

Assessing the feasibility of expanding dive tourism to Danajon Bank, Philippines

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A thesis
submitted in partial fulfillment of the
requirements for the degree of

Master of Marine Affairs

University of Washington
2012

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Program Authorized to Offer Degree:
School of Marine and Environmental Affairs

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Abstract

Assessing the Feasibility of Expanding Dive Tourism to Danajon Bank, Philippines

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Danajon Bank is the only double barrier reef in the Philippines. Found off the northern coast of Bohol Island, central Philippines, Danajon expands over an area of 272 km². The Coastal Conservation and Education Foundation, a Filipino nonprofit, is implementing a project to develop a management plan for Danajon Bank. One of the goals is to increase the economic opportunities for the coastal communities adjacent to the Danajon reefs through marine-related tourism. This study examined the feasibility of expanding dive tourism to this area. The results were derived from two methods: (1) semi-structured interviews with dive business owners and employees; and (2) contingent valuation survey among foreign and local tourists to determine willingness-to-pay an entrance fee to the reefs as a dive destination. The key results are: (1) there are challenges that may arise for attracting dive tourism to the outer Danajon Bank such as the sites location, safety and quality; (2) opportunities that can help aid in the expansion of dive tourism in Danajon include dive business interest in new sites and opportunities for dive stops when traveling through the region of Danajon when on safari dive trips; (3) dive operators are willing to provide time, labor and equipment to aid in conservation projects; and (4) resource user fees will be the best opportunity for creating economic opportunities for local communities in the region from tourism.

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ACKNOWLEDGEMENTS

I would like to thank my advisor and committee chair Dr. Patrick Christie of the School of Marine and Environmental Affairs and Jackson School of International Studies at University of Washington. Thank you for sharing your extensive knowledge, experiences, and enthusiasm in the field of marine and of coastal management.

I would like to thank my committee member Dr. Giselle Samonte-Tan, Director for Social Science Research and Outreach at Conservation International. Thank you for your guidance and support in the field and during the writing process.

Thank you Liza Eisma-Ororio, Executive Director of the Coastal Conservation and Education Foundation and Jun Amolo, Project Manager, for the opportunity to be a part of the Collaborative Effort to Manage a Large Marine Protected Area project. I would also like to thank all of the CCEF staff for their generous welcome and hospitality throughout my stay in the Philippines.

My gratitude for financial support from the Wendy Graham travel grant, making traveling to the Philippines possible.

Lastly, I would like to thank my parents Robert and Mary Dee Kuklok for your never ending support and always encouraging me to live my dreams. To my sister, friends and SMEA colleagues for words of encouragement and support when needed, I am truly grateful.

Introduction

Coral reefs are critical habitat encompassing one fourth of all known marine species despite covering only one percent of the earth's surface (Burke et al., 2011). Found in more than 100 countries worldwide coral reefs cover an estimated 250,000 km² of ocean (Burke et al., 2011). They are not only a source of biodiversity, but provide valuable goods and services such as food security, environmental protection, carbon sequestration, waste assimilation, recreation, and livelihoods for millions of people around the world (Molberg and Folke, 1999). Local threats including over fishing, pollution, and unsustainable practices along coastlines has resulted in the degradation of at least 40 percent of the world's coral reefs over the past 50 years (Hoegh-Guldberg, 2011). The World Resource Institute estimates that by 2030, with the added global threat of climate change, 90 percent of the world's reefs will be threatened and 60 percent will be facing high or critical threat levels to their survival (Burke et al., 2011).

The Coral Triangle refers to the tropical marine waters of Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands, and Timor-Lester identified as having high marine biodiversity. The Philippines, located within the Coral Triangle, has been identified as the epicenter of marine fish biodiversity for the planet (Carpenter and Springer, 2005). Located in the Western Pacific amongst the most diverse coral reefs in the oceans, the Philippines is comprised of 7,107 islands, 36,289 km of coastline and 26,000 km² of coral reefs, approximately harboring 8 percent of the world's total coral reef ecosystems (Shuman et al., 2004). Coral reefs provide valuable food, environmental protection, and livelihoods for the majority of the Philippine coastal population (Christie et al., 2006). However, coral reefs are being degraded across the Philippines. It is measured that 70 percent are in a poor state and only 5 percent of the total coral reefs in the Philippines are considered to be in "excellent" condition (Gomez et al., 1994; White et al., 2002b). As coral reef conditions decline, so does the value of their goods and services.

Marine Protected Areas in the Philippines

A central issue for the management of coastal and marine resources in the Philippines is the decline in productivity of coastal ecosystems providing essential food and livelihoods to coastal inhabitants (Courtney et al., 1999). Fisheries are being overexploited and fish catches are declining, even with an increase in commercial vessels and municipal fishers, production is static

(White et al., 2002a). Reef fisheries have been estimated to contribute 30 percent of the total national municipal fisheries productions. However, Philippine catch rates are some of the lowest in the world, due to overexploitation and destructions of reef habitat (Alino et al., 2004). It has been estimated that coral reefs alone contribute at least USD 1.35 billion to the Philippine economy annually (White et al., 2002b). This estimate could be increased with improved management.

Marine protected areas (MPAs), which are areas where fishing and other activities are prohibited or controlled, is one management tool being implemented in the Philippines for managing coral reef resources (Lowry et al, 2009). There are many kinds of MPAs, with no consensus on the various terms which include: no take zones, marine sanctuaries, marine reserves, and marine parks (Alino et al., 2004). MPAs vary in size, although one study recommends the protection of at least 20 percent of the total marine area (Alcala et al., 2004). In reality, this is not always possible for areas where space is limited or in developing countries where it is difficult to set aside large areas for conservation (Alcala et al., 2004). Fully protected MPAs are areas that are completely protected from fishing, extraction, and harmful human activities. No-take MPAs are MPAs that are protected from fishing, but not necessarily other harmful non-extractive uses (Alino et al., 2004).

The primary goal of MPAs is to improve the ability of reef fish to grow and mature for enhanced reproduction and spill-over of larvae and adult fish to adjacent areas outside the reserve (Lowry et al., 2009). The secondary objectives are to enhance livelihood opportunities and related economic activities associated with MPAs (Lowry et al., 2009). The successfulness of MPAs in achieving these two goals is debated, partly due to a lack of research (Russ et al., 2004). Russ et al. (2004) found that fish catch rates increased and fishing effort decreased in the case of Apo Island no-take marine reserve in the Philippines over a 20-year study. This study shows that the benefits from MPAs do not just increase fish yields, but there is an improvement in food security and cash income from tourism opportunities for the people who are connected to the MPA (Russ et al., 2004). Studies have shown benefits from MPAs, though the literature has not been able to show indisputably that MPAs generate a spillover of fish to adjacent fishing areas (Russ et al., 2004).

MPAs have been established as a management tool in the Philippines since 1974 (White et al., 2002a). Decentralization of authority over marine resources from the national government to local governments has facilitated MPA development in the Philippines (White et al., 2002a). The enactment of the Local Government Code (LGC) of 1991 and the Fisheries Code of 1998 redefined coastal and fishery management roles, giving more power to municipal governments. The Bureau of Fisheries and Aquatic Resources (BFAR) was the governmental institution responsible for the management of all fishery resources prior to the LGC of 1991. BFAR's mandate within municipal waters is now limited to technical assistance to local governmental units (LGUs). BFAR is responsible for managing commercial fisheries beyond municipal waters (Department of Agriculture-Bureau of Fisheries and Aquatic Resources, 2004).

The LGC of 1991 gives more power, authority, and responsibilities to LGUs in the planning, regulation, legislation, enforcement, revenue generation, and monitoring of their environment and natural resources (White et al., 2002a). The LGC gives authority to the LGUs to manage their coastal and marine resources out to 15 km off shore. Municipal MPAs, reserves and sanctuaries can only be established through municipal ordinance and do not need national governmental approval. This is one reason why there has been a large number of MPAs developed in the Philippines (White et al., 2002a).

The Fisheries Code of 1998 provides a framework for the management of Philippine fisheries and reaffirms the jurisdiction of municipal governments over municipal waters (White et al., 2002a). It also gives LGUs the authority to prohibit or limit fishery activities in overfished areas, supporting the establishment of MPAs and authorizing the LGUs to manage areas as MPAs (White et al., 2002a). The Fisheries Code of 1998 requires the designation of at least 15 percent of municipal waters as fish refuges or sanctuaries and allows 25-40 percent of fishing grounds to be established as mangrove reserves (Alino et al., 2004).

MPA projects are not only being implemented by the government, but non-governmental organizations (NGOs), people's organizations (POs), research institutions, and multilateral and bilateral donor organizations as well (White et al., 2002a). Currently there is an estimated 1,000 MPAs of various kinds in the Philippines covering 15,000 km² of ocean (Lowry et al., 2009). Approximately only 20 percent are achieving their management goals (Lowry et al., 2009).

Danajon Bank

Danajon Bank is located off the northern coast of Bohol Island in central Philippines. Danajon Bank is unique being the only double barrier reef in the Philippines and only one of three in the Indo Pacific (Armada et al., 2009). A barrier reef is a reef system which runs parallel to the shoreline, forming a wide lagoon environment between shore and the reef. Danajon Bank contains two large reef systems that run parallel to each other, comprised of three large reefs, clusters of small reefs, and 40 small islands. Danajon Bank spans 130 km covering a total area of 272 km² (Figure 1). The outer reef contains Caubiyán reef which is the largest, covering 143 km², and five smaller reefs located 11 km off the northern coast of Bohol. The inner region consists of one large reef, Calitubas, separated from shore by a 2 km wide channel. Danajon Bank makes up one percent of the total coral reef area in the Philippines (Christie et al., 2006).

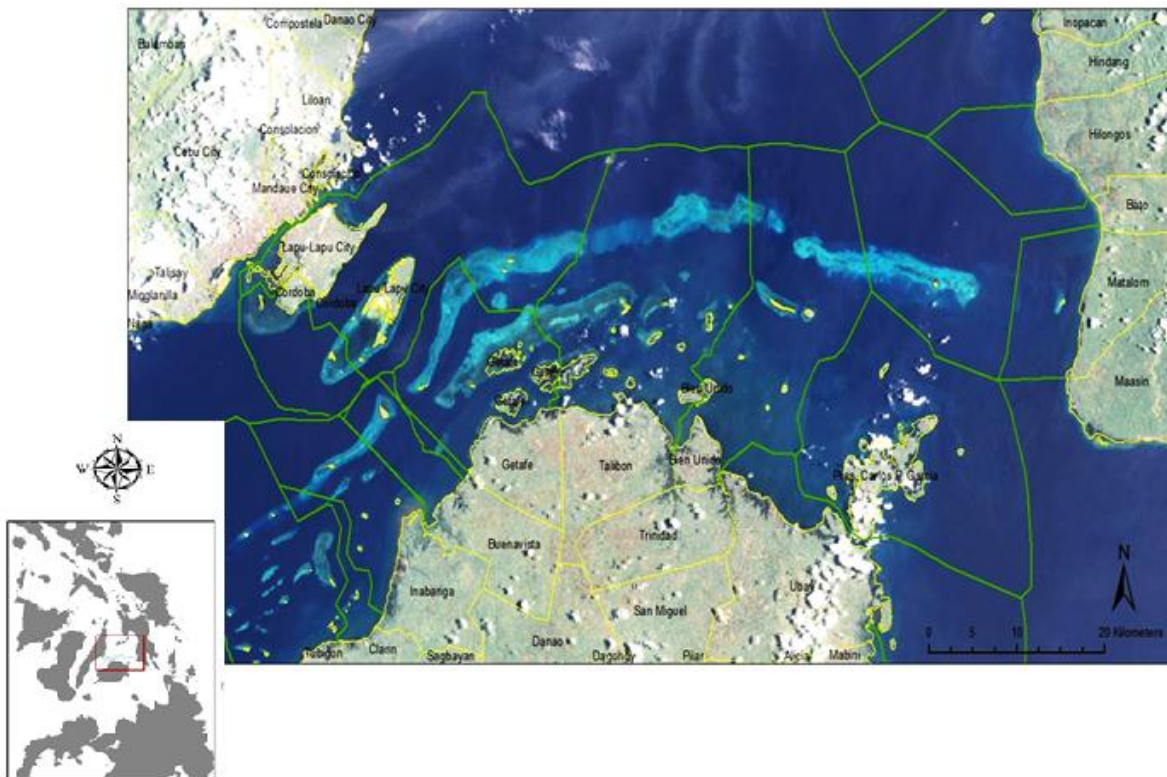


Figure 1: Map of Danajon Bank Double Barrier Reef and surrounding municipalities with jurisdiction (Coastal Conservation and Education Foundation, 2011).

Danajon Bank is comprised of 17 municipalities which cover four provinces and two administrative regions (Table 1). Of the four provinces (Cebu, Bohol, Leyte and Southern Leyte) northern Bohol contains 10 of the 17 municipalities, and people in this region are in

closest proximity to Danajon Bank and its reef resources. Coastal municipalities adjacent to Danajon Bank such as Tubigon (539 persons/km²), Talibon (305 persons/km²), and Bien Unido (494 persons/km²) are more densely populated than the average density for Bohol (282 persons/km²). High population density has the potential to impact reefs in various ways, including sedimentation and pollution due to human disturbances, high fishing pressure, and poverty (Fisheries Improved for Sustainable Harvest, 2010).

Table 1: Municipalities with jurisdiction over Danajon Bank

Province	Municipality
Bohol	Tubigon Clarín Inabanga Buenavista Getafe Bien Unido Trinidad Ubay Pres. Carlos P. Garcia Talibon
Cebu	Lapu-Lapu City Cordova
Leyte	Matalom Bato Hilongos Hindang
Southern Leyte	Massin City

Livelihoods are limited in these coastal communities of Bohol. Approximately 50 percent of the population in coastal and island villages is engaged in fishing. It is estimated that there are 28,249 fishers in the Danajon Bank region (Armada et al., 2009). The Danajon Bank coral reefs provide habitat for associated and offshore pelagic and demersal fisheries and has attracted an increasing population of fishers and marine resource dependent communities (Armada et al., 2009). Only 5 percent of the inhabitants in northern Bohol own agricultural land. There is also a high unemployment rate; some communities as high as 20 percent of the labor force is unemployed (Fisheries Improved for Sustainable Harvest, 2010).

Christie et al. (2006) estimated that over 60 percent of the coastal inhabitants of northern Bohol live below the poverty line of PhP 6,000 (USD 150.00) per month. Poverty drives fishers to catch smaller fish and use destructive methods. Poverty also reduces the capacity of people to change their behavior to more sustainable livelihoods (Fisheries Improved for Sustainable Harvest, 2010). Cyanide and dynamite fishing are two destructive fishing methods still used in Danajon Bank, even though they are illegal. Dynamite yields the highest Catch Per Unit Effort (CPUE) of the 44 different fishing gears used at 17.5 kg of fish per person per hour (Christie et al., 2006). This method of fishing might provide short-term income, but it reduces catch rates over the long term because it destroys habitat (Green et al., 2003). Dynamite fishing results in fragmented coral rubble that creates a habitat that is unsuitable for fish recruitment. In the Philippines studies have shown that blast sites show no hard coral recovery 20-30 years post blasting (Raymundo et al., 2007). With low hard coral cover the reef cannot provide food and shelter for marine organisms, which will result in the collapse of coral reef fisheries in blast sites (Pet-Soede et al., 1999). Over time it has been observed that CPUE rates have decreased due to depleting fish stocks (Fisheries Improved for Sustainable Harvest, 2010).

Though coral diversity in Danajon Bank remains high, the actual living coral cover is low. The average live coral cover is only 25 percent in the inner reef on sites surveyed (Christie et al., 2006; Fisheries Improved for Sustainable Harvest, 2010). Marcus et al. (2007) found that benthic conditions are poor in the inner reefs of Danajon Bank, consisting of 32 percent rubble, 28 percent sand or silt, 9 percent dead coral, and 12 percent live coral. The study also showed that there was a 16 percent increase in coral rubble between 2000 and 2003, the probable cause being dynamite fishing (Christie et al., 2006). Surveys completed in 2004 showed that commercially important fish species were rare on most of the reefs studied, and the overall fish cover of reefs was low by Philippine standards, the maximum fish counted per 500 m² was 800 (Fisheries Improved for Sustainable Harvest, 2010). Lucas (2010) found coral conditions from seven sites sampled on the outer reef to be in fair condition at depths of 6-16 m. Total reef fish densities of the sites sampled on the outer reef were found to be of moderate abundance, with coral health indicator species densities classified at low levels for all seven sites (Lucas, 2010). The overall sizes of fish sampled were small in size (0-10 centimeter class) and were generally of low commercial value (Lucas, 2010).

Management of Danajon Bank

Fishery management has been difficult in Danajon Bank, primarily because of the large, poor population scattered on remote islands, which relies heavily on fishery resources (Coastal Conservation and Education Foundation, 2011). Progress towards coastal management has been inconsistent around the Danajon Bank region primarily due to past coastal management projects not encompassing all municipalities (Armada et al, 2009). Over the past decade officials continue to take steps towards improved management by collaborating with many partners. Partners which have been involved in the coastal management initiatives for regions of Danajon Bank include the Haribon Foundation, Project Seahorse Foundation, Local Government Development Foundation (LOGODEF), Feed the Children, Coastal Resource Management Project (CRMP) and the Fisheries Improved for Sustainable Harvest (FISH) project funded by United States Agency for International Development (USAID), Bohol Environmental Management Office (BEMO), Japan International Cooperation Agency (JICA), Southeast Asian Fisheries Development Center (SEAFDEC) and Community-Based Resource Management Program of the Department of Finance (DOF).

In 2002, a Danajon Bank Management Council was formed with the objective of addressing governance problems, the use of destructive fishing gears, and establishing new community based MPAs (Fisheries Improved for Sustainable Harvest, 2010). In 2003 the FISH project was implemented with the purpose of increasing fish stocks by 10 percent by 2010. Danajon Bank was one of the four sites that the FISH project was working in the Philippines (Armada et al., 2009; Fisheries Improved for Sustainable Harvest, 2010). One tool that the FISH project was implementing was MPAs. In sites where MPAs were already established, the project focused on improving their management and enforcement (Fisheries Improved for Sustainable Harvest, 2010). Over 30 community-based and municipal-based MPAs are found in Danajon Bank (Christie et al., 2006). Management has focused on the inner reef up until this point, and improvements have been seen (Fisheries Improved for Sustainable Harvest, 2010). Currently, the Coastal Conservation and Education Foundation (CCEF), with funding from USAID, are developing the *Collaborative Effort to Manage a Large Marine Protected Area* project to develop a management plan for the outer reef.

The Coastal Conservation and Education Foundation

Founded in 1998, CCEF is a local NGO based in Cebu City in the Philippines which focuses on practical methods of participatory, community, and local governmental-based coastal resource management (Coastal Conservation Education Foundation, 2012a). CCEF works to improve the quality of life of coastal communities through services. The *Collaborative Effort to Manage a Large Marine Protected Area* project is one of CCEF's current projects (Coastal Conservation Education Foundation, 2012b).

The project plans to expand the existing MPA network to establish a 6,000 hectare Danajon Bank Marine Park that encompasses the outer reef. The project planning document sets the goal of a 1000-3000 hectares no-take area within the park. If successful, this will represent the first collaboratively planned large scale MPA in the Philippines. The project's overall goal is to "enhance the quality of life for resource dependent stakeholders in Danajon Bank through effective management of a large scale MPA, improved conditions of habitats and fisheries, and establishment of economic development opportunities" (Costal Conservation Education Foundation, 2011). The project's objectives are to:

1. Establish a Danajon Bank Marine Park Governance Framework.
2. Establish the Bien Unido Double Barrier Marine Park, a large-scale MPA within the outer reef of Danajon Bank to restore marine habitats and address overexploitation of fish stocks.
3. Enhance livelihood options through secure food sources and tourism economic opportunities.

The focus of this report is on the third objective: to enhance livelihood options through tourism economic opportunities. The double barrier reef has potential to attract divers and eco-tourists from around the world (Christie et al., 2006). The LGUs along with the provincial government have the goal of making Bien Unido of Bohol Island a prime eco-tourism destination in the country, making tourism their main economic development strategy (Costal Conservation Education Foundation, 2011).

Tourism

Tourism is a process involving tourists and the people and places that they visit, particularly the environment and its natural and cultural resources (Miller et al., 1991). Tourism is a major economic sector worldwide and often plays a significant role in the economy of poor

countries (Torres and Momsen, 2004). In 2011, global tourism grew 4 percent, with international tourist arrivals equaling 980 million and generating 919 billion US dollars from consumption expenditure or payment for goods and services from foreign visitors (World Tourism Organization, 2012). Tourism is expected to grow another 3-4 percent in 2012 (World Tourism Organization, 2012).

Tourism can create positive economic, environmental, and social impacts in the environmental and social setting where tourism activities take place (Huttche et al., 2002). Positive economic impacts of tourism include economic growth, increasing employment opportunities, creating jobs, and raising the standard of living. Positive environmental impacts include protection for selected natural environments and preservation of historical buildings and monuments (Kreag, 2001). Positive social benefits may include improved quality of life, cultural exchange, and improved understanding of different communities for both tourists and individuals living in the tourist destination (Kreag, 2001).

Though there are a number of positive effects of tourism, tourism is often criticized for negative impacts that occur. Negative economic impacts can include increased prices of goods, services, housing, and therefore an increase in the cost of living for locals. Increased imported labor from outside a community and greater competition for resources and land can become issues in tourism development resources (Kreag, 2001). The loss and degradation of undeveloped and agriculture land for tourism development, increased pollution, water shortages, and introductions of exotic species due to tourism activities can have negative impacts on the environment. Negative social impacts in tourist destinations may include increased crime, drinking, gambling, drugs, overcrowding, and unwanted lifestyle changes. There might be negative changes in traditional values and customs, and locals may be excluded from natural resources (Kreag, 2001).

Tourism has been identified as a contributor to greenhouse gas emissions, accounting for approximately 5 percent of the global emissions of carbon dioxide (United Nations World Tourism Organization et al., 2008). Carbon emissions may be higher in tourist destinations compared to their resident populations due to tourist's reliance on air travel and the development of energy-intensive technologies, accommodations, and facilities (Dwyer et al., 2010). It is predicted that emissions from global tourism will increase by 150 percent by 2035 compared to 2005 levels (United Nations World Tourism Organization et al., 2008).

Portions of the tourism sector has transformed over the years in response to the negative outcomes that can arise. In the mid-1980s, “green” tourism, eco-tourism, and community tourism became a rapidly growing interest amongst decision makers, practitioners, and advocates with the objective of better protecting the natural environment from tourism activities (Ashley et al., 2000). There is still a push to make tourism environmentally sustainable, but now there is a push to make it “pro-poor”. By definition, pro-poor tourism involves interventions to address poverty with an overall net benefit to the poor members of a community through tourism development (UN Economic and Social Council, 2005). At the Millennium Summit in 2000, the United Nations identified poverty as one the biggest global challenges, setting forth the Millennium Development Goals to eradicate extreme poverty by 2015. The World Tourism Organization (UNWTO) launched the Sustainable Tourism-Eliminating Poverty Initiative as an approach to tourism development and management where tourism benefits are directed towards the poor (World Tourism Organization, 2012).

Marine Tourism

Marine tourism is the fastest growing tourism sector (Hall, 2001). Marine tourism can be the most important economic activity for island and coastal communities, such as in the Philippines (Miller, 1990; Orams, 1999). One important characteristic which separates marine tourism from other types is that it takes place in an environment where people do not live and are dependent on equipment to access it (Orams, 1999). A large contributor to the increase in marine tourism interests is the creation of new recreational activities and invention of new technology, allowing more and more people to visit and experience the marine environment (Townsend, 2003). The self-contained underwater breathing apparatus (SCUBA) may be one of the most important inventions impacting marine tourism. Scuba diving has made the underwater world accessible to people, resulting in a multi-billion dollar industry (Orams, 1999; Townsend, 2003). Scuba diving has increased understanding and interests of the marine environment, changing people’s perceptions of the sea from alien and inhospitable to fascinating, enjoyable, and accessible (Orams, 1999).

Scuba diving can create negative impacts to the marine environment if poorly managed. Diver impacts include anchor damage from boats, breaking of corals by divers, and reef flat trampling when accessing the reef. Barker and Roberts (2004) found that most diver contact

with the reef occurred from fin kicks. Camera users, male divers, and inexperienced divers were more likely to cause reef damage when diving, and damage was most likely to occur during the first 10 minutes of the dive (Barker and Roberts, 2004; Jobbins, 2006). It is believed however that it is a minority of divers who are responsible for the majority of reef damage (Barker and Roberts, 2004).

One way diver impact can be mitigated is through diver education. Medio et al. (1997) found that a 45 minute briefing of divers prior to diving resulted in reduced rates of reef contact. Barker and Roberts (2004) found that short briefings had negligible results on reef contact but the intervention of dive leaders during dives was effective in reducing diver impacts to the reef. Divers do negatively impact coral reefs, but diver impacts on reefs appear to be less significant than impacts from pollution, illegal fishing, and global warming (Townsend, 2003).

Philippine Tourism

Tourism is a growing industry in the Philippines. More than 3.5 million visitors traveled to the Philippines in 2011, a 12.5 percent increase from 2010 (Department of Tourism Philippines, 2012). The top five origins of visitors were Korea, the United States, Japan, China, and Taiwan. The East Asian region contributed 47.5 percent of the total arrivals, with Korea being the highest with 839,111 visitors (Department of Tourism Philippines, 2012). Between the years of 2000-2010, tourism accounted for 5.8 percent of the Gross Domestic Product, contributing PhP 518.5 billion (USD 11.5 billion) in 2010 alone representing a 13 percent increase from 2009 (National Statistical Coordination Board, 2012). Tourism generates over 5 million jobs within the 100 million population in the Philippines (White and Rosales, 2003). The Filipino culture is favorable towards tourism, since English is commonly spoken, the level of education is high compared to developing country standards and Filipinos are service oriented, friendly, and hospitable (White et al., 2002b).

Dive tourism is a major driver for economic development in many parts of the Philippines. It has also become a major driver for coastal conservation and environmental protection efforts (Lucas and Kirit, 2009). It has been estimated that one km² of healthy reef in the Philippines that has tourism potential produces annual net revenues ranging between USD 29,400.00 to USD 113,000.00 (White et al., 2000; White et al., 2002b). Maintenance of coastal

and marine ecosystems is important since a large portion of tourists are coming for the coastal and marine attractions, which contribute greatly to the Philippine economy.

Tourism in Danajon Bank

Bohol Island is a popular tourist and dive destination. In 2010, 102,930 foreign tourists and 231,282 domestic tourists traveled to Bohol, a 6 percent increase from the previous year (Department of Tourism Philippines, 2012). The majority of the tourism development and attractions are located in southern Bohol. There are few tourist attractions in northern Bohol which remain fairly untapped by tourists (Christie et al., 2006).

Bien Unido is one northern Bohol municipality taking initiative to attract tourists. In 2009 Bien Unido secured a PhP 9 million loan from the Land Bank of the Philippines to develop a dive tourism enterprise with the goal of improving the economic condition of the municipality through dive tourism on Danajon Bank (Coastal Conservation and Education Foundation, 2011). Funds were used to build accommodations, a dive shop, and to acquire dive equipment and gear. The municipality also established the Bien Unido Reef Marine Park in 2009 with a municipal ordinance (Coastal Conservation and Education Foundation, 2011). The New Bien Unido Dive Camp (opened fall 2012) has been unable to effectively attract many tourists to the region and Danajon Bank thus far. In nine months, 25 individuals have gone diving with the dive shop and less than that have actually stayed at the guest house (pers. communication, Bien Unido Dive Camp informant, 2011).

Though Bohol is closer in distance to Danajon Bank, tourism from Cebu can also access the Bank. In 2010, 712,400 foreign tourists and 1,059,834 domestic tourists traveled to Cebu, a 9.6 percent increase from 2009 (Department of Tourism Philippines, 2012). On Cebu, the main tourist destination is Mactan Island, located just east of Cebu City. The 70 km² island is connected to the mainland by two bridges. Mactan Island is where the international airport for Cebu province is located, providing easy access to nearby tourists destinations. Mactan Island is well-known for its marine based tourism industry and is considered the second most popular tourist destination in the Philippines after Manila (Wong, 1999). Mactan has over 40 resorts and hotels, countless dive shops, and over 10 dive sites just offshore. Dive shops also offer safari dive packages for clients to access the farther dive sites of Malapascua, Southern Leyte, Southern Bohol, and Dumaguete. Mactan Island is the tourist center that is closest to Danajon Bank.

Tourism and Marine Protected Areas

Marine tourism is often seen coupled with MPAs. With coastal areas heavily visited by tourists, MPAs are one of the key tools to conserve and protect marine and coastal resources (Halpenny, 2003). A MPAs ability to conserve marine and coastal biodiversity is often restrained by lack of funding. Milne and Christie (2005) found that the lack of funding for coastal management projects in Batangas, Philippines, was due to it not being a priority of the LGUs and other agencies and to the administrative mismanagement of funds. Global estimates suggest that 70-80 percent of MPAs that have been established worldwide are protected only on paper and are not actively managed (Halpenny, 2003). Government agencies, especially in developing countries, often lack funding, therefore alternative sources of revenue are needed (Halpenny, 2003). Tourism can be an alternative source of revenue for MPAs. User fees are one source of funding for MPAs, where tourists pay a fee in order to dive or snorkel in a protected area. When fees are collected effectively, they have the potential to provide significant funds to MPA managers and operations.

The other economic significance of tourism through MPAs is the potential for providing revenue to local communities. An increase of tourists to an area provides an increased market for the sale of goods, services, and new businesses (Townsend, 2003). This provides communities with options for alternative or supplemental livelihoods. Local communities should benefit as partners and tenants of sustainable tourism and MPAs. Too often ownership and profit making by governments, expatriates, and the non-local business sector has become the model of tourism in the developing world (Townsend, 2003).

Important criteria in developing marine tourism as part of MPA operations are having appropriate settings, resources, and planning and management (Halpenny, 2003). Attractions need to be located in viable tourist destinations with access to markets and 'world class' products and experiences for tourism to work as an income generation activity for MPAs. If places are too remote and lack adequate services, they will not attract tourists (Halpenny2003). For MPAs and tourism to be successful and sustainable, there needs to be adequate resources, both of financial and intellectual capital (Halpenny, 2003). Planning and management involves collaboration and information sharing between stakeholders. Collaborating amongst stakeholders representing different fields who have different interests can result in a more holistic approach to policy making that can promote sustainability (Halpenny, 2003). It is vital

to identify and involve key stakeholders early in the project's development and planning; failure to include them in the design stage can lead to difficulties during the implementation stage (Jamal and Stronza, 2009).

Tourism Stakeholder Interactions

One framework that can be used to portray the interaction between the different stakeholders involved in tourism related activities is the Broker-Local-Tourist (BLT) Model of Tourism designed by Miller and Auyong (1991). The model consists of three main components; the brokers (B), locals (L), and tourists (T). There are three different types of brokers. Public sector brokers are public servants who are engaged in the governance and management of tourism. Private sector brokers are those who are engaged in the business of tourism and provide touristic services and sell touristic products. The third type is civil society brokers, such as non-governmental organizations and non-profits who have initiatives that address tourism related issues. Locals are individuals who are not engaged in tourism related activities, but live or work in the same destination, and tourists are people who travel to the touristic destination (Miller, 2003). The stakeholders involved in this project are identified in Table 2.

Table 2: Brokers, locals and tourists involved in expanding dive tourism to Danajon Bank

<p>Brokers</p> <p>Public Sector Brokers <i>Bantay Dagat</i> (Sea Patrol) Bureau of Fisheries and Aquatic Resources Department of Environmental and Natural Resources Department of Tourism Local Governmental Units Philippines Commission on Sport SCUBA Diving Philippines Tourism Authority</p> <p>Private Sector Brokers Dive business owners/employees Hotel and resort workers/operators/owners</p> <p>Civil Society Brokers The Coastal Conservation and Education Foundation (CCEF) United States Agency for International Development (USAID)</p>	<p>Locals Community members Resource users</p>
	<p>Tourists</p> <p>Domestic Tourists Originated from somewhere from the Philippines, including Cebu, Bohol and Leyte.</p> <p>International Tourists Originated from somewhere outside of the Philippines. The countries which represent the largest portion of tourists are Korea, Japan, United States, China, Hong Kong, Australia.</p>

Methodology

Key Informant Interviews

Dive business owners and employees were selected as key informants for their expertise and experience with dive tourism and their ability to provide detailed information about the dive potential of Danajon Bank, challenges, and opportunities that may arise for expanding dive tourism to Danajon Bank, and potential dive business support to marine conservation efforts. Key informants were selected by identifying dive businesses within the region of Danajon Bank, for they are the most likely to access potential dive sites on the Bank. Dive businesses were identified on Mactan Island, Cabiloa Island, and one in Bien Unido of Northern Bohol, in the Philippines. Dive businesses were identified and informants willing to participate were interviewed. Twenty-two face-to-face semi-structured key informant interviews were conducted, all in English, a language which most Filipino tourism brokers are fluent. Written field notes were also recorded preceding interviews, to make note of reactions, gestures, main conversational points, and things that may not be expressed in the voice recording. Data were collected during the months of July and August 2011 (see Appendix 1 for key informant interview script).

Interviews were recorded and transcribed verbatim, along with relevant field notes collected. These transcripts were then uploaded in the software program ATLAS.ti (Version 6, 2010) for further analysis. Codes were applied *in vivo* and code categories were developed as trends emerged from the data and used in order for coding to be consistent across transcripts. Twenty-one coding categories were used, under four different main categories: dive potential of Danajon Bank, challenges or benefits of developing dive tourism in Danajon Bank, dive shop support, and marine conservation. Once all transcripts were coded, assigned codes were then condensed and categorized further into words, interpretations and narratives. Categorization means that the interviewer implies codes to the results. Codes can be grouped to form themes (Kvale, 1996).

Willingness-to-Pay Survey

The key informant interviews were complemented with a willingness-to-pay (WTP) survey developed by Giselle Samonte-Tan for CCEF. 100 surveys were distributed to six resorts on Mactan Island during the months of July to September 2011. This survey employed a

hypothetical question to elicit respondents' maximum WTP for MPA entrance to the Danajon Bank reef area. The respondents represent a direct expression of the aesthetic and recreational value of the reefs (see Appendix 2 for WTP survey instrument).

Results and Discussion

The dive shops interviewed varied by ownership nationality, size, and clients served. Dive shop size ranged from small husband and wife shops that cater to a maximum of 20 guests at a time, to large dive shops affiliated with large resorts that can accommodate hundreds of clients at a time. What these dive businesses all had in common was their location and ability to access dive sites on the outer reef of Danajon Bank. In interviewing this group of dive businesses, the major themes that emerged through the interview transcripts were: possible challenges that may arise for attracting dive tourism to the outer Danajon Bank, opportunities that can help aid in the expansion of dive tourism in Danajon, opportunities and challenges for dive business support as a potential stakeholder in this project and the conservation of Danajon Bank, and opportunities for dive tourism benefiting local communities.

Challenges that may arise in Promoting Dive Tourism on the Outer Bank

Even though all dive operators expressed interest in dive sites in Danajon Bank, there were a variety of concerns that were expressed. The most common concerns held by dive shop operators had to do with the distance of the potential dive sites, the diver safety, and the quality of the sites.

Table 3: Challenges that may arise for attracting dive tourism to the outer Danajon Bank

Site Location	Too far
	Expensive fuel costs
	Transportation difficult for some shops
	Difficult to access
	30-40 minutes to the closest island
	Tourist come on short vacations and do not want to travel far to dive
	Most dive operators have never been there
Safety	Concern for diver safety
	Depth of dive sites
	Strong currents
	Not for beginner divers
	Illegal fishing
	Weather and seasonal conditions
Site Quality	Poor visibility
	Coral is destroyed from dynamite fishing
	Attractions are disappearing
	Needs to be worth it

The outer reef potential dive sites are approximately two hours from Mactan by boat. Since Mactan is the dive tourism center that is most likely to access the potential dive sites on the outer Danajon Bank reef, the distance could be a deterrent. Mactan has numerous satisfactory dive sites within a close distance, a 15-30 minute boat ride away, so operators do not need to travel farther. Traveling farther is expensive for operators, especially with high fuel costs, and can be even harder for the smaller dive shops who do not own their own boats.

Tourists from all over the world travel to Mactan. Tourist types can generally be broken into three different categories; domestic tourists, foreign Asian tourists (Koreans, Japanese and Chinese etc.), and other foreign tourist (Americans, Australians and Europeans etc.). General characteristics of tourists that can be assumed based on what nation they are traveling from includes how far they are willing to travel to dive sites. These general characteristics are important because they give insight to the potential of attracting dive tourists to the area of Danajon Bank. Domestic tourists tend to travel over the weekends and prefer to go island hopping. Dive shop operators expressed that foreign Asian tourists tend to come for short vacations of three to four days only and many do not want to spend their time traveling to distant destinations when there are good dive sites very close. Other foreign tourists tend to stay for longer periods of time of a week or more, and are more willing and often desire traveling to more remote sites within the Philippines.

Give and take two, at most three, days, they (tourists) are out of here. If you're not accessible, you're no good. So that's the majority of the clientele, the tourist inflow in Cebu. When you're talking about what, 90 percent, 95 percent, those are the profiles of tourists. So you put that in perspective and you would know that putting any marine sanctuary at the very distant area becomes a problem (Mactan Dive Shop Owner, 8/18/11)

These are important generalizations to consider since in the Philippines 48 percent of tourist are foreign Asian tourists, with the majority of them on shorter vacations. These tourists are less likely to want to travel to distant sites to go diving, especially when Mactan has many dive sites all within a 30 minute boat ride or less.

The remoteness as well as the unfamiliarity of Danajon Bank may affect visitation. Of the respondents interviewed, four dive businesses have dive sites in Danajon Bank, though it is not a regular dive destination for guests. Four dive businesses have heard about it and have been through the area, but do not dive there. Seven have heard about it but have not been there, and

seven were unfamiliar with the area. The distance, remoteness, and unfamiliarity can act as deterrents for attracting dive business.

The main safety concern expressed by respondents was diver safety and conditions of the dive sites. Respondents who have not been diving in the area voiced apprehensions of the dive sites by asking many questions about the depth of the sites, currents, seasonal conditions, and weather. The dive sites that operators do dive in Danajon Bank are for advance divers where conditions are not appropriate for beginner divers. They stated that the sites were deep and at times subject to strong currents. If sites are for more advanced divers, this would limit the amount of tourists that would be able to dive in Danajon Bank sites.

So the Danajon Bank is from the northern pass, the northern pass here, you can call it also like a washing machine dive site because it can be very strong when tides converge in that corner, it can be going down, but you know, definitely for hard core divers, no beginner (Mactan Dive Shop Owner, 7/27/11).

We have a lot of return guests so we always need to look for something different to bring them. So one of the alternatives we found was to take diving, but bring the people a bit deeper into some different places. Cuabyan Island where there is a cave dive forty two meters. And if you go to Comotes or Cuatro Islas you also have deep dive sites which allow us to bring people over there (Mactan Dive Shop Owner referring to dive sites in Danajon Bank, 8/11/11).

Like many sites, the outer bank is subject to different conditions depending on the time of year and seasonal weather. Since certain times of the year seas are more rough and unsafe to travel across, weather has the potential to affect the accessibility of dive sites. Weather conditions can also impact currents and visibility of sites, making them less desirable to dive in during certain times of the year.

Now it's the south (wind) so everybody goes up the north. And then when it's north they go south. But we do both all year round because you just have to check the weather report if it's okay (Mactan Dive Shop Owner, 7/21/11).

Habagat (southwest monsoon) is when winds come from the south so conditions are better for traveling north, not ideal for traveling to Danajon. *Habagat* is from August to October, so will not affect the high tourist season for traveling to Danajon Bank which is Christmas, New Years, Chinese New Year and Golden week.

Another safety concern was dynamite fishing in the area. Every respondent interviewed had heard or witnessed illegal fishing. Those who have heard about Danajon Bank often related

dynamite fishing to that area. One concern about dynamite fishing was diver safety when diving, as well as the general safety of traveling in the area.

The dynamite was here to that boat (60 meters), I thought that I lost my eardrum, my hearing, we went up. And I was with an Italian diver, good thing he didn't panic. We all didn't panic, but we were like hugging each other underwater. Checking, checking you know our masks, if they're not cracked or something. We went up and we saw our boat. Just imagine our boat captain was shaking, because the dynamite fishermen were threatening him. Like if you don't leave this place, if you come back we'll throw dynamite on board. And it's that bad (Mactan Dive Shop Employee, 8/25/11).

Dynamite fishing also impacts the reef conditions as it destroys coral cover and reduces fish abundance. Since dynamite fishing still occurs in parts of Danajon Bank, potential dive sites are being degraded.

Bien Unido, noting much. I don't know, it's just totally damaged here under water; next thing you know, boom, there it goes. Because illegal fishing is so prevalent over there (Mactan Dive Shop Owner, 8/18/11).

This draws on the concern of the quality of the potential dive sites. Since Danajon Bank is farther away from the dive business sector it is trying to attract, in order to attract divers to the area, the dive sites need to be worth it. The dive sites need to contain attractions and healthy reef in order to lure tourists as well as dive business owners to the area.

A lot of people, divers, so disappointed. They go there and say we didn't see nothing. After, I'm not going there anymore, because it's expensive to go there from here and when you go there from here it's a two hour trip (Mactan Dive Shop Owner referring to a Cabilao dive site, 7/21/12).

Opportunities that can Help Aid in the Expansion of Dive Tourism in Danajon

Table 4: Opportunities for the expansion of dive tourism to the outer Danajon Bank

Opportunities	Some businesses already travel through the area on safari dive trips
	Businesses are looking for new sites
	The dive industry is a growing industry
	Danajon is still viewed as a “nice place”
	Dive shops do travel 2-3 hours to get to dive sites

There were opportunities which unfolded in interviews that may aid in the expansion of dive tourism to Danajon Bank and mitigate challenges. Though many of the dive shops do not travel to Danajon Bank, businesses which offer safari dives, multi day dive trips, pass through

the area of Danajon Bank when traveling to other destinations. A common safari dive site is Southern Leyte. In order to reach this area, one has to travel by boat through Danajon Bank from Mactan. Since boats are already passing through Danajon Bank, it would be easy, efficient, and profitable to add dive sites to safari trip itineraries.

I know a lot of dive operators who are running overnight trips, and they are always interested because if the trip is actually going to Leyte, so it gives something to do on the way, instead of, you know, going there on three hours of banka (boat ride). Then actually guests can have some dive sites on the way (Mactan Dive Shop Employee, 8/11/11).

Dive shops are always looking for ways to expand and offer their clients new experiences. Dive operators also expressed that they often have repeat customers, so they want to be able to offer new experiences to keep attracting clients.

We do spend a lot on exploring new places. Like recently, we do somewhere in here in Cubyan Island. So we're trying to explore more places in Cubya, and even at the top of Mactan Island at Punta Engano (Mactan Dive Shop Owner, 8/18/2011).

Even though Danajon Bank is farther away for Mactan dive shops, dive shops do travel far distances to access dive sites. Cabilao is a popular dive destination 2-3 hours by boat south of Mactan off the coast of Bohol. All dive shops interviewed offer trips to Cabilao as one of their dive sites. So even though location of a site does pose a challenge, dive operators will travel 2-3 hours by boat to reach a destination. Tubbataha Reef Natural Park, found 150 km off shore from Puerto Princesa City of Palawan, Philippines, continues to attract dive tourists from around the world despite involving a 10 hour boat ride to access the reef (Tubbataha Reefs Natural Park, 2012).

Opportunities and Challenges for Dive Business Support

During interviews, respondents were asked specific questions regarding their possible involvement in CCEF's *Collaborative Effort to Manage a Large Marine Protected Area* project. Topics that arose in interviews were ways dive businesses currently help with conservation efforts, ways they are restricted, and what they are willing to contribute to projects and opportunities. Respondents were also asked what they would need from CCEF in order to be stakeholders in this project.

Table 5: Opportunities and challenges for dive business support

Ways Dive Businesses are willing to support the project	Willing to attend meetings if productive
	Provide manual labor
	Provide equipment and tanks
	Help with the installation of buoys
	Patrolling and reporting on the area when present
	Reef cleanups
Challenges that restrict the willingness of dive businesses in supporting the project	Time is limited
	Unaware of the entire scope of the project
	Monetary support is difficult, depends on budget
	Plans tend to not get implemented
	Business is just focused on diving
	Hesitant to support

Dive operators expressed a common concern for the health of the marine environment. Many dive shops partake in what they consider conservation measures, the most common being reef clean-ups. During reef clean-ups, dive shops allow volunteers to dive for free who go out and pick up trash on the reef while they are diving. Japanese owned dive shops have taken a particular interest in crown-of-thorns removal, which is the common name of a starfish that prey upon hard coral polyps. They can be destructive to reefs if densities are high (Timmers et al., 2012). Some dive shops feel that educating divers is an important role for them in reef conservation. It is illegal to remove things from reefs and divers can be fined, though coral damage can still occur from accidental reef contact from buoyancy issues and accidental equipment and flipper contact (Barker and Roberts, 2004). As Barker and Roberts (2004) found, short briefings to divers before a dive have little effect on diver reef contact, but intervention by dive leaders during dives was effective in reducing reef contact. It would be important for dive leaders to be aware and active during dives in helping divers to minimize their contact with the reef.

We are also helping the government to clean the ocean. We have two or three times in the year for general cleaning. But it's only near the tourist area. We don't clean in the other place. And then we in our diving, like every student we have we also remind the student how to protect and not to break the corals, do not throw anything, be good with buoyancy and be respectful to all marine life (Mactan Dive Shop Owner, 8/17/11).

Some dive businesses are more involved with reef conservation efforts than others. Three dive businesses on Mactan act as stewards to MPAs. Lapu-Lapu City in 2006 launched the Marine Sanctuary Stewardship Ordinance of Lapu-Lapu, allowing *Barangay's* and/or private interest groups to collaborate together in creating and maintaining MPAs within municipal waters (WWF Philippines, 2006). Shangri-La Marine Sanctuary was created under this ordinance. Its stewardship members include Shangri-La Resort and Spa, Scotty's Dive Sport Action Network and Dive Center and the LGU of Lapu-Lapu (WWF Philippines, 2006). Kontiki Divers and Tambuli Beach Club also steward house reefs. Other dive shops expressed interest in developing their own sanctuaries, while others volunteer in helping maintain nearby sanctuaries by maintaining buoys and hosting clean-ups.

I'm trying to figure out how to make a sanctuary, the government and the rules.
(Mactan Dive Shop Owner, 7/21/11)

We're planning to have sanctuary in this dive site area (Mactan Dive Shop Employee referring to site on Mactan, 8/11/11).

I wanted to start a foundation myself. I started the Coast Guard Auxiliary and some Ocean Care, but I want to start something else for protecting the environment, the marine life (Mactan Dive Shop Employee, 8/25/11).

In allowing the business sector to be involved in management of MPAs, it is important all stakeholders are still held to the same accountability concerning MPA rules and regulations. Oracion et al. (2005) found that MPA managers observed more violations that are tourism-related than fishing-related, thought it was more likely that resort and boat operators report violations against fishers than it was for fishers to report violations from tourism related activities. In this case, resort operators argued that since they contribute funds to the MPA that they are justified in making individual decisions regarding the MPA (Oracion et al., 2005).

The business sector does have limitations in what they are allowed to be involved in regarding marine and coastal conservation and management. Dive shops frequently felt there were limited opportunities to aid in marine conservation.

In some places there are things being done, but not as much as we can do. Because there is always local politics involved. And, you know, even if there are several laws, somebody needs approval for something to do and always delays stuff. It's always hard to do things around here (Mactan Dive Shop Employee, 8/11/11).

You can see that when you look at the private sector, the private sector has done so much. But you know, the private sector can only do so much to a certain point because there are impediments in the law (Mactan Dive Shop Owner, 8/18/11).

In terms of direct benefit from dive businesses to the project, there were many ways dive shops were willing to help to various degrees. Dive businesses expressed that monetary support is difficult and would only consider it if there was a direct benefit for their business. The most common ways operators are willing to support this project is providing manual labor and volunteers, providing the use of equipment and tanks, and helping with the installations and maintenance of buoys.

The difference is in what kind of involvement you are looking for. If it's monetary, it might be a little bit hard. If it's manual, we can always accommodate some way (Mactan Dive Shop Employee, 8/11/11).

If you need like setting up a sanctuary probably need equipment and tanks, services, people, labor. That shouldn't be a problem. I mean, what my business thrives on is the environment. Then I feel it is my responsibility, obligation actually, to take care of it (Mactan Dive Shop Owner, 8/18/11).

But the best that we have so far is man power, attending meetings, and of course, operating if there is a plan, for example, for marine sanctuary clean up. We do help clean up. But financial we haven't been very helpful. But if there is a need, and we think it's good for the tourists industry, why not (Mactan Dive Shop Employee, 8/27/11).

Some said that they were willing to help patrol the area while on site, though many felt that was a job for an enforcement officer or someone else.

(Patrolling) that's a problem. I don't think everyone will agree on that. It's because, we're doing our businesses here, so there should be some organization that at least accommodates for that. That will travel there and patrol the area every day (Mactan Dive Shop Employee, 8/12/11).

Many said that they would attend meetings, however only if they were productive. Time is limited, and many of the small dive businesses have few employees and it is difficult for them to leave their businesses.

If there is actually things being done, and there is real work being done, meaning there are tasks being assigned and tasks being done and people working together, of course (Mactan Dive Shop Employee, 8/11/11).

A meeting, it's very hard because we don't have staff. We only have me and my husband (Mactan Dive Shop Owner, 8/15/11).

Though dive businesses expressed interest and ways they can support the project, there are a few things that they need in order to actually be able to bring tourists to the dive sites. Besides attractions and good dive sites, dive shops would need to know more about where the sites are and their diving conditions. Currents and depth are important factors for dive operators to be aware of. Currently the dive shops that travel to the outer reef to dive sites use GPS to get there, for sites are not marked. Mooring buoys are important for dive spots to mark and reduce anchor damage to the sites. In the Caribbean, anchor damage is regarded as one of the most serious threats to marine resources (Hall, 2001). Some dive shops expressed a need for places to stop, since the dive locations are far away.

It is clear that dive businesses have the interest and the potential to aid in the expansion of dive tourism to Danajon Bank. With dive tourism being a competitive business and due to the large number on dive shops on Mactan, cooperation between dive shops may be difficult. The general characterization of dive shops are; Korean shops stick to themselves, Japanese dive shops have their own Japanese organization, Filipino dive shops are individualistic and don't collaborate, whereas other foreign dive shops do collaborate with other like dive shops.

Getting everybody sitting down at the table is going to be very hard. Plus, how are you going to do it? If you put everybody together, you're going to have some nationalities that are going to be questioned. Korean dive centers, everybody will question them. So it's going to be something very tricky (Mactan Dive Shop Employee, 8/11/11).

Here, we don't (work together), I think Scotty's is the only one who's making some organization. He's the one who takes a stand because he's a foreigner. But most of the shops here are owned by Japanese and Koreans. And Filipino will not help each other (Mactan Dive Shop Employee, 8/17/11).

Stakeholder involvement generally refers to cooperation and collaboration. If there is already animosity between different dive shops, it can be difficult bringing businesses together in this planning process.

Opportunities for Dive Tourism Benefiting Local Communities

CCEF and the LGUs hope to make Danajon Bank a “prime eco-cultural tourism destination in the country, being its main economic development strategy” to benefit local communities (Costal Conservation and Education Foundation, 2011). In applying the BLT

model to this case in order to illustrate the relationships between the different stakeholders, some gaps can be seen that may potentially impact the successfulness of this project. How local communities will benefit from tourism development in Danajon Bank will need to be addressed. Whiting (2012) found that the community of Bien Unido believes that dive tourism will increase municipal revenue, improve natural resource relationships, create employment and quality of life, and improve the infrastructure of Bien Unido. Concerns of tourism development were expressed, but community members believe that the benefits will outweigh the concerns (Whiting, 2012).

In developing tourism as means to increase economic opportunities for poor local communities several factors need to be considered: human and financial capital of the poor, social capital and organization strength, gender, how it fits with existing livelihoods, location, land ownership, access to tourism market, and linkages between formal sector and local suppliers (Ashley et al., 2000). Linking local markets to tourist markets may be difficult due to the type of tourism and the location of the tourist attraction. In this case, since the dive sector capable of accessing Danajon is Mactan, businesses and employees from Mactan may benefit more from this opportunity. When dive businesses access dive sites that are far away from their actual business location, they travel to sites by boat, using employees that they hired from Mactan and Cebu, dive, and return to Mactan for the night. There is very little or no interaction with local communities at remote dive sites.

They just bring divers here and they dive, but they don't stay on the island
(Cabilao Dive Shop Employee, 7/10/11).

With the already established dive business sector being so far away from the area, economic opportunities for local people are limited. There is limited opportunity for tourist-local exchange, where tourists can buy food or souvenirs. There is also limited employment opportunities since the dive shops already have their work force established from Cebu and Mactan.

Land ownership, one factor important in developing pro-poor tourism, has potential to benefit local communities. Ownership over natural resources gives people market power and enables them to secure benefits from tourism (Ashley, 2000). Since the resource in demand is the coral reef which falls within 15 km of shore, the municipalities are responsible for management and regulations, allowing the option of implementing resource user fees. In this

situation, user fees may be the best option for creating economic opportunities. Dive businesses were asked about their opinions and perceptions of MPAs and user fees. All were in support of MPAs since they are good for business since they help protect dive sites. Dive operators agreed with the need for diver fees.

You need to pay, otherwise if you don't pay you cannot maintain it and you cannot pay somebody to collect a user fees and somebody to watch it, so you need the user fees. They are natural and compulsory (Mactan Dive Shop Owner, 8/11/2011).

I'm happy to pay for them. We pass them off to the divers of course, but they're also happy to take. Why, because the corals are more prolific, there's more fish life, the density of marine flora and fauna is better inside the buoyed zone. It makes senses to dive inside marine protected area. Outside of that, there's not much really (Cebu Dive Shop Owner, 7/21/2011).

I agree to pay, but in very reasonable price. We go many places which is marine sanctuary, some places very unreasonable (Mactan Dive Shop Owner, 8/17/2011).

The only circumstances in where respondents disapproved of MPAs and users fees were when fees were higher than the law allows which is PhP 200 (USD 4.60), or when fees are not being used properly and MPAs are poorly managed and not maintained. One reoccurring theme that emerged from interviews was the use of MPAs as profit centers, not as conservation measures to benefit local resource users.

Honestly, municipalities are creating them (MPAs) for profit more than for the environment. It's down the line who cares for the environment. For me, okay, so be it. Make it (MPA) for a profit, as long as the profit goes back to the community, not to your pockets. Because that's the reality in the Philippines, that's the reality of life. In the end of the day you create your profit, you protect your seas, it's fine with me as long as the profit goes to the right place (Mactan Dive Shop Owner, 8/18/11).

Reitz (2011) found in a study in Moalboal, another popular dive destination on Cebu, that a lack in stakeholder participation, the absence of conflict resolution mechanisms, and lack of transparency surrounding revenue usage can jeopardize the social sustainability regarding both the user fee systems and the effectiveness of MPAs. When developing user fees in Danajon Bank, it would be important to develop a strong user fee system to ensure that fees are being collected and dispersed appropriately. In Danajon Bank, user fees will act as an important economic opportunity for the LGU and community. It is important for involved stakeholders to

work together and share the common goal of protecting the reef as well as aiding local resource users. Collaboration will help to avoid possible conflict and failure of the project.

Tourists on Mactan were in support of paying entrance fees to dive in MPAs. In the WTP survey, when asked the question ‘if you were traveling to Danajon Bank, what is the maximum amount that you would be willing to pay as a daily per person entrance fee to the mark park?’ the response ranged from PhP 20-1,500 (USD 0.50-35.00) for local tourists and USD 2.00-40.00 for foreign tourists. The median entrance fee that tourists would be willing to pay is PhP 173 (USD 4.00) and USD 14.00 for local tourists and foreign tourists, respectively. This will give CCEF and the LGUs useful insight in deciding what the entrance fees should be set at for Danajon Bank sites.

Recommendations

The dive business sector on Mactan is interested in the possible expansion of dive tourism to Danajon Bank. Their interest and ability to aid in the development of dive tourism in Danajon Bank can act as a valuable resource for this project. Thiele et al. (2005) found that in projects involving tourism related activities as alternatives to fishing it is important to ensure that the participatory planning process includes both local resource users and the tourism industry. It will be important to involve the tourism industry in tourism planning for Danajon Bank.

Examining the case of Tubbataha Reefs Natural Marine Park (TRNMP), parallels can be drawn between successfulness of dive tourism for Tubbataha and the dive tourism potential for Danajon Bank. Tubbataha has been a prime dive destination in the Philippines since the early 1980s (Tongson and Dygico, 2004). During the late 1980s, destructive fishing methods including dynamite fishing, lead to a 24 percent decline in coral cover on the outer reefs in a five year time span (Tongson and Dygico, 2004; Subade, 2007). In 1988 the Presidential Proclamation 306 issued by President Corazon Aquino established the 33,200 hectare no-take TRNMP (Aquino, 2010). In 1993, TRNMP became a United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage Site (Aquino, 2010). Tubbataha now ranks amongst the top ten dive sites in the world (CNNGo, 2012). Similar to Tubbataha, Danajon is a unique remote destination that is challenged by illegal fishing. With better management and tourism development and promotion, Danajon has potential to become a prime dive destination in the Philippines.

Recommendations for CCEF in Developing Dive Tourism in Danajon Bank

- Utilize resources that dive businesses are willing to volunteer. Dive businesses are in support of marine conservation efforts, especially when conservation provides opportunities for their business, like new MPAs and diving sites. Dive businesses are already involved in reef cleanups and volunteering time, labor, and equipment for conservation efforts on Mactan, and are willing to do the same for Danajon Bank. The dive sector should not be overlooked as a potential resource.
- Utilize knowledge of dive shops in identifying dive sites in Danajon Bank. There are some dive businesses that already dive on Danajon Bank. Meeting with these businesses

will help CCEF to identify already visited dive sites and to learn more about their diving conditions.

- Work with dive businesses in discovering new potential dive sites in Danajon Bank. Dive shops are looking for new sites and some operators already partake in exploratory dives. Working with these dive shops and utilizing their time and resources could help in discovering new dive sites. Since the current identified dive sites on Danajon Bank appear to be more appropriate for advanced divers, looking for sites appropriate for beginner divers would be beneficial.
- Promote dive sites of Danajon Bank. Once dive sites are developed, dive businesses will need to know where the sites are, how to get there, and what their diving conditions are. The majority of dive businesses interviewed are open to traveling to new sites, for it benefits their businesses, allowing them to provide more options to their clients. Learning from the case of the Bien Unido Dive Camp, developing a tourist destination is one step, but promoting and attracting tourists to the area is equally as important.
- Whiting (2012) found that community members of Bien Unido want tourists to come. With the desire of local communities and LGUs to attract tourists to the region of Danajon Bank as a source for economic opportunities, CCEF should explore how local communities will be able to benefit from expanding dive tourism to Danajon. The potential dive sites are far from shore and dive operators tend to bring clients to sites, dive, and leave with no interaction with local communities. Expanding dive tourism in a way that will promote community-tourist interactions would increase the opportunities for local communities to benefit from tourism.
- This study found that dive tourists were willing to pay a positive amount to enter a Danajon Bank MPA. This suggests that the establishment of an entrance fee to cover park maintenance and management costs is a feasible option.
- Work with LGUs to develop a user fee system. This fee system will need to encompass stakeholder participation, conflict resolution mechanisms and transparency surrounding the revenue usage of fees to ensure its success (Reitz, 2011). A successful user fee system may be the best option for creating economic benefit for local communities.

- Address the issue of illegal fishing in the area. As dynamite fishing continues, potential dive attractions are being degraded. Informants suggest that there should be guards for the area to improve enforcement.
- Promote sustainable dive tourism development in Danajon Bank, which includes ecological, social, cultural, and economic sustainability (Mowforth and Munt, 2003). Ecological sustainability refers to mitigating negative environmental impacts to the area. This may include the installation of buoys on site to reduce damage from anchors and encouragement of dive operators to actively engage with divers during dives to discourage contact with the reef. Socially, local communities should be able to support the influx of tourist to the region. This may involve researching the carrying capacity for the dive sites and implementing restrictions on how many divers a day can access the area. Culturally, the development of dive tourism should not impede on the lifestyles and traditions of local communities. Who gains and who loses should be considered when developing economic sustainability. Since the local communities are the stakeholders giving up access to fishing grounds for the expansion of dive tourism, they are the stakeholders who should also benefit from tourism.

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Appendix 1: Key Informant Interview Instrument

1. How long has your business been operating?
2. How many boats does it have? Other equipment?
3. What types of dive trips do you offer?
4. On average, during the high season, how many divers do you have in a day/month; lean season?
5. What types of tourists dive with your business? (nationality, family, safari, beginner, etc.)
6. What are the top three sites that you go to as a business?
7. What qualities make these three sites the most visited?
8. What is the furthest site that you travel to for diving?
 - a. How far is it?
 - b. How long does it take to get there?
 - c. Is there anything that limits you from traveling to other dive sites than the ones you currently use?
9. If new dive sites were to be identified, would your company be in a position where it would be able to expand to travel to new sites?
10. Are you looking for new diving opportunities?
11. What are the biggest threats to the dive sites that you travel to?
12. What are your thoughts on marine conservation?
 - a. Is there a need for reef conservation?
 - b. What is being done?
 - c. What needs to be done?
 - d. Who is responsible for reef conservation?
 - e. How dependent is your business on reef conditions?
 - f. What are challenges that you see with reef conservation?
13. What is the dive industry's role in reef conservation?
14. Has this business ever been involved in reef conservation efforts?
 - a. If yes, please explain
 - b. If no, why?
15. What are your thoughts on Marine Parks?
16. Are any of the sites that you currently travel to in a marine park?

If yes,

 - a. Where ?
 - b. What are the cost to use the park?
 - c. What are your thoughts on diver user fees?
 - d. What do you think fees should be used for?
 - e. How do tourist react to paying diver fees?
17. How do you think marine parks should be financed?
18. Who should be responsible for the establishment and enforcement of marine parks?

CCEF is currently undergoing a project to design a marine park in the Danajon Bank region. They are currently in the first year of a two year project to collect data that will be used to design a plan to establish a marine park.

19. What can you tell me about Danajon Bank?
20. Are there sites in that area that you travel to for diving?

- a. If yes, Where? Describe the site and the type of trips you take there.
 - b. If not, why not?
21. If there was a marine park established with identified dive sites, would your business be willing to travel there for dive trips.
- a. What attractions would the dive sites need to provide to make you want to utilize it as a dive location?
 - b. What infrastructure would need to be present in order for you to be able to dive at sites in the outer reef?
 - c. What types of dive trips would your business most likely partake in to travel to that region?
22. In your opinion, how large of a park do you think needs to be established for the conservation of Danajon Bank
23. If there was an opportunity, would your business be interested in being involved with the implementation of a marine park in Danajon Bank?
- a) If yes
 - i. Would you be interested in being involved in the design of the Marine Park?
 - ii. Would you be interested in being consulted regarding management of the sanctuary?
 - iii. Would you be willing to assist with installation of dive buoys and mooring sites within the sanctuary to improve access for divers?
 - iv. Would you be willing to assist with patrolling of the sanctuary?
 - v. Are there other ways you would be willing to assist in conservation of the Danajon Bank?
 - b. If not, why not?
24. Do you have any further comments or questions?

Appendix 2: Willingness-to-Pay Survey Instrument for Tourists

Dive Resort: _____
 Todays Date: ____/____/____
 Municipality: _____
 mm/dd /yyyy
 Province: _____
 Island: _____

The Coastal Conservation and Education Foundation, a local non-government non-profit organization based in Cebu City, is conducting a survey on Cebu, Bohol, and Leyte Islands to help learn more about why tourists are attracted to specific areas. This survey will also help research the ecotourism potential for Danajon Bank.

A. What has motivated your trip to Cebu/Bohol/Leyte:

1.1 Which of these places have you visited or do you think you will visit during this trip. (See the map on the other page)

Cebu	Yes	No	Not sure	Bohol	Yes	No	Not sure	Leyte	Yes	No	Not sure
Mactan Is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cabilao Is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Canigao Is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Olango Is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Banacon Is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cuatro Islas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Mangroves							
Hilutungan Is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Danajon Bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Nalusuan Is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bien Unido	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
				Underwater Grotto							
Caubyan Is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pandanon Is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Other: _____ Other: _____ Other: _____

1.2. If you checked Danajon Bank, was visiting Danajon Bank the principle reason for your trip?
Yes No

2.1 Which of the following attributes were important in your decision to travel to this destination? (Check all that apply)

- | | | |
|--------------------------------------|--|--|
| <input type="checkbox"/> Marine life | <input type="checkbox"/> Good fishing | <input type="checkbox"/> Culture and history |
| <input type="checkbox"/> Wildlife | <input type="checkbox"/> Beautiful Beaches | <input type="checkbox"/> Quality of accommodations/
restaurants |
| <input type="checkbox"/> Coral Reefs | <input type="checkbox"/> Remoteness | |
| <input type="checkbox"/> Other _____ | | |

2.2. Which of the above attributes were the three most important in your decision to travel to this destination?

a. _____ b. _____ c. _____

3.1 Which of the following activities will you undertake during your visit? (Check all that apply)

- | | | |
|--|--|---|
| <input type="checkbox"/> SCUBA diving | <input type="checkbox"/> Marine wildlife viewing | <input type="checkbox"/> Cultural exchange |
| <input type="checkbox"/> Snorkeling | <input type="checkbox"/> Bird watching | <input type="checkbox"/> Research/study |
| <input type="checkbox"/> Swimming | <input type="checkbox"/> Seeing mangroves | <input type="checkbox"/> SCUBA diver course |
| <input type="checkbox"/> Private Boating | <input type="checkbox"/> Hiking | |
- Sportfishing, and if so, which species did you hope to catch? _____
 If you sportfish, do you practice Catch and Release? Yes No
 Other (Please specify): _____

3.2. Which of the above activities were the three most important in your decision to travel to this destination?

a. _____ b. _____ c. _____

4. How many people are traveling with you? _____ people

5. How many days do you plan to stay? _____ days

6. If you are traveling under a package tour that includes transport to your travel destinations, how much did you pay? _____ PhP/ _____ US\$ Does not apply

7.1 How much will you spend for your current trip?

As an Individual (US\$)	Or if traveling as a family (US\$)	If traveling under a packaged tour, check what is included
Transport		
a. Air: International travel for the trip		
b. Air: Domestic travel for the trip		
c. Water: Boat travel for the trip		
d. Land travel per day		

As an Individual (US\$)	Or if traveling as a family (US\$)	If traveling under a packaged tour, check what is included
Daily Costs:		
a. Accommodations per day		
b. Guide per day		
c. Food per day		
d. Cooking gas & diesel for the generator per day		
e. Scuba rental (gear/ tanks /etc) per day		
f. Snorkeling rental (gear/ guide) per day		
g. Fishing equipment rental per day		
h. Tips per day		
i. Other (Please specify):		

7.2. If traveling as a family, including yourself, how many people are involved in the above costs? _____ people

8. What is your preferred choice of accommodation for traveling within Cebu/Bohol/Leyte? (Check one)

- Resort Local Guest House Community Homestay
 Hotel Backpackers Lodge Other (Please specify): _____

9. If you are diving during your current visit, what types of dive trips are you partaking in? (Check all that apply)

- Day, single site dive trips Multiday island hopping dive trips
 Day, island hopping dive trips Multiday, liveaboard dive trips
 Other (please specify): _____

B. There is a current plan to establish a marine park that encompasses the Danajon Bank outer barrier reef. Environmental user fees may be collected and would help fund the management of the Park. (See map)

2.1. if you were traveling to Danajon Bank, what is the maximum amount that you would be willing to pay as a daily, per person entrance fee to the marine park? _____ PhP/ _____ US\$

Please explain your answer _____

2.2. Who should be responsible for collecting environmental user fees? (Check one)

- Dive Operators Non-Government Organization
 National Government Agency Local Tourism Association
 Local Government Other (please specify): _____
 Community Based People's Organization

Why? _____

2.3. What should park entrance fees be used for? (Please be specific) _____

3.1. If you were diving in Danajon Bank, what is the maximum amount that you would be willing to pay as a daily, per person diver fee to the marine park? _____ PhP/ _____ US\$

Please explain your answer _____

3.2. From the list in 2.2., who should be responsible for collecting diver fees and why? _____

3.3. What should diver fees be used for? (Please be specific) _____

C. Information About You

Nationality _____

Country of Residence _____

If Philippines, in which province do you live? _____

Your Age: _____

Gender: Male Female

Highest educational degree obtained _____

Your occupation _____

1.1. Which of the following categories best reflects your income in 2010

For Non-Filipinos

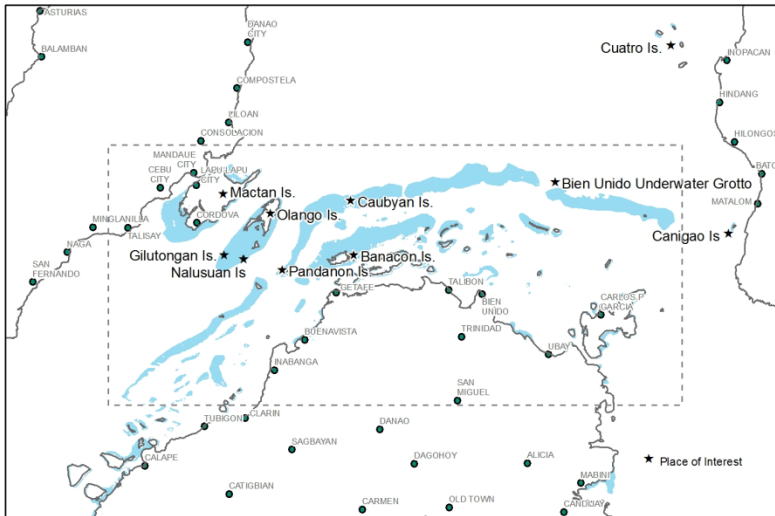
- less than US\$ 20,000 / year
- US\$ 20,001 to US\$ 40,000 / year
- US\$ 40,001 to US\$ 60,000 / year
- US\$ 60,001 to US\$ 80,000 / year
- US\$ 80,001 to US\$ 100,000/ year
- US\$ 100,001 to US\$ 150,000 / year
- US\$ 150,001 to US\$ 200,000 / year
- More than US\$ 200,000 / year

For Filipino Nationals

- less than Ph peso 20,000 / month
- Ph peso 20,001 to Ph peso 40,000 / month
- Ph peso 40,001 to Ph peso 60,000 / month
- Ph peso 60,001 to Ph peso 80,000 / month
- Ph peso 80,001 to Ph peso 100,000 / month
- Ph peso 100,001 to Ph peso 150,000 / month
- Ph peso 150,001 to Ph peso 200,000 / month
- More than Ph peso 200,000 / month

Thank you.

Map of points of interest with marine park outlined in Danaojon Bank



Any further comments:
