

**INTEGRATION OF ECOTOURISM IN SMALL-SCALE COASTAL FISHERIES:
LESSONS LEARNED IN HONDA BAY, PUERTO PRINCESA CITY,
PALAWAN, PHILIPPINES**

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ABSTRACT

This study examines the ecological and economic benefits derived in transforming a small-scale fishing village of Sta. Lourdes, Puerto Princesa City into a community-based sustainable tourism site catering to about 1,000 visitors a day during the peak season from February to May. The establishment of Honda Bay Boatowners Association was vital in this community's transformation. Before (Year 2007) and After (Year 2014) study method, which involved key informant interviews, household interviews, focus group discussion and site validation were used. Results indicate that the present condition of mangroves (+25%), beaches (+23%), and coral reefs (+14%) are progressively improving during the past seven years; however, seagrass beds (-2%) near the Sta. Lourdes Wharf are deteriorating due to oil spill from confiscated boats. There is a general view that the bay's reef ecosystem is gradually restored as dominant catch composition are reef-associated species such as Coastal trevally, Dusky batfish and Golden-lined spinefoot, among others. Majority of fishers' income source has shifted from fishing to tourist boat service. In 2007, fishing was the major source of income with 54% of boat owners and 61% of boatmen. However in 2014, tourist boat service has become the major income source of about 86% of boat owners and 93% of boatmen. A shift to higher income and more affluent material style of life is evident particularly on the part of boat owners. For inclusive economic growth, the association should establish spin-offs for the benefit of other community stakeholders.

Keywords: sustainable tourism; boatowners association; fishing

1. INTRODUCTION

Honda Bay is a vital waterway and a very important fishing ground located in the eastern coast of Puerto Princesa City, Palawan, Philippines. It has the characteristics of a passive secondary coast having sand bars and barrier islets. It is adjacent to the West Sulu Sea and one of the major fishing bays in the country. The bay was heavily exploited (Edralin et al., cited in USAID and FISH n.d.) before it became the city's key ecotourism destination. There were reportedly rampant use of illegal and destructive fishing gears and methods such as "baby" trawl, dynamite and cyanide.

The organization of Honda Bay Boat Owners Association, Inc. (HOBBAI) was regarded as a milestone in transforming this small-scale fishing village into a sustainable coastal tourism destination. Several published and unpublished reports have recognized that Honda Bay island hopping is a "success story" (Prajapati et al. 2007; Regoniel 2010). It was the first CBST project supported by the City Government of Puerto Princesa and assisted by

non-government organizations (NGOs) such as the ABS-CBN Foundation, Inc (AFI) and the Environmental Legal Assistance Center (ELAC).

In 2007, HOBBAI with financial assistance from AFI built a School in the Seas known as "*Dalubhasaan sa Karagatan* or *Dalub*," a floating structure with a roof shaped like a sea turtle at the edge of Pambato Reef (Regoniel 2010). This "*Dalub*" serves as learning platform for tourists on habitat and resource conservation before they are permitted go on snorkeling or diving along the reef areas of Pambato. A lecture on the species found in the reefs and demo on the proper use of diving gears by tourists are done in *Dalub*.

This study may contribute to reveal this CBST's success story in Honda Bay, so that people and organizations behind-the-scenes could continue sharing this model to other areas in the country. The CBST's goal is to provide economic opportunities and social benefits to the local people; conserve and sustain the use of natural resources; and develop new products and services to satisfy visitors' needs. The terms CBST and ecotourism are interchangeably used in this study.

Objectives

This study sought to assess the environmental impact and socio-economic benefits of integrating ecotourism in a small-scale fishing village of Sta. Lourdes, Puerto Princesa City. Specifically, it aimed to:

1. Evaluate tourism impacts on major coastal ecosystems in Honda Bay in the past seven years;
2. Assess fish catch composition; and
3. Describe the community-based sustainable tourism project benefits to boat owners, boatmen and the community.

Conceptual Framework

In the effort to assess environmental impact and socio-economic benefits of AFI ecotourism-assisted project in Honda Bay, Puerto Princesa City, the researchers used Before and After Study method described by Bayan Academy (2013) to compare the 2007 and 2014 statuses of boat owners, boatmen, and non-members of HOBBAI (Figure 1).

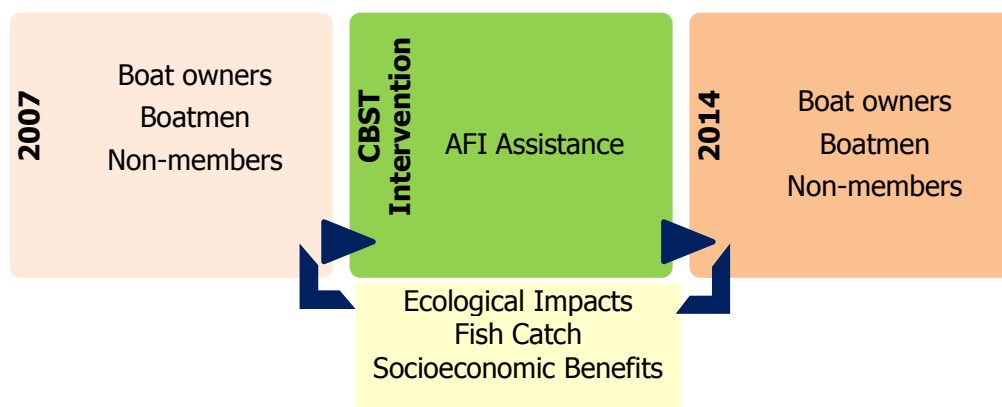


Figure 1: Before and After study method adopted from Bayan Academy (2013).

2. METHODOLOGY

Before and After Study method as described by Bayan Academy (2013) was primarily used in this study. This was complemented by the rapid rural appraisal (RRA) method (Pido et al. 1996; WorldFish Center 2010) using key informant interview (KII) and household interview (HHI). In addition, a visitor survey was conducted. Below is the number of respondents by type of instrument used (Table 1):

Table 1: Number of respondents by type of instrument used in Sta. Lourdes, Puerto Princesa City, Palawan.

Type of Instrument		n
1. Key informant interview (KII)		10
2. Household interview (HII):	Boat owners = 28	84
	Boatmen = 28	
	Non-members = 28	
3. Visitor survey		33
Total		127

Although to a limited extent, transect and global positioning system (GPS) were used during the field data gathering.

2.1 Data Gathering

Three survey instruments for KII, HHI and tourist satisfaction were developed by the Palawan State University (PSU) and approved by AFI before conducting this study. The questionnaires were prepared and structured with a combination of close-ended and open-ended questions designed to elicit information before and during HOBBAI operations such as the respondent demographic profile; household socio-economic profile; status of four major coastal ecosystems; awareness of AFI and benefits to own community; and tourist satisfaction.

Aside from using the survey questionnaires, the researchers conducted reconnaissance and fieldwork using transect and GPS. In addition, secondary data following the method by Bunce et al (2000) were used to supplement KII and HHI results of the CBST project.

2.2 Stakeholders' Validation

Initial findings were presented during the stakeholders' validation on 3 April 2014 at the HOBBAI Office in Barangay Sta. Lourdes. HOBBAI officials, AFI representative, PSU faculty and staff, and selected respondents participated in the workshop, during which the findings of the study were discussed and feedback were sought as to the accuracy and completeness of the data. Validated results were included in the final report to AFI.

2.3 Site Profile

Sta. Lourdes Wharf (09°50.6'N, 118°44.7'E) in Puerto Princesa City is the jump-off point for Honda Bay island hopping. The wharf is approximately 15 km from the city proper and is accessible 24/7 by all types of vehicles. HOBBAI is the sole provider of tourist boat service for island hopping activities in Honda Bay. There are five key destinations, namely Pambato Reef, Luli Island, Starfish Island, Pandan Island, and Cowrie Island (Figure 2).



Figure 2: Map of the Philippines (A) and Honda Bay island hopping destinations (B) in Puerto Princesa City, Palawan [Source: Google Earth]

3. RESULTS AND DISCUSSION

3.1 Environmental Impact on Major Coastal Ecosystems

There are four major coastal habitats or ecosystems that were directly or indirectly affected by Honda Bay island hopping activities, namely: mangrove, beach, coral reef and seagrass bed. The major ecosystems present in five key island-hopping destinations in Honda Bay, Puerto Princesa City are presented in Table 2.

Table 2: Coastal ecosystems present in five key island-hopping destinations in Honda Bay, Puerto Princesa City, Palawan.

Key Island Destination	Distance (n. mi)*	Major Coastal Ecosystems			
		Mangrove	Beach	Coral Reef	Seagrass
1. Cowrie Island	3.10	√	√	-	√
2. Luli Island	4.85	√	√	-	√
3. Pambato Reef	5.00	none	none	√	none
4. Starfish Island	9.80	√	√	√	√
5. Pandan Island	10.10	√	√	√	√

*From Sta. Lourdes Wharf (1 n. mi ≈ 1.852 km). Except for Pambato Reef, data on distance is taken from Puerto Princesa City Ordinance No. 383, s. 2008.

√ Present

Mangroves

Mangroves provide many ecological and economic benefits. The direct economic revenue of one-hectare (ha) healthy mangrove forest is at least PhP 40,000 (US\$ 1,000) per year, of which the fisheries value is at least half of it (Melana et al. 2000). The conditions of mangroves before (in 2007) and during (2014) the operations of HOBBAI as perceived by selected stakeholders (n=84) are presented in Figure 3.

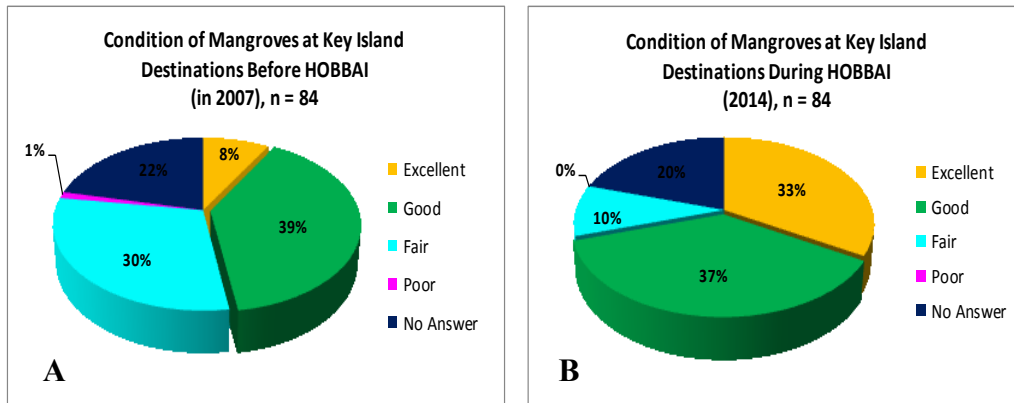


Figure 3: Conditions of mangroves at key island-hopping destinations, before HOBBAI (A) and during HOBBAI (B) in Honda Bay, Puerto Princesa City, Palawan.

In the overall perception of selected stakeholders (n=84), there is a 25% increase in the perception that the condition of mangroves is better (excellent) now as compared to its condition in 2007. This is attributed to HOBBAI members' mangrove reforestation project, presence of *bantay dagat*, resort owners' vigilance as well as cooperation and close coordination among stakeholders and local and national government authorities. Charcoal making from mangroves is strictly prohibited in the study area.

Beach

One of the main tourist attractions in Honda Bay is its beaches. The conditions of beach before (in 2007) and during (2014) the operations of HOBBAI as perceived by selected stakeholders are presented in Figure 4.

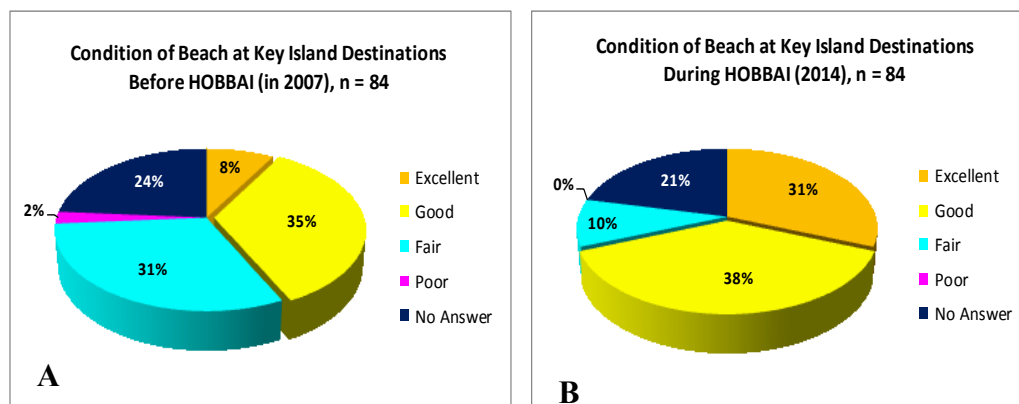


Figure 4: Conditions of beach at key island-hopping destinations, before HOBBAI (A) and during HOBBAI (B) in Honda Bay, Puerto Princesa City, Palawan.

In the overall perception of boat owners, boatmen and non-members (n=84), there is a 23% increase in the perception that the condition of island hopping beaches is better (excellent) now as compared with its condition in 2007.

Using the Emery method in beach profiling, beach slope in Cowrie Island was between 5 to 6 degrees; while it was 5 degrees in Starfish Island. This means that the two islands are relatively flat and are vulnerable to sea level rise. In addition, measurement of seawater turbidity using Secchi disc at three stations along Sta. Lourdes Wharf to Cowrie Island revealed a range between 3.25 m to 3.5 m depth, which is average in terms of water clarity. Oil spills from sunken ships near Sta. Lourdes Wharf are perceived threats to beaches and other major coastal ecosystems at Honda Bay.

Coral Reefs

As reported by the Sanctuary Management Board (n.d.), Pambato Reef harbors numerous coral species and sponges; of which the most common corals were table, branching, massive, mushroom, and foliose. The conditions of coral reefs before (in 2007) and during (2014) the operations of HOBBAI as perceived by selected stakeholders (n=84) are presented in Figure 5.

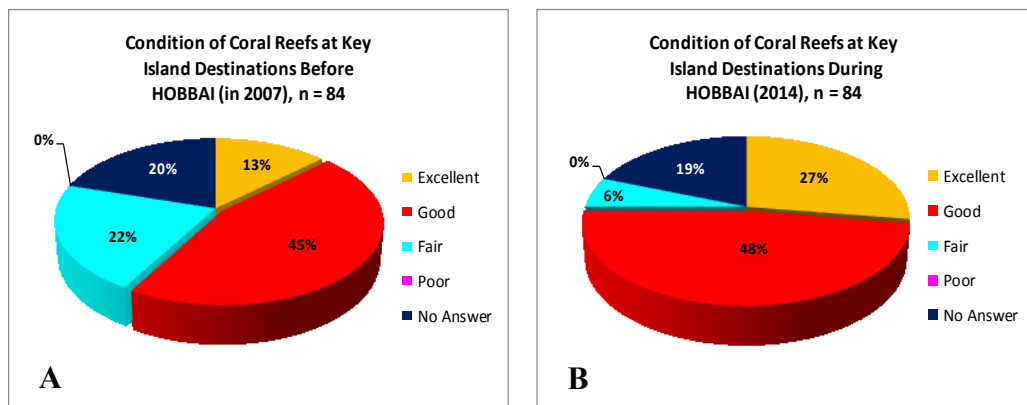


Figure 5: Conditions of coral reefs at key island-hopping destinations, before HOBBAI (A) and during HOBBAI (B) in Honda Bay, Puerto Princesa City, Palawan.

In terms of the overall perception of selected stakeholders (n=84), there is a 14% increase in their perception that the condition of coral reefs is better (excellent) now as compared to its condition in 2007. This is attributed to HOBBAI members' vigilance against illegal fishers, presence of *bantay dagat*, resort owners' vigilance as well as cooperation and close coordination among stakeholders and local and national government authorities. The use of dynamite and cyanide fishing in the study area had been stopped.

Seagrass Beds

Seagrass beds produced high levels of primary productivity second to mangroves (Whittaker, cited in DENR et al. 2001). Its uses were described by Deguit et al. (2004). The conditions of seagrass beds before (in 2007) and during (2014) the operations of HOBBAI as perceived by selected stakeholders (n=84) are presented in Figure 6.

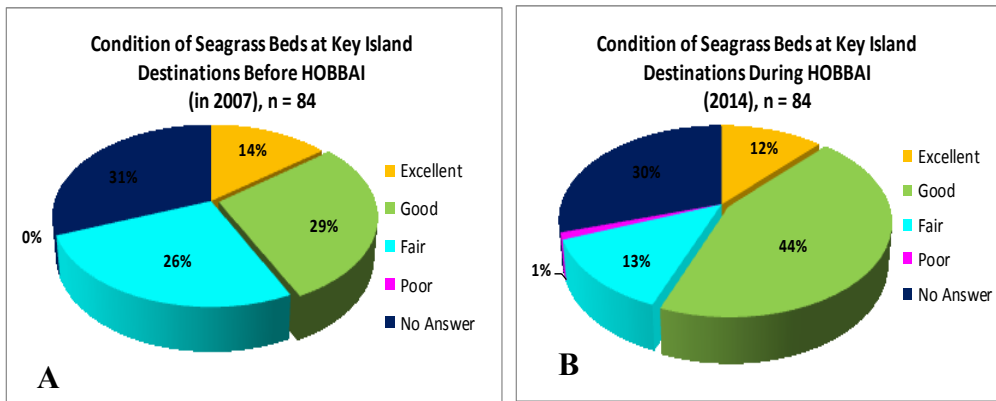


Figure 6: Conditions of seagrass beds at key island-hopping destinations, before HOBBAI (A) and during HOBBAI (B) in Honda Bay, Puerto Princesa City, Palawan.

As to the overall perception of selected stakeholders (n=84), there is a 2% decrease in their perception that the condition of seagrass beds has improved (excellent) now as compared to its condition in 2007. The slim margin (negative) in 'before' and 'during' conditions may mean that seagrass beds in Honda Bay are deteriorating and under threat by marine pollution.

3.2 Catch Composition by Type of Habitat

Most of the species caught in 2007 were nearshore pelagic fishes, which live and feed on planktons near the sea surface; while at present (2014), species caught are mostly reef-associated. Reef-associated species refer to fishes that are living and feeding on or near coral reefs. Figure 7 presents the catch composition by type of habitat for the years 2007 and 2014 in Honda Bay as per account of the respondents.

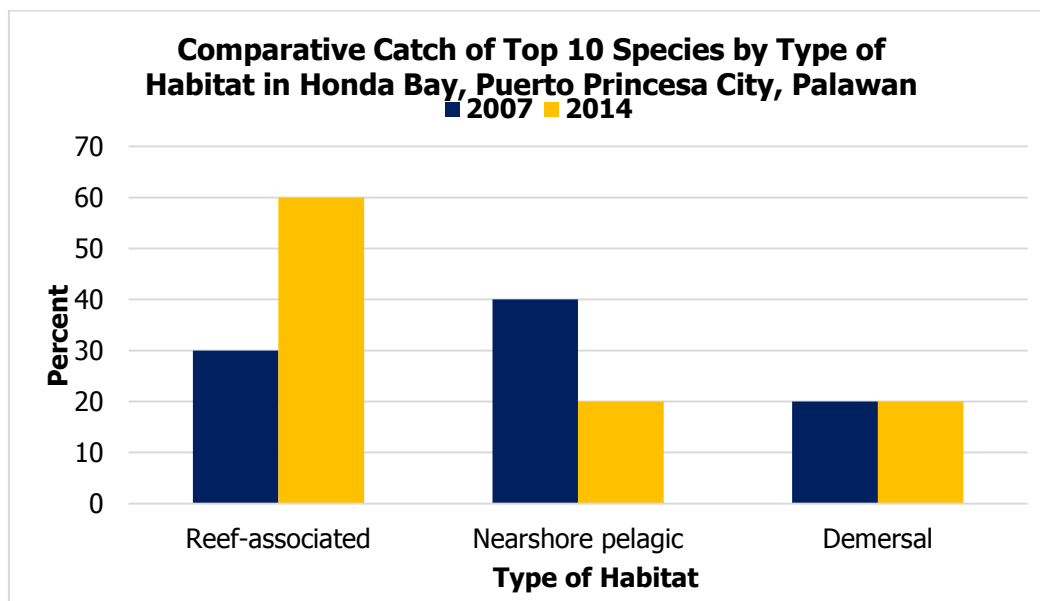


Figure 7: Comparative catch (2007 vs. 2014) of top 10 species by type of habitat in Honda Bay, Puerto Princesa City, Palawan.

The top 10 fish species caught by various gears in 2007 were Anchovy, Goldstripe sardinella, Threadfin bream, Trevally, Ponyfish, Spanish mackerel, Fringescale sardinella, Skipjack, Halfbeak, and Scad. In 2014, three pelagic species listed in 2007 were no longer in the top 10. These are Anchovy, Spanish mackerel, and Skipjack. They were replaced by reef-associate species such as Dusky batfish, Siganid, and an Inshore squid.

3.3 Community-Based Sustainable Tourism Project Benefits

Aside from environmental benefits, the project had benefited HOBBAI and the community economically. As perceived by stakeholders, HOBBAI members have bigger economic benefits than that of the community at 45% and 37%, respectively. Figure 8 presents the economic benefits of the project to HOBBAI and the community.

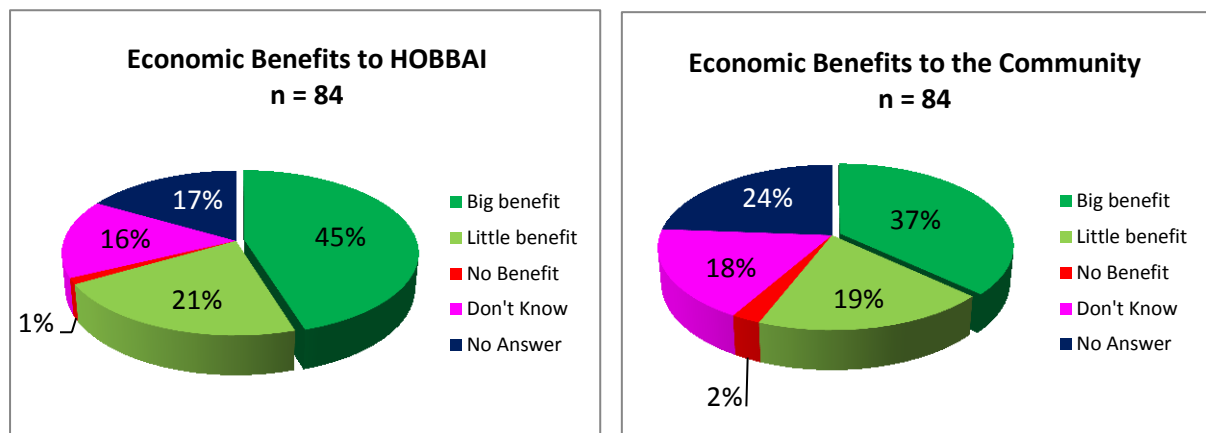


Figure 8: Economics benefits of the community-based sustainable tourism project in Honda Bay, Puerto Princesa City, Palawan.

4. CONCLUSION

As far as environmental impact and socio-economic benefits are concerned, the AFI ecotourism-assisted project to HOBBAI is successful. This is anchored on the declaration of Pambato Reef as marine sanctuary and the subsequent protection of other reef areas in Honda Bay, which effectively prohibited the use of destructive fishing methods and reduced fishing pressure.

5. RECOMMENDATIONS

The researchers are recommending the following:

1. For an inclusive economic growth, the association should establish spin-offs for other community stakeholders.
2. The Honda Bay's CBST best practices are to be shared to other island destinations in the country, particularly in marginal fishing villages.

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