximum amount you are willing to pay for the parking fee in the vicinity of Fort Sta. Isabel and nearby pier?	Php
Q39. If NO, why are you not willing to pay?	() too expensive () existing fee is adequate () others, pls. specify _____
Q40. If NO, how much would you like to pay?	Php

Q41. Are you willing to pay an amount of (Php70) for the entrance fee for Lake Manguao?	1-Yes 0-No
Q42. If YES, why?	() amount is fair and compensating () fees collected can help preserve Lake Manguao () fees can help improve existing facilities () others, pls. specify _____
Q43. If YES, how much is the maximum amount you are willing to pay for the entrance fee for the entrance fee for Lake Manguao?	Php
Q44. If NO, why are you not willing to pay?	() too expensive () existing fee is adequate () others, pls. specify _____
Q45. If NO, how much would you like to pay?	Php
Q46. Are you willing to pay an amount of (Php10) for the parking fee in Lake Manguao?	1-Yes 0-No
Q47. If YES, why?	() amount is fair and compensating () fees collected can help preserve Lake Manguao () fees can help improve existing facilities () others, pls. specify _____
Q48. If YES, how much is the maximum amount you are willing to pay for the parking fee in Lake Manguao?	Php
Q49. If NO, why are you not willing to pay?	() too expensive () existing fee is adequate () others, pls. specify _____
Q50. If NO, how much would you like to pay?	Php
Q51. Are you willing to pay an amount of (Php1,000) for the experience in Coral Gardening and be named as coral hero?	1-Yes 0-No

<p>Q52. If YES, why?</p>	<p>() new and exciting; have not tried this yet () want to help in conserving the marine resources in Taytay () want to contribute to the economy of Taytay () want to provide income to local fishermen who are acting as guides () want private resort owners to also benefit and help in conservation () Others, pls. specify_____</p>
<p>Q53. If YES, how much is the maximum amount you are willing to pay for the Coral Gardening (CG)?</p>	<p>Php</p>
<p>Q54. If NO, why are you not willing to pay?</p>	<p>() too expensive () existing fee is adequate () Others, pls. specify_____</p>
<p>Q55. If NO, how much would you like to pay?</p>	<p>Php</p>
<p>Q56. Are you willing to pay an amount of (Php2,000) for the experience in Giant Clam Gardening (GCG) and be named as giant clam hero?</p>	<p>1-Yes 0-No</p>
<p>Q57. If YES, why?</p>	<p>() new and exciting; have not tried this yet () want to help in conserving the marine resources in Taytay () want to contribute to the economy of Taytay () want to provide income to local fishermen who are acting as guides () want private resort owners to also benefit and help in conservation () Others, pls. specify_____</p>
<p>Q58. If YES, how much is the maximum amount you are willing to pay for the experience in Giant Clam Gardening (GCG)?</p>	<p>Php</p>
<p>Q59. If NO, why are you not willing to pay?</p>	<p>() too expensive () existing fee is adequate () Others, pls. specify_____</p>

Q60. If NO, how much would you like to pay?	Php
Q61. How do you find your overall experience in Taytay, Palawan?	1- Very satisfied 2-Satisfied 3-Unsure 4-Dissatisfied 5-Very dissatisfied

THANK YOU!

Statement of Confidentiality

This survey is being conducted to establish the willingness-to-pay of the tourists in Taytay, Palawan for its different tourist activities. The information collected in this survey will be strictly confidential.

**Annex 5. Addendum to the MOU on the Implementation
of the CGCG-PES Project**

**ADDENDUM to the MEMORANDUM OF UNDERSTANDING
ON THE IMPLEMENTATION OF CORAL AND GIANT CLAM GARDENING**

between and among

the Municipal Government of Taytay, Palawan,

Taytay Tourism Council,

**PinagsamangLakas ng SamahangMangingisdang Taytay, Palawan
(PILAKSAMA),**

Floral Talacanen Island Resort,

and

Pacific Rim Innovation and Management Exponents, Inc. (PRIMEX)

(hereinafter referred to as “the Parties”)

WHEREAS, the Memorandum of Understanding on the implementation of Coral and Giant Clam Gardening (CGCG), a component of the Asian Development Bank (ADB) Regional Technical Assistance for Coastal and Marine Resources Management in the Coral Triangle – Southeast Asia (RETA 7813), was entered into between and among the aboveparties on4 May 2017;

WHEREAS, the participation and support of more stakeholders like the organized fisherfolk, private resort owners, and other concerned support groups and institutionsare necessaryto ensure the successful implementation of CGCG;

WHEREAS, the Sulubaaï Environment Foundation (SEF), a 6-year old Taytay-based non-profit organization dedicated to conserve, protect, and restore the natural resources of Palawan, has expressed interest to participate in the implementation of CGCG;

WHEREAS, SEF’s goal is to develop and implement sustainable operations able to benefit local people and environment in complete financial autonomy by generating funds from ecotourism;

WHEREAS, as early as March 2016, SEF has already engaged in the rehabilitationand protection of a Marine Protected Area (MPA) surrounding Pangatalan island through coral planting using the concrete-structured Sulu-Reef Prosthesis (SRP),

NOW, THEREFORE, for and in consideration of the foregoing premises and of the terms hereinafter provided, the parties have agreed to the following amendments to the **Memorandum of Understanding**:

A. ADDITIONAL PARTY TO THE MOU

The parties hereby agree to include the **Sulubaaï Environment Foundation** as additional party to the MOU, and shall be described as:

SULUBAAÏ ENVIRONMENT FOUNDATION, a duly registered non-profit organization, with address located at Barangay Depla, Taytay, Palawan, hereinafter referred to as “**SEF**”, represented herein by its President, **Mr. Frederic Tardieu**;

B. ROLES AND RESPONSIBILITIES

The **Sulubaaï Environment Foundation (SEF)** shall perform the following roles and responsibilities:

1. With the assistance of the LGU, other authorities, and local fisherfolk, expand the SRP-rehabilitated coral reefs established in Pangatalan Island and in neighboring reef areas, and also establish CGCGs in the surrounding island;
2. Assist in the maintenance and protection of established CGCGs and other tourism-related attractions;
3. Assist in promoting and marketing the CGCG tour experience and other tourism activities in Taytay;
4. Help invite/encourage other private resort owners to participate in the development and expansion of CGCGs and other tourism activities;
5. Tap trained, licensed, and accredited local fisherfolk as tour guides during the CGCG tours in their area of jurisdiction and pay them according to an agreed payment/fee scheme;
6. Allow tourists and visitors of the Taytay LGU to dive and snorkel in SEF area of jurisdiction, provided proper coordination and arrangements are made with SEF management;
7. Endeavor to acquire SCUBA diving gears to augment the initial five (5) sets provided by RETA 7813;
8. Contribute to the establishment of Taytay Trust Fund for Environmental Conservation (TTFEC); and
9. Perform other functions and responsibilities necessary to ensure the successful development, maintenance, and operations of the CGCGs

C. EFFECTIVITY

This Addendum shall enter into force upon signature by all the parties concerned. All other provisions of the mother MOU consistent herewith shall remain effective and in force.

IN WITNESS WHEREOF, the parties have signed these presents on this _____ 2017 in Taytay, Palawan.

HON. ROMY L. SALVAME
Mayor, Taytay

CHAN LEE DE LUNA
President, Taytay Tourism Council

NERIO P. SAMANIEGO
President, PILAK-SAMA

FLORA M. FANKHAUSER
Attorney-in-Fact,
Floral Talacanen Island Resort

FREDERIC TARDIEU
President,
Sulubaaï Environment
Foundation

ELVIRA C. ABLAZA
President and Chief Executive Officer,
PRIMEX

SIGNED IN THE PRESENCE OF:

ACKNOWLEDGEMENT

REPUBLIC OF THE PHILIPPINES)
) s.s.

BEFORE ME, a Notary Public for and in _____,
personally appeared:

NAME	CTC. NO.
DATE/PLACE OF ISSUE	
ROMY L. SALVAME	
CHAN LEE DE LUNA	
NERIO P. SAMANIEGO	
FLORA M. FANKHAUSER	
ELVIRA C. ABLAZA	
FREDERIC TARDIEU	

Known to and to me known to be the same persons who executed the foregoing instrument and they acknowledged to me that the same is their free and voluntary act and deed as well as that of the entities they respectfully represent.

This instrument refers to a Memorandum of Understanding between and among _____ and _____ as the _____ in _____. Consisting of four (4) pages, including the pages whereon the acknowledgement is written and is signed by the parties, and by two instrumental witnesses.

WITNESS MY HAND AND SEAL on the date and place first written above.

Doc. No.	_____
Page No.	_____
Book No.	_____
Series of	_____

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