

Willingness to Pay for Recreational Benefits in Sagada, Philippines: A Contingent Valuation Study

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ABSTRACT

Using contingent valuation method, this study attempts to estimate the value of recreational benefits that accrue to both local and foreign tourists in Sagada, Mt. Province, Philippines. A dichotomous choice format is used to elicit information about tourists' willingness to pay (WTP) for programs that will protect and preserve Sagada's recreational environment. Tourists rank cave activities, waterfall activities, and trekking/nature hike as the three most enjoyable experiences in this popular tourist destination. Tourists' awareness and ranking of critical environmental issues such as vandalism in caves and desecration of burial sites are indicative of their appreciation for a well-preserved natural and cultural heritage. The WTP estimates derived by logistic regression are higher for foreign tourists than for locals, though both figures are higher than the entrance fee that tourists are currently being charged in Sagada. These estimates reflect both use and non-use values held by tourists, including the opportunity to enjoy Sagada again in the future, and bequest value, or the site's protection and preservation for future generations. Bid amount and income are significant variables affecting WTP for both groups, serving as the basis for a fee increase under a two-tiered pricing system. Disaggregated pricing scheme per tourist spot and the attendant policy guidelines in the administration of the environmental potential fund are proposed for future investigation.

Keywords: tourism, contingent valuation method, willingness to pay, environmental issues.

1. Background

In the last few decades, many countries have looked to tourism as a means of promoting development and economic growth. Tourism has become the world's second largest industry, creating 258 million jobs worldwide or 3.2 percent of total world employment, and directly accounting for 3.3 percent of global GDP in 2010 (WTTC 2011).

Tourism links countries together, yet encourages uniqueness of place, identity, and tradition.

In the tourism business, natural resources are intensively used and consumed such that the very process of developing tourism and the consequences of this development impose social, cultural, and environmental costs for the country. A study by Balmford et al. (2009) showed that despite important downturns in some wealthy countries like the United States and Japan, nature-related tourism is generally increasing elsewhere and may still have considerable potential both to generate funds for conservation and to shape people's attitudes towards the environment. The challenge is to develop sustainable ecotourism by making use of tourism's positive impacts, enhancing and channeling the benefits to the right directions, and mitigating the negative impacts as far as possible. Sustainable tourism development meets the needs of present tourists and host regions while protecting and enhancing opportunity for the future. It is envisaged as leading to management of all resources in such a way that the economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity, and life support system (WTTC 1998). Sustainable tourism development, in other words, is ecologically sustainable, economically viable, as well as ethically and socially equitable.

Endowed with rich natural and cultural heritage, the Philippines is one of the countries aspiring to become a strong player in the ecotourism industry. Emerging economies like the Philippines are expected to be increasingly important engines of growth in the ecotourism industry, boosting both international travel and also generating increasingly vibrant domestic tourism sectors (Balmford et al. 2009). An ideal ecotourism destination in the Philippines identified by the Department of Tourism is Sagada, often described as "off the beaten track" (Tacio 2009). Sagada is a mountain resort town (Figure 1) in Mountain Province, tucked between the Cordillera and Ilocos mountain ranges and famous for its ancient engineering marvel and natural and cultural attractions – caves, waterfalls, natural pools, and "hanging coffins." In 2009, *Lonely Planet*, a bestselling travel guide, listed Sumaguig Cave in Sagada as one of the best adventure travel destinations in the world. Sagada has also been the subject of research studies mostly discussing indigenous culture and practices, political institutions and governance, biodiversity and natural resources management (Cariño 1996; Corpuz-Diaz 1994; Dulnuan 2005; Mendoza et al. 2006). Despite this attention that has been given to Sagada, there has been no attempt to look at the economics of tourism which is a growing industry in the municipality.



Figure 1. Mountain view, Sagada. Photo by D.L. Tolentino, 2011.

Since the second half of the 1970s, tourism has grown as a significant industry in Sagada. Its rapid growth in the mid-1980s led to the mushrooming of inns and lodging houses and a great increase in the number of small restaurants and cafes (Figure 2) catering mostly to foreigners. For the past twenty years, it has grown into a bustling tourist destination with an accompanying growth in commerce and trade (Cariño 1996, 8). From 2007 to 2010, total visits to the site per year ranged from 24,030 to 31,456, with peak periods from February to May (Sagada Tourism Center 2011). The heavy influx of tourists in Sagada has both positive and negative consequences. Tourist activity in Sagada has been a major source of employment for local residents and sales for local businesses. However, it has also been the cause of various forms of social stress and culture clash arising from differences between norms and income levels of tourists and locals. There has also been environmental degradation, as seen in garbage accumulation which has led to flooding, and in vandalism which has inflicted serious damage especially on the stalactites and stalagmites in local caves (Dulnuan 2005, 196-197). This confirms that the greatest paradox of tourism is centered on its capacity to generate benefits while creating pressures and problems.



Figure 2. One of the small inns and restaurants that have mushroomed in Sagada with the growth of tourism in the area. Photo by D.L. Tolentino, 2006.

The sustainable management of Sagada's natural and cultural attractions is an emerging issue faced by the local government and the community as a whole. While much economic activity is organized through the private market in which competitive forces determine prices, most nature- and culture-based recreational parks like Sagada exist as public good because of their non-rival consumption and non-exclusion nature. Since they are generally felt to be free goods and services, demand as an economic concept does not lend itself to practical application.¹ An economic approach to address this issue is to convert their services into user's benefit. This is not straightforward since the different attractions of Sagada by their nature do not require direct fees from visitors.² It is therefore necessary to value the services of Sagada's attractions based on user's benefits so that the local government and the community can justify their approaches in protecting and managing Sagada's natural resources and at the same time demonstrate fiscal accountability. Economic analyses that provide tangible estimates of economic interdependencies and a better understanding of the role and importance of sustainable tourism in the site's economy are valuable to local policy makers.

This research aims to measure the value tourists attach to the recreational sites in Sagada using the contingent valuation method (CVM). CVM, as a stated preference method that can elicit willingness

to pay (WTP) to measure both use and non-use values of recreational resources, is considered a popular approach for measuring the demand for recreational resources with public good elements (Haab and McConnel 2002). In the absence of local government funds, willingness to pay for recreational benefits can be a basis for identifying potential sources of sustainable financing. Although the current capacity to finance conservation efforts in Sagada by charging appropriate visitor's user fees may be limited, especially among locals, economic valuation provides the necessary initial step in imputing a value to Sagada's resources so their use can be sustainable. This study can generate valuable economic information for local government policymakers to place sustainable management plans to maintain the quality of recreational attractions in tandem with the preference of local people to preserve their community.

2. Review of literature

The environment is replete with services that people directly and indirectly benefit from. For instance, adequate forest cover results in watershed protection services which ensure steady flows of water. The environment also provides other benefits such as recreation and natural attractions, carbon sequestration, habitat for wildlife, and control of soil erosion, sedimentation and flooding. Because of these benefits, people attach positive economic values to environmental services. The most common approach to estimate the economic value of environmental services like recreational services is the stated preference (SP) approach. This approach uses a questionnaire to discover people's preferences, particularly those concerning monetary valuations of benefits and costs, and allows people to express the value they place on the non-marketed good or service through the creation of hypothetical markets (Bateman et al. 1999). Applications of this approach which examine choices of travel, environmental amenities, and recreational facilities can be gleaned from the empirical works of Ben-Akiva and Lerman (1987), Kroes and Sheldon (1988), Hensher et al. (1988), Adamowicz et al. (1994), and Louviere (2000).

The contingent valuation method (CVM) has become one of the most widely used stated preference techniques in valuing environmental goods and services (Carson et al. 2001). It attempts to elicit information about respondents' preferences for a good or service by asking them how much they are willing to pay (WTP) or willing to accept (WTA) for a good or service. The term 'contingent' is used because the good or service will not actually be provided, the provision of good or service is purely hypothetical. The most basic reason for conducting a CV survey is to elicit figures indicative of

people's willingness to pay rather than figures based on actual market behavior.

One of the common applications of CVM is in valuing benefits from recreational and tourist attractions as shown by existing literature. In Europe, US, and Australia, CVM surveys provide estimates to value outdoor recreational services in Finland's state-owned parks (Huhtala 2004), cave diving in Florida (Huth and Morgan 2009), and reef diving in Texas (Ditton et al. 2001), California (McGinnis et al. 2001), and Australia (Kragt et al. 2006).

In Asia, including the Philippines, CVM is also used to elicit willingness to pay for conservation of recreational resources. Nuva et al. (2009) assessed visitors' willingness to pay for conservation of the resources at Gunung Gede Pangrango National Park in West Java, Indonesia using dichotomous choice CVM. WTP results indicate that income, gender and residence are significant factors influencing the visitors' WTP for the entrance fee to the park. In Malaysia, Radam and Mansor (2005) applied dichotomous choice CVM to value outdoor recreation resources in Manukan Island, Sabah. Both the logit and probit models were used to model the relationship between willingness to pay, a discrete variable representing choice, and a set of independent variables. The maximum likelihood estimates of the model show that income and price are significant variables in determining one's willingness to pay. The WTP figure derived from the model was higher than present fees charged to visitors.

In the Philippines, Arin and Kramer (2002) used CVM for an exploratory study on divers' demand for visiting three major marine sanctuaries. The results suggested that the average WTP is considerably higher on Mactan Island (US\$5.5) than in Anilao (US\$3.7) and Alona Beach (US\$3.4). Subade (2005) reported mean willingness to pay by Puerto Princesa residents of PhP278 to PhP496 for a conservation trust fund for the Tubbataha Reefs National Marine Park in Palawan. In Bolinao, Pangasinan low mean willingness to pay was elicited from tourists for the recreational and conservation value of coral reefs along Lingayen Gulf (Ahmed et al. 2007). For the conservation of the Banaue rice terraces, CVM estimated the WTP values for local and foreign tourists at PhP440 (about US \$9) and US\$71, respectively (Calderon et al. 2009). In this study, the WTP is affected by age, income and bid amount.

3. Methodology

3.1 Sampling procedure

A face to face survey³ was conducted among a total of 302 local and 70 foreign tourists in Sagada from April to May in 2011. The number of respondents was determined from secondary data of the Sagada Tourism Center on tourist arrivals during the months of March, April and May, 2010.⁴ Respondents were chosen using cluster sampling with the adventure sites as the basis for clustering. Within each cluster, visitors were chosen using systematic sampling to ensure randomness, minimize bias, and address sufficient variation in the individual characteristics of respondents.⁵ In order to avoid redundancy, only the leader of a group was chosen as respondent. General field protocols⁶ were followed in the conduct of the survey administered from March to May 2011.

3.2 Design of the questionnaire

A CVM questionnaire includes general questions on the attitudes of respondents towards environmental issues, a description of the scenario depicting a plan for the provision of a public good, and a payment question which asks respondents about their WTP for the proposed plan. Questions about socio-demographics are usually placed in the last portion of the questionnaire (World Bank Institute 2002).

This contingent valuation survey opened with general ("warm-up") questions aimed at making the respondent comfortable with participating in the survey and answering questions. This was followed with a description of the scenario depicting the use of recreation sites of Sagada, the accompanying resource/environmental issues and problems, and a hypothetical program to address the problems. Whenever necessary, this description was aided with accompanying materials such as photographs. CVM is very much dependent on the respondents' understanding of the resource good in question, thus the hypothetical scenario must be clearly presented.

The payment question followed, which asked respondents about their WTP for the proposed program. The respondents were explicitly told that the payment vehicle is an increased entrance fee that will go to an environmental trust fund dedicated for the preservation of Sagada's natural and cultural attractions.

Questions about socio-demographics included the respondent's age, household income, marital status, educational attainment, and some general "attitude" questions, such as whether the respondent considers himself an environmentalist. These questions together with

travel characteristics and site activities were placed in the last portion of the questionnaire.⁷

The careful drafting and pre-testing of a CV questionnaire is important to make sure that it mimics the relevant features of the marketplace and that the respondents have understood and accepted the main description and questioning reasonably well. The questionnaire was carefully designed recognizing the conclusion of Carlson et al. (2001) that while the CV method can result in an overestimate of actual mean WTP, evidences abound that a carefully designed CV instrument can produce an estimate of mean WTP that is much closer to actual mean WTP. White et al. (2005) analyzed the questionnaires used in 57 ecological academic journals, published between 1991 and 2003, yielding a sample size of 168 questionnaires from 127 papers published in 22 academic journals. Analysis showed that in WTP studies, closed-format questions remove the problems associated with very high or very low WTP values being given by respondents. Carson (1997) conducted a comprehensive review of empirical CV evidence and concluded that CV results from carefully designed surveys conform to the prediction of economic theory. First the percentage of respondents willing to pay a particular price should fall as the price they are asked to pay increases. This condition, similar to a negative own price elasticity for a marketed good is almost universally observed in CV studies. Second, 31 studies passed the scope sensitivity tests and only four did not. Likewise, several experiments comparing hypothetical and actual WTP for hunting permits have found no statistically significant difference between mean values of hypothetical and actual willingness to pay (Mitchell and Carson, 1989).

The draft questionnaire also benefited from inputs from focus group discussions (FGDs), the purpose of which was to generate information that were used to refine the scenario/s for the contingent valuation survey such as the acceptable starting point and range of bids that were used to elicit willingness to pay, the vehicle for the collection and mode of payment of fees, and acceptable ways of administering the revenues that will be generated in the hypothetical market that will be created. Two FGDS were conducted, one before drafting the questionnaire and the other before the pretest.

A pre-test of questionnaire was employed prior to the survey. The pre-test aimed to assess the clarity of the questionnaire and possible interviewer effects. From the FGDs and pretest, the plausible range of bid prices, the payment vehicle or the method of collecting payment and other information necessary in building a credible and acceptable hypothetical management scenario were obtained. Five plausible bid amounts were determined and used in the survey proper; these are PhP50, PhP80, PhP100 and PhP120 and PhP150. The

survey enumerators or interviewers who were involved in the study underwent training in the CV method following Whittington (2002).

3.3 WTP elicitation techniques

The dichotomous choice approach was used to elicit information about the respondents' WTP. This is also called referendum method and has the advantage of being incentive compatible.⁸ Using this approach, the respondents were offered a random price, to which they answered either 'Yes' or 'No'. Follow-up questions were given to narrow the willingness to pay price range. Specifically, the respondents were asked the following questions and were required to answer either 'Yes' or 'No':

"Suppose that a trust fund for the improved management and preservation of Sagada's recreation sites will be created and will be managed by a council composed of various stakeholders. Proceeds from a new entrance fee will go to the trust fund. If entrance fee is increased to PhP x, would you be willing to pay so that you could continue to enjoy Sagada's recreational sites?"

where x ranged from PhP50 to PhP150, representing a 'reasonable' amount of entrance fee from pretest and FGD results. Post-survey debriefing was also conducted particularly for examining the reasoning behind irrational responses.

A cheap talk script aimed to reduce hypothetical bias was also developed. Before asking the CV question, the interviewer explained the hypothetical bias phenomenon wherein respondents would vote for the program in surveys but would vote otherwise in an actual referendum. Respondents were also reminded of their budget constraint and were requested to vote according to how they could act in the event of a real referendum.

3.4 Estimation technique

Parametric models allow for the incorporation of respondent characteristics into the willingness to pay function to describe the behavioral or preference tendencies of the respondents (Haab and McConnell 2002). In effect, the parametric technique estimates the preference function, which would allow the calculation of the willingness-to-pay value given the estimated parameters.

A bid function can be calculated to explain the variation in WTP responses due to changes in bid amounts or prices of a good and differences in socio-economic characteristics of respondents (Bateman and Willis 1999). The observed discrete choice response of each

individual is assumed to reflect a utility maximization process. From the standard economic theory standpoint, there is an indirect utility function given by (V) which describes the maximum amount of utility a tourist can get from income (Y) subject to the price of the good (P), and the possible effect of demographic and socio-economic factors (D). This is given by:

$$V(Y, P, D) \quad (1)$$

Any change in one of the factors would impact the level of utility. An increase in the price of the non-market good, say from P^0 to P^1 represents an improvement which in this study is represented by the establishment of Sagada's environment management program, and thus, tourist's utility will be higher, *ceteris paribus*.

$$V(Y, P^1, D) > V(Y, P^0, D) \quad (2)$$

In a CV survey, a respondent is assumed to compare utilities. Under the assumption that he is a utility maximizing agent, a respondent in a dichotomous choice survey would accept or reject a bid amount by responding "Yes" or "No" for improvement in a good or service. Under the management program scenario, he would accept the proposal if:

$$V(Y - P^1, D) > V(Y - P^0, D) \quad (3)$$

The tourist is willing to pay the bid amount provided his utility with the management program and the required payment is higher than without the management program at the lower bid price. However, there is also a random part of respondents' preferences which cannot be observed by the researcher and is therefore uncertain. Only probabilities may be assigned to the Yes and No responses. The probability that the respondent would accept the proposal is given by:

$$\text{Prob(Yes)} = \text{Prob}[V(Y - P^1, D + \varepsilon_1) > V(Y - P^0, D + \varepsilon_0)] \quad (4)$$

The first two terms of the equation could be determined while the additional element, ε is the stochastic term that represents the part of the true indirect utility that cannot be captured. Haneman (1994) showed that if linearly specified using logarithms, the willingness to pay for a change in P and D can be expressed as:

$$\log \left[\frac{\text{Prob(Yes)}}{1 - \text{Prob(Yes)}} \right] = \alpha + \beta_1 P + \sum_{i=2}^n \beta_i D_i \quad (5)$$

α and β in equation (5) can be calculated parametrically using logit regression. The logit model guarantees that the estimated probabilities lie in the 0 to 1 range and that these are nonlinearly related to the explanatory variables. The mean WTP can be calculated as:

$$\text{Mean WTP} = \frac{1}{\beta_1} [\ln(1 + e^{\alpha + \sum \beta_i D_i})] \quad (6)$$

Following Subade (2005) and Calderon (2008), logistic regression technique was used to estimate WTP from the following bid function used in this study:

$$\log \left[\frac{\text{Prob(Yes)}}{1 - \text{Prob(Yes)}} \right] = \beta_0 + \beta_1 P + \beta_2 Y + \beta_3 A + \beta_4 G + \beta_5 C + \beta_6 E + \varepsilon \quad (7)$$

where: $\log \left[\frac{\text{Prob(Yes)}}{1 - \text{Prob(Yes)}} \right]$ = willingness to pay with a value of 1 if Yes and 0 if No

P = price or bid amount in pesos

I = monthly income in pesos for local tourists and dollars for foreign tourists

A = age in years

G = gender

CS = civil status

E = education

β_0 = intercept

β_1, \dots, β_6 = associated regression coefficients of the variables

ε = error term

4. Results

This section provides the socio-economic characteristics of the respondents and their travel and site activities. It also includes information on awareness on resource issues and valuation of recreational activities in Sagada. Statistical averages, frequencies and WTP values are computed using SPSS.

Profile Variable	Indicator	Local Tourists		Foreign Tourists		
		Number	Percentage	Number	Percentage	
Gender	Male	138	46	44	6	
	Female	164	54	26	37	
Civil Status	Single	198	66	50	71	
	Married	97	32	18	26	
	Separated/Widowed	7	2	2	3	
Age (years)	20 - 29	179	59	38	55	
	30 - 39	84	28	21	30	
	40 - 49	31	10	8	11	
	50 - 59	8	3	3	4	
Education	High school	7	2	4	6	
	Vocational	5	2	4	6	
	College	243	80	46	66	
	Graduate	47	16	16	22	
Employment	Full-time	231	76	44	63	
	Part-time	51	17	26	37	
	Unemployed	20	7	0	0	
Income	Local (PhP)	Foreign (US\$)				
	<10000	<3000	30	10	24	34
	10000 - 14999	3000 - 5999	45	15	12	17
	15000 - 19999	6000 - 8999	69	23	14	20
	20000 - 29999	9000 - 11999	63	21	10	14
	30000 - 39999	12000 - 14999	28	9	4	6
	40000 - 49999	15001 - 17999	25	8	2	3
>50000	>18000	42	14	4	6	
Membership in Organizations	Civic Yes		63	21	12	17
	Civic No		239	79	58	83
	Environment Yes		33	11	6	9
	Environment No		269	89	64	91

Table 1. Socio-economic profile of local and foreign tourist respondents.

4.1 Socio-economic profile

Table 1 presents the profile of the respondents, classified as local and foreign tourists. Majority of the respondents are single as indicated by 66% and 71% of local and foreign tourists, respectively. Likewise, more than half of both groups of tourists are in the 20 to 34 age range. Male and female local tourists are almost equally distributed, while males dominate the foreign tourists. There is a preponderance of college graduates as shown by 80% and 66% of local and foreign tourists, respectively. Employment data reveal that 76% of local tourists and 63% of foreign tourists are employed

full time. Monthly income of local tourists ranges from PhP10,000 to PhP50,000 but majority are in the PhP10,000 to PhP30,000 category (approximately US\$233 to US\$698). Among foreigners, majority of the respondents are in the US\$3,000 to US\$9,000 monthly income category. Only 21% and 11% of local tourists are members of civic and environmental organizations, respectively. For foreign tourists, only 17% and 9% are members of civic and environmental organizations, respectively.

4.2 Travel and site activities

A discussion is devoted to the travel and site activities of tourists given that tourism consists of a specific sequence of recurring, consecutive elements such as the journey to and from the chosen destination, and the stay at the destination. Majority of the respondents spend about 12 hours travelling to Sagada with Manila and its peripheries as the points of origin. Sagada is approximately 400 kilometers north of Manila and 140 kilometers from Baguio City. Most visitors took the Manila-Baguio-Sagada route along Halsema Highway via the public bus system. Alternative traveling arrangements included taking the bus from Manila to Baguio and renting a van from Baguio to Sagada. Only a few respondents took private vehicles in the trip. Most of the respondents came in groups, the size ranging from two to ten. Length of stay was three days and two nights, except for the adventure lovers who stayed four to five days.

Respondents were asked to rank the activities they engaged in while in Sagada in terms of satisfaction and enjoyment derived from these activities (Table 2). Both local and foreign tourists ranked the cave activities, waterfall activities, and trekking/nature hikes as the three most enjoyable activities (see Figure 3 for options available to Sagada tourists). Spelunking in Sumaguig Cave was cited as the best adventure. Four hours of spelunking offered steep descents and rewarded the spelunker with views of wonderful stalactite and stalagmite formations. The more adventurous ones proceeded to cave connections which required seven hours of rappelling and crawling through tight and narrow spaces. According to guides of the Sagada Environmental Guides Association, all caves in Sagada are interconnected and three Italian cave divers had initially explored this connection in the eighties. A visit and dip in the towering Bomod-ok Falls (also called the Big Falls) was ranked high given that tourists had to do an hour trek to the falls and along the way, were treated to the sight of graceful rice terraces hugging the mountains. According to a foreign tourist, the undulating rice swaying in the wind like green waves in a terraced sea was enough to hypnotize and lull a visitor to

calmness. A bonus in this nature trek was passing through a village filled with traditional Kankana-ey houses. The spectacular sunrise viewing at Kiltapan and sunset viewing at Lake Danum followed by bonfires also provided remarkable enjoyment to both groups of tourists. Experiencing the geologic features and natural beauty in the context of the whole landscape of Sagada made the visit to this destination special. For both groups of tourists, Sagada was truly a highland retreat, with pine trees, crisp cold breezes, and verdant knolls and hillocks.

Site Activity	Local Tourists	Foreign Tourists
Spelunking/ exploring caves	1	1
Swimming under the waterfall	2	2
Trekking/ nature hikes/sunset and sunrise viewing	3	3
Rapeling	5	6
Visiting burial sites, museum and historical sites	4	5
Observing tribal celebrations	6	4
Bonfire	9	9
Picnic	7	7
Shopping	8	8

Table 2. Ranking of activities in terms of enjoyment by local and foreign tourists.



Figure 4. Burial rite at Bao-eng, popularly known as Echo Valley. The “hanging coffins” of Sagada are a major cultural attraction. Photo by Roland Rabang, 2007.

Both groups of tourists were amazed by Sagada’s traditional way of burying the dead—either by stacking the coffins at the opening of a cave like in Lumiang Cave, or by hanging them precipitously from cliffs (Figure 4). They expressed admiration for the tribal celebrations religiously observed by the locals. They also expressed interest in Sagada pottery, weaving, and museum. Weaving is an important industry in Sagada where tourists are able to see looms and the colorful patterns of the different native textiles used in garments, bags, and placemats. The Ganduyan Museum showcases indigenous artifacts such as shields and machetes used during the headhunting days of the Kankana-ey, traditional attires, home implements, jars, jewelry and burial shrouds, giving travelers a better understanding of local culture. Tourists engaged with the cultural heritage of Sagada not only through monumental forms but also through intangible ways, as the past is enshrined in contemporary behaviors and practices. While tourists’ demand to see cultural displays and rituals can produce conflicts with the local community, this tension does not exist in Sagada because rituals are done not to suit the timing of tourist arrivals and visitors’ curiosity (Figure 5). They are organically enacted traditions effectively preserved by the locals.

Sagada Choose your own adventure

SPELUNKING / CAVING

- Southern Sagda**
Cave Connection (4 hrs)
Sagong Hanging Coffins viewpoint
Lumiang Burtal Cave
Sungang Cave
Fee: P800 for 3 visitors or less +P400 each add'l visitor
Optional Ride: +P400
- Southern Sagda**
Short Course Caving (2 hrs)
Sagong Hanging Coffins viewpoint
Lumiang Burtal Cave entrance
Sungang / Big Cave
Fee: P500 up to 4 visitors
P1,000 good for 8 visitors
P1,500 good for 12 visitors
above 12 visitors: P125/person
- Matibon-Balaganan Cave**
Combination of Mountain trekking
And Cave spelunking
Whole day activity
Fee: P 3,500 for 2 visitors or less
Inclusion of guide, Lamp & snacks
- Reminders: Caving**
 - Attire:
 - shirt (loose collar)
 - shorts/leggings/loose pants (not denim)
 - rubber sandals/flip-flops/sneakers
 - Don't enter the cave after 5 PM
 - A descent cave will wait level water near the exit/entrance
 - Video or camera: If not waterproof, bring Ziploc

TREKING / HIKING / SIGHTSEEINGS / ADVENTURES

- Central Sagda**
Eco-Cultural Tour
Echo Valley hanging coffins
Underground River entrance
Bakong / Small Falls
Fee: P400 good for 10 visitors
- Northern Sagda**
Eco-Cultural Tour
Bomodok / Big Falls
Fidilian Rice Terraces
Northern Sagda Villages
Fee: P600 good for 10 visitors
Optional Ride
- Central Sagda**
Rock Climbing
No. one limit
Equipment Provided
Fee: P800 For 2 or less
• P400 each add'l visitor
- Try our exquisite **SAGADA BONFIRE**
Enjoy the cool breeze up in the mountains OR
Overnight Camping, Tents provided
Sagada to Matibon Hot Spring to Maligcong, Boonoc
1 1/2 day to 2 days of hiking passing
through village, terraces & Mountains
Fee: P3,000 for 3 visitors or less
Inclusion of:
Meal, guide, transportation & Accommodation
- Mr. Suspiran
2,200+MASL
Highest Mountain in Sagada
8-7 hrs. of hiking
Fee: P 3,000 for 3 visitors or less
Inclusion of:
Lunch, guide & transportation

TREKING / HIKING / SIGHTSEEINGS / ADVENTURE

- Eastern Sagda**
Mountain trek
Mariboro Country
Limestone Formations
Wild Horses
1630 MASL
Fee: P 600 good for 10 visitors
- Western Sagda**
Ampacao Mountain Trek
1889 MASL
Fee: P 600 for 10 visitors or less
- Kali the Upper Chikon River**
0908 721 6200
info@sagada@gmail.com
P7,500/boat
best seen from mid-February to mid-June
- Eastern Sagda**
Kiltapan
Sunrise View
Rice Terraces
start at 4:30am
Ride: P450 good for 10 visitors
- best seen from mid-February to mid-June
- Western Sagda**
Danum Lake
Sunset View
Pottery Shop
start at 4:30pm
Ride: P900 good for 10 visitors
- Bengnan-Langayan-Pilaw-Danum Trekking**
4-7 hrs. of hike
Combination of Many Forests & Pine Forest
Fee: P 1,500 for 2 visitors or less
Inclusion of:
Guide & snacks

Figure 3. Poster showing adventure options available to tourists in Sagada.

4.3 Awareness of issues

Respondents were asked to rank the issues that they think are relevant to Sagada and which they would like the hypothetical program to address. They were requested to assign a number to each issue according to its importance using a scale of 1 – 4, with 1 as the top priority. Table 3 shows the frequency distribution of responses and the weighted mean of the values for each issue. Local tourists rated vandalism on caves as the first priority, with desecration of historical sites (Figure 6) and garbage accumulation as second priority issues. Water shortage was considered a third priority issue. On the other hand, foreign tourists gave first and second priorities to desecration of historical sites and vandalism on caves, respectively. Both garbage accumulation and water shortage were rated third priority.

It can be gleaned from Table 3 that local tourists are more concerned with vandalism on caves while foreign tourists express higher priority on issues related to the desecration of historical sites. Local tourists consider the stalactite and stalagmite formations in the caves as one of the most important attractions of Sagada, but not every visitor understands how fragile these stone formations are. Some tourists who go on spelunking in the cave would take chips or inscribe their names in the stone formation. The issue of desecration of historical sites is raised specifically in the context of the burial sites where in the past some less knowledgeable visitors forcibly opened the wooden coffins and took pieces of bones for souvenir. Such action is frowned upon by tourists especially by the foreigners who demand for the original and authentic elements of a destination’s culture (UNESCO 2005). The natural and cultural heritage of a destination is the main motivation for a tourist’s visit, and this is especially the case for nature and cultural tourism. The outstanding natural and cultural features of a destination are those which make a place like Sagada special and worth a visit.

Issue	Local Tourists						Foreign Tourists					
	1	2	3	4	WM	P	1	2	3	4	WM	P
Vandalism on caves	121	95	52	50	1.74	1	22	20	18	10	2.23	2
Desecration of historical sites	70	83	69	80	2.20	2	46	6	14	4	1.66	1
Garbage accumulation	109	75	68	50	2.23	2	12	9	27	22	2.84	3
Water shortage	28	52	97	125	3.27	3	14	10	24	22	2.77	3

WM – weighted mean P – priority

Table 3. Prioritization of environmental issues by local and foreign tourists.



Figure 5. *Begnas di Lebek*: Sagada elders lead in a march through rice paddies en route to a sacred place to perform a ritual. This stage in a six-cycle ritual happens in March when rice grains begin to break out. Photo by Roland Rabang, 2009.

On the issue of garbage, some tourists shared their observation that plastic bottles and food wrappers were scattered along the way in some sites. This was confirmed by the members of the Sagada Environmental Guides Association, who claimed that at the end of the tourist season, they assisted the local government on a voluntary basis in clearing the accumulated trash lest this contribute to flooding in the rainy season. The water shortage problem is felt at the height of the tourist season when water consumption is high resulting in water use conflict between lodging houses and local residents (Dulnuan 2003, 197). Visitors shared that water pressure was already low even in the lodging houses. The last two issues have implication on the determination of how many guests are manageable in relation to infrastructure such as waste disposal and water supply facilities. It can be argued that communities like Sagada can launch an industry with minimal tourist comforts, but basic infrastructure is required both for visitor convenience as well as resource protection.



Figure 6. An important concern is the desecration of historical and cultural sites, like these burial caves in Sagada. Photo by Roland Rabang, 2007.

4.4 Willingness to pay

The study found out that 55 percent of the local respondents are willing to pay the specified bid amounts for the preservation of Sagada’s recreational attraction. Comparing percentages of ‘yes’ responses for the lowest and highest bids, the local tourist sample has 14 percent saying ‘yes’ to the lowest bid amount while six percent are willing to pay the highest amount. On the other hand, 49 percent of the foreign respondents show willingness to pay the bid amounts presented. About 14 percent agree to the lowest bid amount while 11 percent are willing to pay the highest amount. For the local tourist respondents, the WTP percentage is consistent with economic theory when analyzed across bid amounts as shown in Table 4a. As the price of the good or service increases, the respondent is less willing to purchase the good.

Bid Amount	Yes		No		Both	
	Number	Percentage	Number	Percentage	Number	Percentage
50	44	14	22	7	66	22
80	39	13	23	8	62	20
100	39	13	21	6	60	20
120	26	9	25	9	51	17
150	19	6	44	15	63	21
All	167	55	135	45	302	100

Table 4a. Distribution of local tourist respondents by responses to bid amounts.

Among foreign tourists, consistency with economic theory is observed in bid amounts from PhP50 to PhP80 when the percentages of those willing to pay decline as bid amount increases. However, in the PhP120 and PhP150 bids, more foreign tourists are willing to pay than in the P80 bid. On inspection, there might be a kink in the bid amount relative to the number who said ‘yes’. There are more respondents saying ‘yes’ to low and high amounts of bids and less respondents saying ‘yes’ to the middle amount of 100. This may be accounted for by the large disparity in income of foreign tourists. Likewise, despite the randomness in the choice of respondents, a check on the profile showed that more foreign tourists with very high income were the ones asked about the two higher bids such that these amounts seemed very small and negligible relative to their income.

Bid Amount	Yes		No		Both	
	Number	Percentage	Number	Percentage	Number	Percentage
50	10	14	6	9	16	23
80	6	9	6	9	12	18
100	4	6	7	10	11	16
120	6	9	8	11	14	20
150	8	11	9	12	17	23
All	34	49	36	51	70	100

Table 4b. Distribution of foreign tourist respondents by responses to bid amounts.

To allow protest screening, respondents with a ‘No’ response to the referendum question were asked to give their reason for voting ‘No’. The main reason mentioned is the large travel and site expenses associated with a Sagada visit. Travel expenses from origin to Sagada ranged from PhP6,000 to PhP10,000 per person for a three-day visit. These expenses included transportation, food, hotel accommodation, payment for guides, and shopping. The second main reason cited

is associated with tourists recognizing their rights to use natural resources for free and with no constraints, while the third reason alludes to the position that it is the responsibility of the government to finance the protection of Sagada’s resources from tax revenues. Only a few respondents indicated that their ‘No’ response has to do with visiting Sagada as not important and being able to find other places as alternative to Sagada. Mistrust of the institution that would manage the funds appeared to be a concern of tourists. This reason for reluctance to pay has implication on the administrative mechanism of handling the fund.

Reason	Local tourist		Foreign tourist	
	Number	Percentage	Number	Percentage
Visiting the site is not important enough to me	5	4	3	3
I would use other sites	13	10	5	13
I cannot afford additional payments	52	38	15	38
Basic services should be provided through tax revenues	32	24	6	15
I have the right to use natural recreation sites and services	43	32	12	31
I do not trust the institution that would handle the fund	12	9	6	15

Total does not add-up to 100% due to multiple responses; N(local) = 302, N(foreign) = 70

Table 5. Reasons of local and foreign tourists who are not willing to pay the bid amount.

To determine what motivates people to show willingness to pay, respondents were asked to give their reasons for their willingness to pay for the protection and preservation of Sagada’s recreational attraction. Among local tourists, one of the most cited reasons for willingness to pay is the assurance of future use of the site. For foreign tourists, the dominant reason is the potential future use of the site, noting that besides their importance as tourist attractions, each component of the natural environment of Sagada may be the topic for educational and scientific interests. Another most quoted reason points to the preservation of the original and authentic elements of the culture of Sagada for future generation, otherwise referred to as bequest value. Other reasons refer to the willingness to support the protection of undisturbed nature and the provision of recreational services to everyone. Mere knowledge that a healthy and beautiful natural environment exists makes tourists appreciate its value.

Reason	Local tourist		Foreign tourist	
	Number	Percentage	Number	Percentage
I want to guarantee myself an opportunity to use the site in the future	96	57	8	23
I want to ensure the preservation of the recreation sites for potential future use	51	31	32	91
I want to support the provision of recreation services to everyone	59	35	15	43
I want to support the preservation of the original and authentic elements of this site’s culture for future generations	96	57	28	80
I want to support the protection of undisturbed nature	75	45	36	91

Total does not add-up to 100% due to multiple responses; N(local) = 302, N(foreign) = 70

Table 6. Reasons of local and foreign tourists who are willing to pay the bid amount.

4.5. Estimates of willingness to pay

Using logistic regression, the mean WTP were calculated for local and foreign tourists. From an efficiency standpoint, the mean WTP is a more valid measure (Bateman et al., 2002). The WTP estimates resulting from the logistic regression are PhP82.63 for local tourists and PhP128.64 for foreign tourists. This means that at prevailing conditions, each local and foreign tourist on the average realizes a net benefit of PhP82.63 and PhP128.64 per visit, respectively. Although these WTP estimates are relatively smaller than those obtained in previous CVM studies of national parks cited in the review of literature, they are significantly higher than the current entrance fee of PhP20 collected by the Sagada Tourism Center. This implies that there is scope for increasing current tariff and exploring a price discrimination scheme. Such option has to take into consideration the higher percentage of locals willing to pay compared to foreigners, as well as the implications to projected amount of revenues from such measure. The data show that 80% of tourists are local, of which 55% are willing to pay at a lower amount of about PhP80, while around 20% of tourists are foreign, of which 49 percent are willing to pay a higher amount of about PhP130.

4.6 Determinants of willingness to pay

Multivariate regression analysis helps analyze WTP responses by determining if WTP estimates are internally consistent or theoretically valid. This model permits identification of the factors that influence respondents' WTP, and checking if directions of effects are consistent with theoretical expectations. Explanatory variables included in the analysis were bid amount, income, gender, civil status, age, and education of the tourists. Logistic regression allowed several iterations to improve the model which resulted in some variables being dropped in the estimation if they prove to be insignificant in the initial runs. Tables 7a and 7b contain the complete multivariate regression results for local and foreign tourists, respectively.

In the analysis for local tourists, bid amount, household income and age of the tourists were found to significantly influence willingness to pay for protection and preservation of Sagada's attractions, at 1%, 1% and 5% levels of significance, respectively. The same variables are reported by Calderon (2008) to significantly affect WTP of tourists in the Banaue rice terraces. The result for bid and income is consistent with the *a priori* expectation that the price of the good and ability to pay influence people's willingness to purchase the good. The effects of these variables are in opposing directions. The bid amount negatively influenced WTP indicating that the higher the bid, the less likely tourists would be willing to pay in support of the preservation of Sagada's natural and cultural heritage. The odds ratio shows that the higher the bid amount, the odds of tourists saying 'Yes' to the bid becomes smaller.

On the other hand, household income affects WTP in the positive direction. The higher the household income, the more people will want to pay. The odds that a tourist with higher income is willing to pay the bid are 3.8 times greater than the corresponding odds for a tourist with a lower income. Age displays a negative sign which implies that as tourists get older, the odds of them saying 'Yes' to a bid get smaller. The cross tabulation of willingness to pay by age brackets confirmed this relationship given that 22 percent of respondents who are willing to pay belonged to the age bracket of 20 to 29 years old. This percentage declines to twelve, nine and six as age bracket moves towards the thirties, forties and fifties. Recall that the most cited reason for willingness to pay is the opportunity to use the site in the future. Younger tourists have a relatively higher probability of returning to Sagada to enjoy the site than the older ones. Over-all the model correctly classifies 78 percent of the cases. The Nagelkerke R² of 0.58 indicates the strength of association between the probability of saying 'Yes' to a bid and the determinants.

Variable	Coefficient	Wald statistics	Significance	Exp(B)
Bid	-.038	41.90	.01	0.963
Income	1.355	61.43	.01	3.88
Age	-0.284	5.04	.05	0.75
Educ		0.30	0.96	
Educ 1	0.477	0.22	0.64	1.61
Educ 2	0.175	0.02	0.89	1.19
Educ 3	0.233	0.22	0.64	1.26
Constant	0.973	1.71	0.19	2.65
-2 Log likelihood	242.96			
Nagelkerke R ²	0.58			
% Correct	78			

Table 7a. Determinants of WTP among local tourists.

For foreign tourists, the explanatory variables included in the final model were bid amount, income, and civil status, with gender, age and education of the tourists dropped in the estimation since they proved to be insignificant in the initial runs. As shown in Table 7b, only bid amount and income significantly influenced willingness to pay for protection and preservation of Sagada's attractions, both at 1% level of significance. The result for bid and income is consistent with the *a priori* expectation that the price of the good and ability to pay influence peoples' willingness to purchase the good. The bid amount negatively affect WTP revealing that the higher the bid, the less likely foreign tourists would be willing to pay in support of the preservation of Sagada's natural and cultural heritage. The odds ratio of 0.979 implies that the higher the bid amount, the odds of a foreign tourists saying 'Yes' to the bid becomes smaller.

On the other hand, household income sways WTP in the positive direction. A higher household income encourages people to want to pay. The odds that a foreign tourist with higher income is willing to pay the bid are two times greater than the corresponding odds for a tourist with a lower income. Over-all the model correctly classifies 66 percent of the cases. The Nagelkerke R² of 0.31 indicates the strength of association between the probability of saying 'Yes' to a bid and the price of the bid and income of the tourist.

Variable	Coefficient	Wald statistics	Significance	Exp(B)
Bid	-.022	6.72	0.01	0.979
Income	.703	10.83	0.01	2.019
Civil status		1.27	0.53	
Civil status1	-18.81	0	.99	0
Civil status2	-18.17	0	.99	0
Constant	0.67	0	.99	3.2E+ 8
-2 Log likelihood	82.91			
Nagelkerke R ²	0.31			
% Correct	66.2			

Table 7b. Determinants of WTP among foreign tourists.

For both local and foreign models, it should be noted that the Nagelkerke R² is a pseudo-R² measure and does not have as compelling an interpretation as the linear regression R². Even for very successful models they tend to be much lower than those who are accustomed to interpreting what regression models may anticipate. The -2 Log Likelihood is an indicator of the over-all significance of the model, whether the model currently under consideration is accurate. The Wald statistics included in both tables is an indicator of the significance of each individual variable and comes with a corresponding significance level. The Wald statistic has a chi-squared distribution, and is used in just the same way as the *t* values for individual variables in linear regression.

4.7 Potential revenues for sustainable management of Sagada’s resources

Sagada stands to benefit from an increase in entrance fee in terms of having available funds for the management of its natural environment. The CV method can estimate the total value of an environmental good by multiplying the average WTP estimated from the survey by the total number of visitors to the site. Applying the highest bid amount that would pass an actual referendum (i.e., PhP150/visitor) to the total number of visitors who visit Sagada in year 2010, potential revenues from increased entrance fee could get as high as PhP3,604,508 annually. Using the mean WTP of PhP82.63 of local tourists will generate PhP1,985,599 per year, while using the mean WTP of PhP128.64 of foreign tourists can result in annual revenue of PhP3,091,219. If Sagada will implement a two-tiered or differentiated pricing system for local and foreign tourists, the estimated revenue is PhP2,209,438. The revenues that can be generated under the various scenarios described can be used for various programs dedicated to the preservation of Sagada’s natural and cultural heritage. The allocation

of the fund to various uses and the stakeholders involved in the administration of the fund are critical decision issues that may require further study.

Scenario	Number of visitors	WTP Value	Estimated Annual Revenue
Total visitors charged with highest bid amount	24,030	150	3,604,500
Total visitors charged with WTP of local tourists	24,030	82.63	1,985,599
Total visitors charged with WTP of foreign tourists	24,030	128.64	3,091,219
Two-tiered pricing system			2,209,438
Local tourists charged with their expressed WTP	19,165	82.63	1,583,604
Foreign tourists charged with their expressed WTP	4,865	128.64	625,834

Table 8. Potential revenues from WTP values under various scenarios.

5. Summary and policy implications

The study has drawn attention to the demand for nature’s services in Sagada and the benefits that accrue to both local and foreign tourists. The awareness of critical environmental issues and the ranking of priorities are indicative of tourists’ appreciation for a well preserved natural and cultural heritage. Local and foreign tourists expressed positive willingness to pay to ensure the protection and preservation of Sagada’s natural environment. This willingness reflects both use and non-use values attached by tourists, including the opportunity to enjoy Sagada again in the future and the knowledge that future generations can have the same opportunity to visit and enjoy the site.

The WTP estimates are indicative figures which can possibly be used in the determination of potential revenue source for environmental protection. One of the issues that have been debated for so long is how much should Sagada charge tourists who come to visit. The Tourism Council of the municipality imposes an entrance fee which at the same time serves as an environmental fee but the determination of the amount has been arbitrary. It should be noted that some of the fundamental causes underlying the loss or unsustainable use of natural resources reside in the fact that societies have failed to value correctly the environment and the goods and services it provides and sustains. Using CVM helps identify alternative methods to finance conservation by revealing costs and benefits that exist but may not be recognized by potential stakeholders. The estimated WTP approximates the value of nature’s services in Sagada and can be the

basis of a more rational fee for visitors. While the LGUs' fear that charging higher fees may drive tourists away is understandable, it should be pointed out that such a fee will only be a small amount compared to the total travel costs tourists incur to reach Sagada.

The stratification of the tourists into local and foreign categories can be further explored and pursued more intensively when Sagada is ready for a two-tiered pricing system in the determination of entrance fees. Likewise, the potential of having a pricing scheme per tourist spot/site should be considered. Those which need more maintenance and protection could possibly charge higher entrance fees. This type of disaggregated pricing versus the "blanket" type of one price for Sagada needs to be explored further.

This study only hinted on the management of potential revenue from charging of a rational entrance fee. A trust fund is proposed in the hypothetical program but the administration of the fund especially the allocation for various uses has to be studied extensively. Critical issues remain to be explored before the optimal policy for benefit value capture can be determined. These may cover policy procedures and processes for implementation including information sharing and consultation, and the administrative arrangements for implementation and enforcement. This could best be conducted through the responsible management authority to ensure that the environment and the community benefit the most. For Sagada, it is precisely the gifts of nature that hold the promise of its economic survival and the sustenance of future generations.

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NOTES

1. The public good nature of natural recreation parks creates free riders and over-usage problems which consequently lead to deterioration in quality.
2. Visitors to Sagada are required to register and pay twenty pesos as environmental fee to the local tourism office. This allows them to explore and consume the attractions of the place.
3. Various survey methods are possible, but in-person interviews though relatively expensive are generally held to produce the highest-quality WTP data as there is a need to explain clearly the required background information and the hypothetical scenario for valuation (FAO ESDP 146).
4. The Sagada Tourism Center reports that local tourism wildly fluctuates

throughout the year with the most people choosing to visit Sagada in April. Visitors during the peak period in 2010 were 2,186 in March, 4,645 in April, and 2,756 in May, for a total of 9,587. Of this figure, 18% were foreigners while 82% were local tourists.

The total number of visitors/tourists (n) included in the survey was determined using Slovin's formula as follows:

$$n = \frac{N}{1 + Ne^2}$$

where: n = sample size;

N = total number of visitors in the area during the months of March, April and May 2010

e = desired margin of error, 5% in this study

5. Haab and McConnell (2002) point out that many recreation demand models suffer from sample selection bias due to inappropriate sampling technique.
6. Before the actual implementation of the survey, courtesy calls to concerned local government officials were conducted. Permit letter from the city mayor was secured, in case such would be requested by the respondents. In addition, a guide was also requested from the village heads for each enumerator to facilitate the introduction to respondents and also for the delineation of area assignments. Before formally starting the interview, ethical protocols for CV surveys such as introduction of the implementing agencies, asking for the respondents' consent, mentioning the confidentiality clause, and explaining the purpose of the survey, were followed.
7. Except for the number of tourist arrivals reported by the Department of Tourism (DOT), there are no hard data on the visitors' profile (i.e., the tourists' length of stay, seasonality, type, activities, expenditures, purpose of visit and other pertinent data) and tourist products (i.e., the attractions of the place, accommodations, transport facilities and other amenities) in Sagada (Dulnuan 2003).
8. The dichotomous choice referendum format is the most accepted and commonly used method. According to Bateman et al. (2002), it has properties for incentive-compatible or truthful revelation of preferences which means that the respondent will not have an incentive to misrepresent his or her valuation of an environmental good. It is in the respondent's strategic interest to accept the bid if his WTP is greater than or equal to the price asked and reject it otherwise. Likewise, Berrens (2000) showed that evidence of a reluctant respondent effect is present in an open-ended elicitation format but not in a dichotomous choice elicitation format.

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