

## WILLINGNESS TO PAY TOWARDS THE CONSERVATION OF ECOTOURISM RESOURCES AT AGUSAN MARSH WILDLIFE SANCTUARY, AGUSAN DEL SUR, PHILIPPINES

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### Abstract

*This study aimed to determine the willingness-to-pay (WTP) of residents and tourists for the conservation of ecotourism resources at Sitio Panlabuhan Floating Village part of Agusan Marsh Wildlife Sanctuary (AMWS) to establish a basis for collecting a conservation fee. The study used the open-ended contingent valuation method and analyzed using Multiple Linear Regression to reveal WTP. Results revealed WTP of Php. 81.54 and Php. 208.00 for local residents and tourists, respectively. The study suggests a collection increase of entrance or conservation fee as much as Php. 208.00 from Php. 100.00 to increase the integrated protected area fund (IPAF) for the protection and conservation management of AMWS.*

**Keywords:** Ecotourism; Willingness-to-pay; Contingent valuation method; Conservation

### Introduction

Agusan Marsh Wildlife Sanctuary (AMWS) is the largest and least disturbed freshwater wetland in the country. It is declared a protected area under National Integrated Protected Area System Act (RA 7586) by virtue of Presidential Proclamation 913 dated October 31, 1996, for protection and conservation of the biological diversity and protect nationally significant species, biotic communities or physical features of the environment [1]. Like other environmental resources, AMWS offers various ecological services that have both direct and indirect uses. Cultural and ecotourism service is one of these multiple services.

Sitio Panlabuhan Floating Village, as part of AMWS located within LGU-Loreto Agusan del Norte is promoted as a prime ecotourism destination in the locality. The Tribong Manobo of Sitio Panlabuhan Agusan Marsh Organization (TMOSPLAMO), a local people organization, currently manages the ecotourism activity in the area. The opportunity class offer by AMWS belongs to a semiprimitive recreation experience. This opportunity class tends to be more resource-based that attracts adventure-based enthusiasts who love nature viewing [2]. Most popular recreation activities offered are boating along with birds watching and enjoying the scenery of the area.

The introduction and promotion of ecotourism activity could show protected areas without harming its ecosystem when exercised efficiently [3]. As defined by *The International*

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*Ecotourism Society* [4], ecotourism refers to “responsible travel to natural areas that conserves the environment, sustain the well-being of the local people, and involves interpretation and education.” That is why developing countries include ecotourism in their economic development and conservation strategies [5].

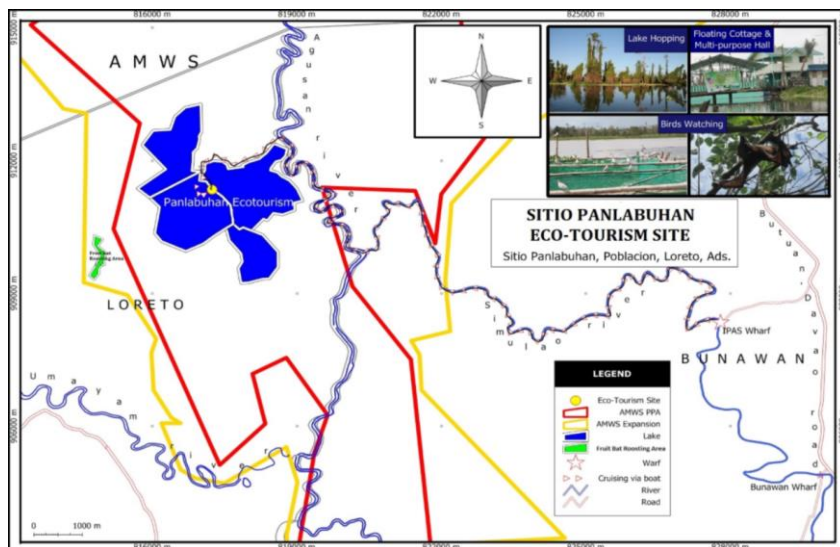
Putting monetary values to environmental goods and services provided by the ecosystem through valuation will provide valuable information about the costs of ecological goods and services that can be used for decision making on the wise utilization of natural and cultural resources [6-8]. Contingent Valuation is one of the valuation methods used for estimating the value that a person places on a good by directly asking people their willingness to pay (WTP) to obtain a specified good [9]. These goods and services include keeping watershed intact for improved water supply, conserving and sustaining ecotourism resources, etc.

In Sitio Panlabuhan Floating Village, resource-based ecotourism is a source of alternative livelihood of locals and potential income generator by protected area management through visitors' entrance fee. *Dixon and Sherman* [10] mention the significance of charging user/entrance fees as a prerequisite to a more optimal market. This study, therefore, attempts to assess local and tourist willingness to pay for the conservation and sustainability of ecotourism resources at Sitio Panlabuhan, Loreto.

## Methodology

### Study Area

The study was conducted in Sitio Panlabuhan, Poblacion, Loreto, Agusan del Sur Located in the center of the Agusan Marsh Wildlife Sanctuary (Fig. 1).



**Fig. 1.** Location Map of Sitio Panlabuhan Floating Village, Loreto, Agusan del Sur

It is the major tourist destination in the area where ecotourism is promoted to enjoy recreational activities while enjoying and understanding the beauty of nature. Sitio Panlabuhan consists of four lakes, namely: Kanimbaylan, Dinagat, Bucugon, and Kubasayon. It is the home of the indigenous group of Manobo tribe where fishing is their primary livelihood. They also have their conventional way of preserving their environment as they believe the need for the lakes to be conserved and protected. The area is accessible by land from Trento-Sta. Josefa-

Veruela-Loreto route or Prosperidad-Talacogon-Lapaz-Loreto route and by boat from Bunawan-Panlabuhan or Loreto-Panlabuhan.

**Data collection**

A reconnaissance visit was conducted before the conduct of the study. A survey questionnaire was developed as a tool for gathering primary data. Locals of Sitio Panlabuhan Floating Village and tourists visited the area were identified as participants of the study. The personal interview with locals was conducted on February 23-24, 2018. A total of 26 households and 15 tourists participated in the study. A limitation for tourist participants was that tourist visit is quite seldom in the area due to its remoteness. And unfortunately, no presence of tourists during the conduct of the study resulted in asking visitors listed on visitor's log booked through phone calls, emails, and Facebook messenger consent to participate by answering the survey questionnaire, which turn out to have low response rate. A 100% enumeration of per household residents which comprise 26 respondents and 15 tourist respondents participated in the study.

**Willingness to Pay Elicitation and Estimation**

Contingent Valuation Method (CVM) uses survey questions to elicit the society's preference for public goods by creating a hypothetical market. A close-ended and open-ended question was asked to the participant. Each of the participants was informed regarding the details on the purpose of conservation of ecotourism resources in Sitio Panlabuhan and format used in the Contingent Value Method. Participants were asked the following questions and required to answer either "yes" or "no" and stated value.

*‘Are you willing to pay an environmental fee for the conservation, protection and development of Sitio Panlabuhan?’ with a follow-up question: How much are you willing to pay per month (for locals) and per visit (for tourist)'*

The model was adopted from Calderon *et al.* [11]. The willingness to pay for a change in environmental quality will be computed using multiple linear regression analysis.

$$WTP = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n$$

where: WTP = estimated willingness to pay; B = coefficient of bid amount variable; X1 = are the independent variable

The definitions of dependent and independent variables are coded, as shown in Table 1.

**Table 1.** Definition of variables used in the willingness to pay for the protection and conservation of AMWS

Variable	Description
<i>Dependent Variable</i>	
Willingness to pay (WTP)	Actual Amount
<i>Independent Variable</i>	
<i>A. Socio-economic characteristics</i>	
Age	Age of respondent (years)
Hh Size	Number of household members
Ethnicity	A dummy variable for ethnicity: 1 if Manobo, 0 otherwise
Occupation	A dummy variable for occupation: 1 if fisherman, 0 otherwise
Organization	A dummy variable for an organization: 1 if Tmosplamo member, 0 otherwise
Increase Aid and Opportunities	A dummy variable for increasing benefits: 1 if believed that ecotourism increases aid and benefits, 0 otherwise
Religion	A dummy variable for religion: 1 if Roman catholic, 0 otherwise
Length of Residency	Length of residency of the respondent (years)
Food Expenses	Amount spent on food in a month
Marital Status	A dummy variable for civil status: 1 if married, 0 otherwise
Reason for Visit	A dummy variable for a reason for the visit: 1 if research, 0 otherwise
Clothing Expenses	Amount spent on clothes in a month

In this study, the dependent variable is the willingness to pay (WTP) of households for the protection and conservation of AMWS while independent variables were divided into socio-

economic characteristics, attitude, awareness, and perception of ecotourism activity in Sitio Panlabuhan.

## Results and Discussion

### *Description of Sitio Panlabuhan Floating Village as an Ecotourism Destination*

Sitio Palabuhan Floating Village is the primary tourist attraction in Loreto, Agusan del Sur, which sits within KanDiBuko (stands for clustered lakes of Kanimbaylan, Dinagat And Bukogon). These clustered lakes are belonging to the Certificate of Ancestral Domain Title No. 090 of the Manobo ethnolinguistic group of Loreto [12]. The whole area is part of the Agusan Marsh Wildlife Sanctuary duly declared as a protected area.

Accessing Panlabuhan Floating Village from mainland jump-off points of Loreto and Bunawan requires improvised motorized boats (locally known as *banca*) for around one and a half-hour ride. No single boat regularly travels to the village and other marshland areas; hence, going to the area require prior booking and proper coordination.

There is only one tourist accommodation facility in the area consist of a multipurpose cottage that serves as holding area, dining area, function area, and view deck area with binocular for birdwatching.

Adjacent to the cottage is a two-story facility that serves as a kitchen on the first floor and sleeping area on the 2<sup>nd</sup> floor. The local ecotourism management provides mattresses, pillows, blankets, and mosquito nets for tourists' comfort.

A solar panel installed in the tourist accommodation facility is usually used for short-term lightning and charging of gadgets. There was no safe water supply in the village, which compelled tourists to bring bottled water purchased at the town center. Mobile phone signal service connectivity is available in the village, which allows tourist to stay connected online.

Ecotourism activity in the area is not only confined to wild bird watching and photography but also boating, hook-and-line fishing, and swimming. The place, too, offers a glimpse of the rich culture and heritage of the people. Most salient of these is the ritual dances welcoming strangers into the community and making offers to their animist deities or spirits, and various cuisines [12].

According to interviews with local tourism managing personnel at the village, most tourists, both domestic and foreign, visit the area primarily because of its unique and rich biodiversity, particularly the flocks of migratory birds. Some tourists wanted to witness the uniques way of living on floating houses by the Manobo indigenous group.

There is no detailed and continuous tourism arrival, and receipt data established as the area has different jump-off entries. However, a rudimentary record-keeping practice by local people organization supervising the reception facility is available but is incomplete. Accordingly, most numbers of tourist visits occur in November up to February, where migratory birds are coming to the marshland. Visitors trend in 2017 (Fig. 2), obtained from locals visitors logbook, conformed to the claim; however, the month of April 2017 has the highest visits due to the tree planting outreach program conducted by highschool students in Bunawan.

The different reasons visitors visit in the village, aside from tourism, are to conduct research studies for thesis and monitoring, aid in community outreach programs, and government related activities.



Fig. 2. Visitors' trend in the year 2017

**Willingness to Pay for Protection and Conservation**

Environmental valuation is the process of putting monetary values on environmental goods and services. Ecological goods and services include scenic views, coral reefs, mountain vistas, biodiversity, watersheds and water supply, forests and carbon sequestration or erosion control, ecosystem conservation, and maintenance of genetic material [13].

In this study, the willingness to pay of the local respondents of Sitio Panlabuhan and tourists were determined for the conservation of the Agusan Marsh Wildlife Sanctuary. Results show that 100% of the residents and visitors are willing to pay to help conserve and protect AMWS. In the model shown in Table 2, the dependent variable is the actual amount of WTP. The predictors included in the model for locals are age, household size, ethnicity, length of residence, food expenses, and ethnicity. While predictors for tourist WTP are the reason for visit, age, and clothing expenses. Results show that age, household size, and ethnicity are inversely related to household WTP, which means that as age and household size increases, the WTP tends to decrease. According to Nwofoke [14], as household consumption increases, household income reduces, thereby leaving little or none for other extra expenses. Also, residents that do not belong to Manobo bloodline want to pay more than the Manobo people. While the length of residency and food expenses positively and significantly affect the households' WTP. This suggests that those who spend more on their food would want to pay more for the conservation of the marsh since the marsh provides their daily necessities. On the other hand, the reason for visit and age has a negative relationship with tourists' WTP, which means that if the reason for the visit is tourism or others, except research, the tourist is more willing to pay. Whereas clothing expenses affects the WTP of the tourists positively.

Table 2. Correlation Analysis of the resident and tourist participants

Factors	Parameters Coefficient	t	Sig.
<i>Local Resident</i>			
Amount WTP	265.736	3.489	.002*
Age	- 2.612 (38.15)	-2.241	.037**
Household Size	- 22.194 (4.35)	-2.685	.014**
Ethnicity	- 145.756 (.92)	-2.883	.009*
Length of Residency	3.703 (21.35)	2.688	.014**
Food expenses	.027 (2,528.85)	2.342	.030**
<i>Tourist</i>			
Amount WTP	773.68	3.39	.006*
Reason for visit	-386.33 (0.73)	-2.89	.015**
Age	-12.16 (30.47)	-2.19	.051**
Clothing expenses	0.13 (676.67)	2.12	.058**

Legend:  $R^2 = 0.505$  (local residents);  $R^2 = 0.501$  (tourist); \*, \*\* significant at  $\alpha = 0.01$  and  $0.05$ , respectively.

R squared results of residents and tourist is 50.5% and 50.1%, respectively, which suggest a good fit model. Factors that are seen significant to affect WTP of locals are age, household size, length of residence and food expenses (at  $\alpha = 0.05$ ), and ethnicity (at  $\alpha = 0.01$ ). For tourists, the factors seen significant at  $\alpha=0.05$  are the reason for visit, age, and clothing expenses. Using the model, the mean WTP of local household and tourist amounts to Php 81.54 per month and Php. 208.00 per visit.

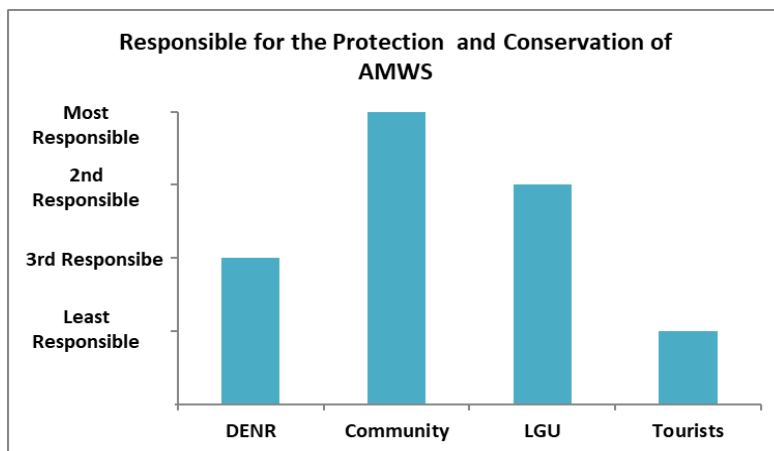
**Reasons for Expressing Willingness to Pay**

Conservation of nature is the protection, preservation, management, or restoration of the natural environment and the ecological communities present in the area. It is generally held to include the management of human utilization of natural resources for the current generation's benefit and sustainable social and economic use. In the survey questionnaires, respondents were asked on what is the reason for them to express their willingness to pay. The majority of respondents (67%) signify that their WTP is for the preservation, conservation, and protect the Agusan Marsh and continue the ecotourism (Table 3).

**Table 3.** Reasons for expressing willingness to pay according to the tourists and residents

Reasons for expressing wiliness to pay	Percentage
To preserve, conserve and protect the Agusan Marsh and continue the ecotourism activity	66.7
For the benefit of the community	15.7
For more opportunities like job and uplift economy	3.9
No Answer	13.7
Total	100.0

According to the respondents, as reflected in Figure 3, the most responsible entity for the conservation and protection of AMWS is the local community. The Manobo community in the area has live and survived for how many years, allowing them to understand and adapt the natural environment of the marsh, thus they have more knowledge and understanding of managing the marsh especially the Sitio Panlabuhan.



**Fig. 3.** Stakeholders who are responsible for the protection and conservation of AMWS according to the local residents and tourist

Further, the community management approach in managing ecotourism at Sitio Panlabuhan should be strengthened. As defined, the community management concept refers to sharing responsibilities and authority in the management process between government and communities [15-17], which, according to [18], represents an essential practice to reach sustainability. The LGU and DENR plan and the local people organization should be integrated

harmoniously. Support and commitment among members of the local organization as well as aids from government and NGO's is essential to sustain ecotourism activity in the area.

## Conclusion

Participants expressed WTP mainly for the conservation of nature, which includes protection, preservation, and management of the ecological communities. The visitor's WTP for the entrance fee was higher than the current entrance fee of Php 100.00. The study suggests collection increase or conservation fee as much as Php. 208.00 to increase the integrated protected area fund (IPAF). However, further study considering greater number of participants should be conducted to acquire the best WTP representation value.

An ecotourism IEC material on the opportunity class that area offers should be made available for tourists to meet their respective expectations and satisfaction. The management should assign an entrance fee collection system to increase revenue collection and closely monitor the number of tourists to visit. Regularly conduct research and monitoring activities to determine the appropriate conservation projects that can be funded from the collected conservation fees or IPAF to attain ecotourism development and sustainability is also recommended.

## Acknowledgment

The researchers are acknowledging the Department of Environment and Natural Resources Caraga Region through the Provincial Environmental and Natural Resource Office Agusan del Sur for the financial support of the study.

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*Received: June 23, 2020*

*Accepted: July 20, 2021*