Chapter 2
Economic Valuation of the Philippine's Caramoan Beachscape

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Abstract This study determined the tourists' willingness to pay (WTP) for the conservation of Caramoan beachscape in Camarines Sur, Philippines, as inputs in establishing the appropriate payment for environmental services for the sustainable development of ecotourism and coastal resource management of the area. The study employed the contingent valuation method (CVM) using four analytical models.

Based on the results, majority of the Caramoan tourists are younger, adventurous, without familial obligations, and highly educated and earn a relatively high income. One half of the visitors are willing to pay to promote the sustainability of the beachscapes. The visitors' WTP in the general model was estimated to be PHP 897. The average monthly visitors were estimated to be 1,000 tourists per month. Using these data, the total economic value of conserving the beachscapes in Caramoan was estimated to be PHP 10.76 million annually. Bid amount, age, and income were the only factors that consistently correlated with WTP in all of the analytical models. This indicates that younger visitors and those who have higher income are more likely to be willing to pay for conservation.

The estimated economic value of conserving the Caramoan beachscape justifies the relevance of investing public funds to pursue sustainable beachscape ecotourism development in Caramoan. This study is an attempt to contextualize PES for beachscape. It highlighted the priority concerns for sustainable source of fund for conservation and harmonized institutional arrangements for beachscape tourism and coastal resource management. It supported the potential of implementing PES within a community-based coastal resource management framework under a marine fishery reserve-sanctuary setting comanaged by the community and the Caramoan LGU or within a natural protected area framework managed by the Caramoan Natural Park Protected Area Management Board.

Keywords Beachscape valuation • Coastal resource management • Payment for environmental services • Caramoan

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2.1 Introduction

The beachscapes of Caramoan are part of the Lagonoy Gulf coast, the largest fishing ground in the Philippines' Bicol Region. Like other coastal municipalities along the gulf, the municipality of Caramoan shares in the problems common to the gulf's coastal resource utilization and governance, such as overfishing, degraded coastal habitat due to illegal fishing, and weak enforcement of fishery laws (Pelea et al. 2005). The establishment of marine protected areas (MPAs)—used interchangeably with Marine Fishery Reserve-Sanctuary (MFRS)—as a tool for management has been seen to address some of these problems through comanagement with fisher folk and the local government units (LGUs) or municipal governments. As a community-based coastal resource management tool, the MFRS consists of a core no-take zone called a "sanctuary" and a buffer zone called a "reserve" where fishing using sustainable gear is allowed. Many of these MPAs and coastal resource management (CRM) activities in Lagonoy Gulf are financed from the LGUs' general fund and compete with various public service and investment priorities. The lack of sustainable funding and the dependency of CRM-oriented projects on the usually deficient LGU coffers have typically been credited for the failures of these conservation initiatives.

Several studies have recommended the development of non-extractive resource utilization in the Lagonoy Gulf area, such as ecotourism, as an alternative option to generate income for fisher folk and to fund conservation of the coastal resources (Pelea et al. 2005), but its potential has yet to be tapped by most LGUs.

According to Rosales (2003), the lack of proper economic valuation is one of the weaknesses in the management of coastal resources. If corrected, it could encourage more investment and better management and conservation because comprehensive economic valuation involves identifying the various types of resources used and attaching monetary values to each. Rosales (2003) further stressed that recreation—while highly undervalued—has been identified as one of the more important uses of beaches, particularly those located in MPAs.

Conservation fees (CFs), or user or entrance fees, offer a potential source of funds. CFs are charged for access to areas that offer natural attractions (e.g., beaches, dive sites, lakes, caves, and forests). CF schemes are based either on user-pay or cost-recovery principles (Padilla et al. 2005a).

The parameters of LGU collection of user fees from the recreational use of beachscapes are found in the Local Government Code of 1991. The code gives LGUs the power to generate and mobilize revenue through taxes, fees, or charges to enable efficient and effective governance. Moreover, the Philippine Fisheries Code of 1998 bestows upon the LGUs the primary mandate to manage municipal waters in the coastal zone that are not covered by the NIPAS Act,[1] specifically municipal waters that extend to a distance of up to 15 km from the shoreline. The NIPAS Act

[1] Republic Act 7586, otherwise known as the National Integrated Protected Areas System (NIPAS) Act, provides for the establishment and management of protected areas in the Philippines.

and Forestry Code[2] are other significant laws that provide for fee collection from the users of environmental goods and services.

The use of economic valuation in computing the fees is mandated in DENR Administrative Order (DAO) 2000–2051, *Guidelines and principles in determining fees for access to and sustainable use of resources in protected areas*. In setting fees, the guidelines adopt the willingness-to-pay (WTP) principle, in which fees are determined from "WTP estimates of the visitors based on appropriate surveys (Sect. 8.1.2)," and the cost-recovery principle, in that "collected revenues shall cover, as much as possible, a reasonable proportion of all costs incurred in protecting, maintaining and enhancing the natural attractions of the protected area (Sect. 8.1.1)."

The Caramoan LGU is fortunate to have been gifted with white sand beaches, limestone rock formations, islands, and bays. Four years ago, Caramoan was unknown in tourism communities. In 2008, the *Philippine Daily Inquirer* reported that the area had generated local and international media attention when the international series of the hit reality show "Survivor" was alternately filmed in the area by French, Israel, and Bulgarian television from 2008 to 2012; since then, local and foreign travelers have started to explore its beachscapes. In 2010, the Caramoan local tourism office recorded an average of 1,000 visitors per month. This development also showcased the potential of non-extractive resource use e.g., coastal ecotourism as a viable option in providing livelihood and in generating conservation fees for promoting sustainable tourism and CRM in Caramoan.

The recent shift in resource-use patterns in the coastal area—from mainly fishing to recreation tourism—has spawned resource-use conflict and displacement of some sectors that traditionally benefitted from the resource as a fishing ground. In addition, the open access nature of the Caramoan beaches, as in most common pool resources, will likely lead to the degradation of the coastal tourism assets in the long run if not properly managed. These developing issues underscore the need to estimate WTP values to establish a payment for environment services (PES) scheme, through means such as user fees, for conserving the Caramoan beachscapes. Revenue could fund CRM efforts, thereby ensuring the sustainable livelihood of stakeholders who may be disproportionately impacted by the shift in resource-use pattern in Caramoan. This study estimates for the conservation of Caramoan beachscape in Camarines Sur, Philippines, as input for establishing a PES system for sustainable ecotourism and coastal resource management in the area.

[2] Republic Act 7161, or the Revised Forestry Code of the Philippines, indicates forest charges on timber and other forest products.

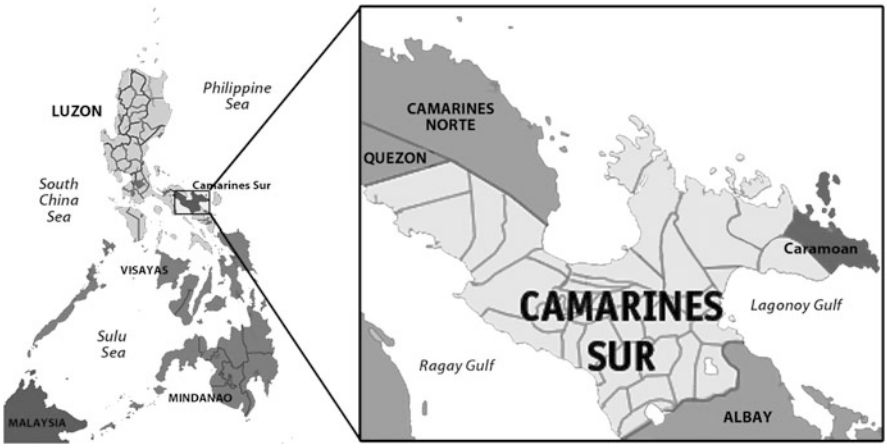

Fig. 2.1 Location of the study area in the Philippines

2.2 The Site

The small town of Caramoan is located at the tip of the Caramoan Peninsula, a rugged stretch of land extending into the waters of the Maqueda Channel on the north and east and Lagonoy Gulf on the south (Fig. 2.1). It covers approximately 27,741 km^2 with approximately 71 km of irregular coastline surrounded by the vast ocean, bay, seas, and swamps.

The municipality is home to 34.7 km^2 Caramoan National Park, declared via Proclamation No. 291 on 20 July 1938, and is currently a natural protected area. It is a hilly peninsula, with deep gorges and a rough, rocky terrain. The forests are mainly lowland in type. Habitats in Caramoan National Park include mangrove forests, sand dunes, and beaches. The natural features of this park include caves, limestone formations, white sandy beaches, a lake let, and a subterranean river. Its marine ecosystem is part of the Ticao-San Bernardino Strait-Lagonoy Gulf MPA whose marine waters are adjacent to Maqueda Bay, the mouth of the Lagonoy Gulf. This protected natural marine area ranks extremely high in terms of conservation priority.

2.3 Research Methods

2.3.1 Activities

The contingent valuation method was used in this study; several activities were done to achieve the objectives. First, exploratory visits and key informant interviews were conducted to gather information on the status of tourism management in

the area as well as to seek affirmation from the municipal government officials. Second, a survey was prepared and pretested. The information collected included respondent perceptions on national and local governance of the coastal environment, attitudes toward conservation, willingness to pay (WTP) for conservation of the beachscapes, and socioeconomic status. The enumerators were trained through classroom lectures and hands-on experience in conducting the survey in the field. The questionnaire was pretested on 50 respondents using preliminary bid amounts of PHP100, PHP250, PHP500 (11.9USD), PHP750 (17.85USD), and PHP1,000 (23.80USD).

The questionnaire was finalized based on insights generated from the pretest. The WTP scenario was revised and a separate brochure was developed. The brochure contained concise information on the status of the beachscapes and coastal area, the threats to the beachscapes, a description of the worst-case scenario, current conservation initiatives implemented by the LGU to prevent the worst-case scenario from happening, and the hypothetical fee collection mechanism. In the bid elicitation part, final bid amounts of PHP100 (23.8 USD), PHP450 (10.71 USD), PHP950 (22.61 USD), PHP1,250 (29.76 USD), and PHP1,800 (42.85 USD) were adopted. Finally, the survey was conducted using the finalized questionnaire and WTP scenario brochure.

Two intercept strategies were adopted to engage with participants, namely, survey drop-off and face-to-face interviews. In the drop-off intercept strategy, the enumerators left the questionnaire and the WTP scenario brochure with the respondents after having explained them. On occasions when respondents requested more time to carefully answer the questionnaire, they arranged to have the completed questionnaires picked up the next day. The respondents in the study were local tourists who had stayed for at least 1 day in Caramoan and were employed. Sample respondents were randomly assigned bid amounts. A total of 1,000 tourists were interviewed between January and April 2010, representing the late (and lean) and the pre-peak tourist seasons; there was a 100 % return rate.

2.3.2 Scenario Design

The scenario was conveyed to the respondents by way of a colorful brochure showing the beachscapes of Caramoan, the current status of its attributes, and the projected changes to these attributes if ecotourism were left unmanaged. The brochure read as follows:

> The beachscape beauty of Caramoan is unique among the beaches of the Philippines because of the following features: high biodiversity of nearby Karst forest; fine white sand; beautiful beach sceneries; good coral cover teeming with diverse fishes; and private and secluded clear blue waters.
>
> However, these are threatened by: 1) excessive and unregulated fishing, 2) siltation from upland areas, 3) growing tourist population, and 4) domestic wastes.

In ten years, we believe that if these threats will not be addressed, Caramoan will suffer from a decline in biodiversity and reduced coral cover, filthy sands and degraded beach beauty, polluted waters, and crowded beaches.

The Caramoan Local Government has established Marine Fishery Reserve-Sanctuary areas, and is currently implementing solid waste management and an environmental awareness campaign.

To raise funds to implement other programs to protect and preserve the beauty of Caramoan beaches and its ecosystem, we are thinking of creating a sustainable source of revenue by establishing entrance fees. The fund will be managed by the Tourism Council and the Caramoan local government unit. The fund will go to coastal resource management, biodiversity conservation and fisher folk livelihood.

Considering the above information about the Caramoan beachscape beauty and ecosystem conservation and management fund to be set up, let us suppose that tourists will be asked to pay entrance fees /or environment services fees. The entrance fee will be collected by authorized personnel in a booth at Guijalo Port, the sole port of entry to Caramoan mainland.

2.3.3 Elicitation Format

The elicitation format chosen for this study was the dichotomous choice format, stated as follows:

Let me take you back to the time that you were thinking of going to Caramoan. Would you have come if you knew that there was a PHP__ entrance fee and that this fee were to be managed by the Caramoan local government unit and the Tourism Management Council and used solely for the purpose of protecting the beauty and ecosystems of Caramoan beachscapes? Please be reminded that there is no right or wrong answer to this question.

2.3.4 Data Analysis

The analysis adopted the mean WTP formula from Hanemann (1984 as cited in Calderon et al. 2005; Launio et al. 2011) whose utility model assumes that if there exists a representative consumer who has an indirect utility function V (P,M,Q,S), then the level of the consumer utility function depends on price (P), income (M), socio-characteristics (S), and quality (Q). When asked if he/she would pay to help protect the beachscape beauty in Caramoan at a given price (P), the respondent will say yes if:

$$V(M-P, Q^1, S) > V(M-0, Q^0, S) \tag{2.1}$$

Equation 2.1 shows that the respondent will answer yes if the utility derived from improved quality of the beachscape (Q^1) and paying the price (P) is higher than that derived from having no improvement in the beachscape quality (Q^0) and

not paying the price ($P = 0$). If V (P,M,Q,S) is the observable component of the utility, the probability of the respondent saying yes is

$$\text{Prob(yes)} = Prob[V(M-P, Q^1, S) + \varepsilon_1 > V(M-0, Q^0, S) + \varepsilon_0] \tag{2.2}$$

where ε_i is an unobservable component of the utility. Assuming that the random variable ε_i follows a logistic probability distribution, one can write:

$$Prob(yes) = \frac{1}{1 + e^{-\Delta V}} \tag{2.3}$$

where $-\Delta \text{V} = V(M-P, Q^1, S) > V(M-0, Q^0, S)$

The recreational benefit of the hypothetical market to conserve beachscape is measured as WTP and is defined as

$$V(M - WTP, Q^1, S) > V(M-0, Q^0) \tag{2.4}$$

Hanemann shows that if $V(M - P,Q,S)$ is linearly specified, then the probability of the respondent saying yes is

$$\text{Log}\left[\frac{Prob(yes)}{1 - Prob(yes)}\right] = \propto_0 - \beta_1 P + \beta_2 Q + \sum \beta_i S_i \tag{2.5}$$

Parameters α_0 and β_i will be estimated parametrically. The mean maximum WTP for the conservation of beachscape can be calculated using Eq. 2.6:

$$\text{Mean maximum WTP} = \frac{1}{\beta_1}\left[In\left(1 + e^{\alpha_0 + \beta_2 Q + \sum \beta_i S_i}\right)\right] \tag{2.6}$$

Equations 2.5 and 2.6 were estimated using the routine of STATA®.

2.4 Results and Analysis

2.4.1 Awareness of National Issues Related to Coastal Environment

Among the national issues related to coastal environment, water pollution, degradation of coastal habitats (i.e., coral reefs, sea grass beds, and mangroves), and the *decline of biodiversity* are the top three of which the respondents are most aware (Table 2.1). These issues are commonly attributable to institutional weakness and

Table 2.1 Respondent's ranking of their awareness of national issues related to coastal environment

National issues	Frequencies by rank			Weighted mean	Rank
	1	2	3		
Water pollution	413	187	151	1.651	1
Degradation of critical coastal habitats	144	217	152	2.016	2
Decline of biodiversity	49	43	62	2.084	3
Typhoon	18	9	35	2.274	4
Deforestation	37	98	105	2.283	5
Garbage disposal	37	297	203	2.309	6
Overcrowding of settlements in coastal areas	83	116	234	2.349	7
Coastal erosion	13	31	50	2.394	8

Table 2.2 Respondents' ranking of their awareness of local coastal environment and environment governance issues in Caramoan

Local environmental and governance issues	Frequencies by rank			Weighted rank	Rank
	1	2	3		
Littering on the beach	456	187	153	1.619	1
Blast fishing	56	56	56	2.000	2
Sand quarrying	54	77	58	2.021	3
Unplanned, uncontrolled proliferation of houses, resorts, and infrastructures	147	286	243	2.142	4
Compressor fishing	6	20	12	2.158	5
Siltation	7	9	12	2.179	6
Overcrowding of tourists	36	74	86	2.255	7
Unregulated overfishing	34	86	96	2.287	8
Cutting of mangrove trees and vegetation	70	99	168	2.291	9
Small-scale mining	14	46	49	2.321	10
Cyanide fishing	0	57	63	2.525	11

the increasing pressures on the environment and natural resource base from uncontrolled population growth in the coastal areas.

2.4.2 Awareness of Local Coastal Environment and Environment Governance Issues in Caramoan

Among the coastal and environmental governance issues in the study area, littering on the beach, blast fishing, and sand quarrying are the top three issues of which respondents are most aware (Table 2.2). This reflects the area's weak solid waste management, as well as the presence of unsustainable economic activities, which exert pressure on the area's resource base.

2.4.3 *Institutional and Management Issues Impacting Caramoan Beachscapes*

Among the institutional and management issues impacting Caramoan beachscapes, the respondents consider *sustainable source of fund for conservation*, *political issues,* and *harmonized institutional arrangement for beachscape tourism management* as the top three issues that will impact the long-term sustainability of Caramoan beachscapes (Table 2.3). These issues highlight the importance of determining the value of protecting the beachscapes to visitors as key sources of information to justify public investments in their management. The information would also be useful in determining the level of rent that could be captured from visitors, should the local government impose one.

A concern was also expressed on the complexity of managing the Caramoan beachscapes since it falls within the jurisdiction of two governing institutions, the local government and the protected area management board (PAMB), which is coordinated by the provincial government with the Department of Environment and Natural Resources (DENR). The park portion of the Caramoan beachscape is under the jurisdiction of PAMB, while the portion that falls outside of the park is under the control of the Caramoan Municipal Government, in accordance with the Local Government Code (LGC). The same code declares coastal waters within 15 km of the municipality as municipal waters and places the responsibility of managing these resources in the hands of the municipal government.

Table 2.3 Respondents' rankings of institutional and management issues impacting the ecological sustainability of the Caramoan beachscape

Issues	Frequencies by rank			Weighted rank	Rank
	1	2	3		
Sustainable source of fund for conservation and protection	254	102	1	1.696	1
Political issues	119	44	54	1.700	2
Harmonized institutional arrangement and mechanisms for beachscape tourism management	118	110	107	1.967	3
Enforcement of environment- and fisheries-related laws	97	164	94	1,992	4
Geographic and political jurisdictions between local and provincial governments	56	105	68	2.052	5
Comprehensive management plan for ecotourism and conservation of beachscape	163	194	192	2.053	6
Technical capability for management	78	62	102	2.099	7
Awareness of conservation	59	138	154	2.271	8
Institutional frameworks for ecosystem governance	42	77	107	2.288	9

Table 2.4 Respondents' attitude toward Caramoan beachscape conservation

	Attitude toward beachscape conservation			
	Agree		Disagree	
Bid amount	N	%	n	%
All	981	98	19	2
100	192	96	2	1
450	194	97	6	3
950	198	99	2	1
1,250	197	99	3	2
1,800	200	100	0	0

Table 2.5 Respondents' willingness to pay for Caramoan beachscape conservation

	Willingness to pay for conservation			
	Yes		No	
Bid Amount	N	%	n	%
100	172	86.0	28	14.0
450	116	58.0	84	42.0
950	79	39.5	121	60.5
1,250	64	32.0	136	68.0
1,800	62	31.0	138	69.0

2.4.4 Attitude Toward Caramoan Beachscape Conservation

Almost all (98 %) respondents support the protection of the Caramoan beachscape (Table 2.4) independent of the bid level assigned to them.

2.4.5 Respondents' Willingness to Pay for Caramoan Beachscape Conservation

The number of respondents willing to pay for Caramoan beachscape conservation decreases as the bid level increased, as seen in Table 2.5. Any fee higher than PHP450 had a majority of the respondents no longer supporting the collection amount. It is safe to say that a fee around PHP 500 would be acceptable to a majority of tourists.

2.4.6 Reasons for Willingness and Unwillingness to Pay for Caramoan Beachscape Conservation

Among the reasons cited by respondents for positive responses to the hypothetical payment plan for beachscape beauty conservation, the highest percentage went to

Table 2.6 Reasons why respondents are willing or unwilling to pay

Reasons	Freq.	%
Willing to pay		
It will promote the sustainable use of the beachscape	183	37
It will provide a steady source of fund for ecotourism management	95	19
It will lessen the threats to coral reefs, mangrove, and sea grass beds	64	13
It will maintain the cleanliness of fine white sand	55	11
It will promote equitable sharing of benefits	34	7
It will provide livelihood	31	6
It will sustain the good quality of water	19	4
It will improve law enforcement	13	3
Unwilling to pay		
I do not believe that the money I will pay will be used for the conservation of beachscape beauty	196	39
I cannot afford to pay for the program	129	25
Only fishers and resort owners who directly benefit from its beaches should pay	83	16
Majority of the poor will be affected	62	12
Only the rich should pay for this	25	5
I prefer to give money to humanitarian causes instead	6	1
I do not think conservation of beachscape beauty is necessary	5	1

wanting to improve the sustainability of the beachscape. This is followed by the following reasons: to provide a steady source of funds for ecotourism management (19 %) and to reduce the threats to coral reefs, mangrove, and sea grass beds (13 %). Improving law enforcement received the lowest support (3 %) for reasons respondents are willing to pay into a beachscape conservation program.

On the other hand, distrust or refusal to believe that the money paid would actually be used for beachscape conservation was the most frequently cited reason for unwillingness to pay (39 %). This is followed by respondents reporting an inability to afford the fees under the hypothetical conservation payment scheme (25 %) and the belief that only fishers and resort owners, who directly benefit from the beachscape, should pay (16 %; Table 2.6).

2.4.7 Parametric Logistic Regressions

The coefficients and probability values of the factors affecting WTP resulting from the logistic regressions of the CV model using the data set are presented in Table 2.7. Results showed that the bid amount (*BID*), age (*AGE*), income (*INCOME*), and attitude toward conservation (*ATTITUDE*) were significantly correlated with WTP. Consistent with economic theories, the bid amount was negatively correlated to WTP, while the variables on age, income, and attitude were found positively correlated with WTP.

Table 2.7 Significant variables affecting willingness to pay

Variables	Model with adjustment for Certainty
CONSTANT	−0.0814624
BID	−0.0016287
	(0.000)**
GENDER	0.0461732
	(0.754)
AGE	−0.0433655
	(0.000)**
CIVIL STATUS	0.16748
	(0.922)
EDUCATION	0.0673712
	(0.276)
INCOME	7.90e-07
	(0.007)**
ATTITUDE toward conservation	1.212579
	(0.025)**
No. of observations	975
LR chi-square	192.84
Prob> chi-square	0.000
Pseudo R square	0.1484

**Significant at p(z) 5 % level. Values in parenthesis are p-values

The negative vectors of BID and GENDER and the positive vector of INCOME are consistent with the study hypothesis. The negative and significant correlation of bid amount to the WTP implies that the probability of the respondents' willingness to pay for Caramoan beachscape conservation decreases as the bid amount increases. The negative and significant relationship of age to WTP indicates that the younger respondents are more likely to be willing to pay for beachscape conservation and protection in Caramoan. This is consistent with the a priori expectation that since environmental conservation is an investment in the future, only those who stand to benefit from returns on their investment in the future—depending on how long they expect to enjoy these benefits—will be willing to pay. Because younger people are likely to outlive older people and are more likely to see and enjoy the fruits of protecting these assets over the long term, they are more likely to invest. Gratification of one's need for future recreational enjoyment serves as the sole driver for the hypothetical willingness to pay for the conservation of Caramoan beachscapes and its ecosystems.

The positive and significant relationship of income to WTP indicates that the respondents with higher incomes are more willing to pay for beachscape beauty conservation in Caramoan. High-income respondents put premiums on environmental improvements compared with their lower-income counterparts, whose limited income is a major constraint in valuing natural resources and environmental services (Seenprachawong 2001).

The positive and significant relationship of attitude to WTP indicates that respondents with higher appreciation for environment conservation are more willing to pay for it. The absence of a causal relationship between attitude and WTP in the protest and uncertainty plus protest models strengthens this observation.

There was no significant relation between WTP and the variables of gender, civil status, and education. This suggests that these factors do not impact respondent acceptance or refusal to pay for beachscape conservation.

The parametric mean WTP derived in this study (PHP563) is comparable to values generated elsewhere: PHP552 for Anilao, Batangas, by Padilla et al. (2005b) and PHP543 for the Tubbataha seascape by Subade (2005).

2.5 Recommendations

The visitor imputation of economic value of the Caramoan beachscape beauty provides the strong justification for the investment of public funds for its conservation. The economic benefits of conserving beachscapes represented by the visitors' aggregate WTP reflect the extent of the value of the beachscape beauty at risk of being lost in the long run if conservation efforts are inadequate. This can help drive the Caramoan municipal government to set up a payment scheme to collect such fees and allocate a larger annual budget for the management and conservation of beachscapes and coastal resources.

Most of the local environmental issues known to the visitors are associated with weak enforcement of laws brought about by the relevant institutions' scarcity of funds and the poor economic condition of a larger proportion of the fishing community. In Caramoan, as in the rest of coastal municipalities bordering Lagonoy Gulf, the lack of employment opportunities and the open access nature of coastal resources spell poverty in the coastal fishery. This situation forces people to discount future benefits from coastal resources, resulting in resource degradation. To stop this trend of coastal resource degradation, there is a need to provide alternative livelihood activities for the community and to invest in coastal environment rehabilitation efforts; these are key challenges to the Caramoan LGU to promote sustainable coastal ecotourism.

Also, the three top ranking institutional and management issues perceived by respondents as having impact on the long-term sustainability of Caramoan beachscapes (i.e., not having sustainable sources of funding for conservation, political issues, and being without harmonized institutional arrangements for beachscape tourism management) highlight the need for sustainable funding, transparency, and sustainable resource governance in the area. The lack of monetary incentives to key personnel of coastal resource management institutions (e.g., *bantay dagat*, MFRS management body) and resource users to enforce laws and adopt sustainable resource utilization practices, respectively, compromise effective coastal law enforcement and resource management. The establishment of PES or its form (e.g., user fees) as a scheme to finance conservation and development

sustainably is an opportunity for the Caramoan LGU to incentivize the positive behavior of resource management personnel and resource users.

The Local Government Code and the Fisheries Code of the Philippines, which provide LGUs with the authority to impose taxes, and fees for the use of the resources and environmental assets within the municipal waters, augur well toward exploring the potential of PES in the future. The current impetus for determining the viability of granting Territorial Use Rights to fishing communities in the use of common pool resources in coastal areas also provides a ray of hope.

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