Marine Protected Area-Based Tourism in Dauin, Negros Oriental, Philippines

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This paper argues that marine protected area-based tourism in Dauin, Negros Oriental in central Philippines as a nature-dependent enterprise is vulnerable to climate change impacts on coastal ecosystem as well as to touristic infrastructures and activities if not regulated or tempered by the actors of the tourism system composed of brokers, locals and tourists. But there are also problems within the tourism system due to conflicting priorities in MPA governance, the use of coastal and marine resources and the appropriation of tourism revenues that threaten the future quality of MPAs and the ecotourism industry as a whole. This paper recommends that, when feasible in certain coastal communities, policy makers and MPA managers should re-think the notion and goals of MPAs and realize that these can be designed from the beginning to address sustainable ecotourism goals as well as fishery and biodiversity goals.

KEYWORDS: marine protected area-based tourism, ecotourism, coastal ecosystem, tourism system, climate change, MPA governance.

INTRODUCTION

The Philippines is abundant of talented, skilled, and hospitable people as well as fascinating traditions and beautiful places that are marketed as tourist resources or commodities to generate foreign reserves to repair the country's ailing economy. As millions of Filipinos migrate to seek employment abroad and subsequently remit hard-earned dollars back home (Amper, 2007), a corresponding number of tourists from developed and temperate countries also visit the Philippines each year to enjoy and relax in the country. From the data of the Commission on Filipinos Overseas, the number of Filipinos deployed abroad for various types of employment in 2008 was 1,236,013 compared to 1,077,623 in 2007 or an increase of 14.70% (CFO, 2008). Meanwhile, the Department of Tourism had recorded in 2008 about 3,139,422 tourists who arrived in the country with a 1.53% increase from 3,091,993 of 2007 (PTA, 2008). Interestingly, the number

of tourist arrival in 2008 exceeded three times the number of deployed overseas Filipino workers, indicating a flourishing tourism industry in the country.

Driven by the monetary benefits generated from tourism, the government has been identifying and promoting cultural and natural spectacles through various media to attract more foreign tourists. It has also built or provided infrastructure like the nautical highway, seaports, and airports to connect provincial tourist destinations to major cities of the country. There are, however, unintended negative socioeconomic and environmental consequences of tourism aside from the fact that it is also highly vulnerable to climatic variations or changes and environmental alterations. In this case, tourism is viewed both as a culprit and a victim of environmental destruction due to human excesses and abuses in the use of natural resources (Huttche, White & Flores, 2002).

In this paper, I focus on marine protected area-based tourism, particularly scuba diving and snorkeling, among the other variants of coastal ecotourism that include swimming tourism, whale-watching tourism, bird-watching tourism, and so on. But the latter forms may also be present in a coastal community as additional or alternative touristic activities that offer diversity of spectacles to tourists who are primarily attracted to its beautiful marine protected areas (MPAs). But clearly, these variants of coastal ecotourism show how it is inherently a nature-dependent industry and, therefore, vulnerable to the quality of the coastal ecosystem that have been subjected to human abuses and the impact of global climate change.

My discussion is also cognizant of the fact that tourism per se if unregulated can add to climate change impact on the coastal ecosystem. This impact requires adaptation for all involved in the tourism industry in order to avoid, moderate, cope with, or take advantage of the consequences of climate change. Mitigation is also needed to reduce, prevent or correct this impact on tourism infrastructures and spectacles (Jaranilla-Sanchez, Lasco, Villamor, Gerpacio, Nilo & Villegas, 2007, p. 2). One example of mitigation that benefits coastal ecotourism includes the establishment and enforcement of MPAs and other regulations to alter resource use and preserve coastal and marine spaces. This is a major concern of this paper.

But there are also inherent problems within the tourism system—referring to the human and social components of the industry—that impacts the sustainability of ecotourism. These problems originate

from people and groups that get into the tourism enterprise without being sensitive to the fragility of the culture of the local community and the natural environment when exposed to the abuses and indiscriminate touristic activities if not regulated. But these can be corrected with the premise that environmental and economic goals can be reconciled when trade-offs are allowed between the two or they are equally considered in developing and managing an ecotourism program. With this perspective, I look into ecotourism according to the definition of the International Ecotourism Society as a form of "responsible travel to natural areas, which conserves the environment and sustains the well-being of local people" (Lindberg & Hawkins, 1993 cited in Huttche et al., 2002, p. 50). Thus, ecotourism brings economic benefits at the same time preserves nature as spectacle.

I used in this paper the experiences of the town of Dauin, Negros Oriental in central Philippines (see Figure 1), that has been my study site on various topics related to coastal resource management since 1998 up to the present, to show how marine conservation with MPA as a tool can contribute in the long run to the success of coastal ecotourism. Dauin is now a favorite tourist destination in the country, internationally known because of its well-managed and beautiful "no-take" MPAs. One of these "no-take" MPAs, and the most popular, is located off Apo Island while nine are off the mainland barangays. "No-take" MPAs are restricted spaces to any forms of fishing; scuba diving and snorkeling are allowed being non-extractive activities as long as user fees are paid and the "no collection of any marine organisms" and other touristic regulations are strictly followed.

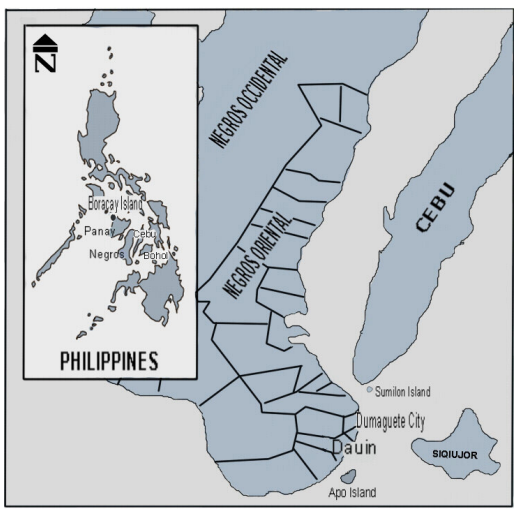

Figure 1. **The location of Dauin, Negros Oriental.**

THE SOCIAL COMPLEXITY OF THE TOURISM SYSTEM

In order to put MPA-based tourism within the context of the whole tourism industry, this section defines what makes up tourism and why it is a socially complex engagement. Tourism is a special case of travel but is different from business, religious and other forms of movement of people because it is primarily aimed at pleasure, reflection, relaxation, recreation, or fun with the ultimate intention of returning home (Miller & Auyong, 1998). Nonetheless, these other forms of travel can be mixed with tourism like in the case of people who attend scientific conferences or business meetings who also take some time to pursue some touristic activities in between or after completing the official purpose of their travels. And there are resorts and hotels in tourist destinations (e.g., El Nido, Palawan; Boracay Island, Panay) that have facilities and amenities designed for these kinds of travelers who combine business and pleasure. This is also a way of diversifying services and sources of revenues of tourism establishments because of the seasonality of tourism due to climatic variability in the host communities and the countries of origin of foreign tourists.

But from an anthropological perspective, tourism is not simply a form of business involving tourists as customers who pay for the services they receive from people who invest in the trade. Tourism is a complex composition of people who are directly and indirectly involved and those who are not involved in the business but are affected by the presence of tourists and their activities in a particular place. Miller and Auyong (1998) view tourism as a sociocultural system consisting of three interacting components that includes brokers, locals, and tourists (BLT).

The brokers are persons who in one way or another pay professional attention to tourism. They are further classified into private brokers who are directly engaged in the tourism enterprise and the public brokers who are engaged in governance and management of tourism as an industry. On the other hand, the locals are persons who reside in the general region of the tourism routes and destinations but make money outside of the tourism enterprise. They are composed of indigenous inhabitants and the newly settled or migrants. Meanwhile, tourists are persons who travel for pleasure to tourist destinations for short visits. They are categorized as domestic or foreign tourists based on their origins.

The tourism system, however, is not rigid because what composes it can shift in characteristics and roles. For example, public

brokers can turn private, locals can become tourists to other destinations, and tourists can decide to move into a host community and stay permanently. Subsequently, a tourist turned local may be interested to invest in the business and become a private broker (Oracion, 2001). The fluidity of the tourism system suggests that it is dynamic; the various components shift characters and roles depending on the opportunities in the tourism industry as well as the circumstances in tourist destinations. This social fluidity also suggests that tourist destinations can have life stages corresponding to their levels of development: discovery; local control; institutionalization, overdevelopment, and stagnation; rejuvenation, or decline (Butler, 1980 cited in Huttche et al., 2002, p. 7). They have ups and downs and their future depends on the quality of their resources, spectacles, and awesome experiences that attract tourists.

The most popular places to visit sought by tourists from temperate countries in the tropics like the Philippines are located in the coastal zone. Technically, the coastal zone refers to "a band of dry land and adjacent ocean space (water and submerged land) in which terrestrial processes and uses directly affect oceanic processes and uses, and vice versa; its geographic extent may include areas within a landmark limit of 1 km (inward) from the shoreline at high tide to include mangrove swamps, brackish water ponds, *nipa* swamps, estuarine rivers, sandy beaches, and other areas within a seaward limit of 200-m isobath to include coral reefs, algal flats, sea grass beds, and other soft-bottom areas" (DENR, DA-BFAR, DILG & CRMP, 2001, p. 141). Thus a coastal zone makes itself an ecosystem with interlocking specific ecosystems comprised of the biotic components and the abiotic elements (Huttche et al., 2002, p. 11). Anything drastic that happens in one ecosystem necessarily affects the adjacent ecosystems. Arguably, the tourism system has a crucial role in the maintenance of the health of the coastal ecosystem as well as benefit from it because its quality determines the life of the tourism industry.

COASTAL ECOTOURISM AND QUALITY OF COASTAL ECOSYSTEM

Coastal ecotourism emerges as a major industry in the Philippines due to the growing number of tourists who want to get closer to nature and away from crowded destinations. However, they also seek places that have infrastructure and suprastructure that suit their tastes and needs. Moreover, for tourism to grow, it requires investments and effective governance. Therefore, coastal ecotourism is the *sum* of a

beautiful coastal ecosystem *plus* a well-functioning tourism system.

The aesthetic appeal of the coastal zone and its biodiversity richness, particularly the coral reefs and its clear waters, give this place greater tourism value (White & Cruz-Trinidad, 1998, p. 20). This is enhanced by the relative accessibility of the coastal areas because of the opening of roads to formerly remote coastal communities or the availability of transportation to island communities in the country. Thus, the mere mention of coastal ecotourism flashes images of resorts at the seaside with white sandy beaches lined with coconut palms and trees. Coastal ecotourism has sun, sand, and seas and marine biodiversity with corresponding activities that suit these natural elements (Huttche et al., 2002).

But there are arguments against tourism development because of the negative consequences that many places experience as they become popular to many tourists. This is the situation in Boracay Island, Malay, Panay wherein the coming of more tourists and investors is already beyond its carrying capacity given its limited land area compared to those years when only few tourists, mostly backpackers or low-budget tourists, visited the island. It has become so crowded with restaurants, resorts, and hotels along its beach fronts and elevated areas. The clear, blue waters around the island are now feared to be contaminated because of pollutants from these establishments (Trousdale, 1997 cited in Huttche et al., 2002, p. 3). Boracay now has an image of mass tourism, not the pristine destination that backpackers used to describe it when it was newly discovered as a tourist destination. The island now poses several concerns among environmentalists and local residents alike. It is experiencing population, technological, infrastructural, service, and social problems similar to other popular tourist destinations in the world (e.g., Coltman, 1989; Miller & Auyong, 1998).

Evidently tourism, when not regulated, can damage the natural environment. Huttche et al. (2002, p. 11) identified several interrelated manifestations of tourism impact on coastal ecosystem. These include increasing congestion in the beach fronts, accelerated beach erosion, dumping of solid waste on beaches or in near-beach area, deteriorating coastal water quality, coral reef degradation through inadequate anchorage and landing facilities, and salt water intrusion. The quality of coastal ecotourism subsequently deteriorates as consequences of this tourism-induced impact on the coastal ecosystem. This shows that the industry can destroy itself. Moreover, there are potential threats from the impact of tides, storms, wave action, and other natural

phenomenon. These occurrences are made worse by climate change—a phenomenon believed to be due either to natural variability as explained by the orbital force theory or to human activity particularly the burning of fossil fuel (Jaranilla-Sanchez et al., 2007).

Whatever exactly is the direct cause of climate change, the fact remains that there are natural calamities now that are more destructive compared to several years ago as felt by locals of a particular tourist destination. For example, a recent study shows that Panglao Island, a popular coastal ecotourism site in Bohol, is now experiencing the threats of climate change impacts that include storm surge inundation, seawater intrusion, coral bleaching, dengue health issue, and sea level rise (Suarez, 2008). This impact puts at risk the quality of coastal ecosystem, thus, making it less attractive to tourists. Subsequently, the profitability of the ecotourism enterprise in the island will suffer. The situation can be worse unless the adaptive measures and mitigations introduced now can successfully lessen the degree of their impact to the two systems. The same climate change impact is experienced in Siquijor Island, which is getting to be more popular as a tourist destination (Catid & Sablan, 2008). Indeed, the threats of climate change are for real and these are limiting factors to the sustainability of coastal ecotourism industry.

Mitigations to the impact of climate change to the integrity of coastal zones are contained in the coastal resource management plan of local government units. These are necessary to cushion the drastic effects of the impact to coastal ecotourism. However, the full participation of the three components of the tourism system in planning and implementation is necessary (Suarez, 2008). Examples of these mitigations include the enforcement of building setback requirements, the maintenance of natural beach vegetation, and the proper treatment of waste to maintain water quality (e.g. Huttche et al., 2002, p. 11). These also include appropriate solid waste management to prevent burning thus reducing carbon dioxide emission and other gases to the atmosphere. Other mitigations include regulating the number of tourist establishments in particular areas, controlling the number of tourists going into a particular site during certain period, and zoning the coastal areas to determine which are appropriate for tourism use (Coltman, 1989, p. 238). All of these mitigations along with funds generated from tourism fees that are needed to implement them are aimed at sustaining the quality of the coastal ecosystem and subsequently the ecotourism industry.

APPRECIATING THE TOURISM VALUES OF MARINE PROTECTED AREAS

The establishment of "no-take" MPAs in Dauin is not basically for tourism. The situation here is quite different from other parts of the world where MPAs, preferably called marine parks, are really designed to sustain coastal ecotourism. The Apo Island MPA, established in 1982 and the first in Dauin, was primarily designed to protect and rehabilitate certain areas of the marine environment and is considered critical in the maintenance of biodiversity, particularly the coral reefs (Alcala, Russ, Maypa, & Calumpong, 2005; White, Aliño & Meneses, 2006). With these expected functions, some sectors also see MPA as a form of nature investment bank for food security and helps in poverty reduction (Leisher, van Beukering & Scherl, 2007). Meanwhile, it was only when the MPA off Apo Island attracted more tourists that the tourism value of MPA was appreciated by the local residents. It was only then that they started to accept cash donations and later, user fees with fixed rate (Oracion, 2001).

There are several types of MPAs depending upon their goals and the resources that they protect, either biological or cultural, such as seagrass beds, reefs and shipwreck sites, submerged archaeological sites, and other maritime infrastructure with historical values. In some cases, however, the protected reefs are traditional fishing grounds of many subsistence or artisanal fishers and the declaration deprives them access to their resource base. This becomes a major reason for their resistance against MPAs, which is rooted on the tradition of open access to a commons (meaning, public or communal property) and anchored on the notion that the sea is God-given; hence, no one owns it. But this same tradition also caused the massive destruction of the marine environment. Population pressure, destructive fishing methods, and industrial and domestic pollutions add to the worsening conditions of the coastal and marine areas.

Studies have shown that the proper management of MPAs for several years can provide substantial benefits for coastal communities both from fishing and tourism. For example, data compared over the years show that fish catch in the Apo Island has significantly improved or has remained stable (Maypa, Russ, Alcala & Calumpong, 2002; Alcala & Cadeliña, 2004; Russ, Alcala, Maypa, Calumpong & White, 2004; Alcala et al., 2005). The perceptions of Apo fishers about improved fish and coral conditions within and outside the MPA after its establishment corroborate the findings of marine biologists (Oracion, 2006b). Maypa et al. (2002) reported that Apo Island fishers

are already experiencing increased catch per unit effort, decline in fishing effort, and change in fishing patterns. Some fishers abandoned some gears which are no longer necessary and they are already fishing closer to home with the use of hand-paddled canoes instead of motorized bancas.

The changes in fishing effort and fishing patterns are not only due to the stability of fishery yields. These are likewise results of the presence of tourism-related or inspired activities directly on the island that offer employment opportunities (Oracion, 2001, p. 118). Some residents are employed in the two resorts (with 30 rooms capacity) in the island as cooks, food servers, utility workers, dive guides, and boat operators that ferry tourists to and from the island. Some women peddle souvenir items to tourists while others are employed by the Protected Area Management Board (PAMB) in its projects and activities (Bernardo, 2001, p. 115). There are households that accommodate tourists into their homes with minimal rates and operate *karenderia* (eateries) for low-budget tourists. The MPA user fees and other tourism-related fees collected from December 1999 to July 2007 recorded a monthly average of Php 190,401 or a total of Php 17,326,549. The amount is shared between the national government (Php 4,331,637.25 or 25%) and Apo Island community (Php 12,994.911.71 or 75%) (PAMB-DENR, 2007, pp. 32-33). The sea wardens and other locals employed by PAMB are paid from the 75% share of the community.

Meanwhile, an assessment of the two oldest MPAs in the mainland, inspired by Apo Island, shows that the one established a year earlier (in 1995) has the highest density of target fish species, among Apo Island MPA and the younger mainland MPA (in 1996) in this order. A monitoring report on MPAs in the province (White, Christie, Apurado, Meneses, Ovenden, Tesch & White, 2002, p. 11) reveals that the older MPA shows that the target and non-target reef fishes are consistently high in diversity and abundance. The younger MPA is also quite abundant in all reef fishes but its target reef fishes are not so abundant. Using perception data, MPA managers and fishers in the mainland now generally see positive biophysical results due to protective conservation (Oracion, 2006a, p. 121). It is safe to say that the mainland MPAs are catching up with Apo Island MPA in terms of the qualities of their coral reefs and fish abundance. In fact, the MPAs in the mainland are already serving as alternative dive sites to Apo Island particularly during bad weather conditions. The nine MPAs off the mainland cover a total area of 52 hectares (with a range from 2 to 9 hectares).

Available data from the Office of the Municipal Treasurer on MPA user fees collected between April 2004 to September 2006 show that the local government unit of Dauin had already accumulated a monthly average of about Php 124,000 or a total of about Php 3,844,000 from tourists who went scuba diving or snorkeling in the MPAs. The amount, that includes only MPA user fees (Municipality of Dauin, 2005), is already significant relative to Apo Island's annual revenue collection and further reinforced the argument for the tourism value of well-managed MPAs. The collected user fees of mainland MPAs are shared among the municipal government (40%), fishers' associations (40%), and the barangay government (20%). The sea wardens enforcing the MPAs received their honoraria from the share of the fishers' associations where they are members. The share of the municipal and barangay governments become sources of additional funds for environmental projects as well as other social services for their constituencies, and part of the honoraria of the sea wardens.

Given the above developments in Dauin that resulted from the success of its MPAs, it cannot be denied that the tourism value for the establishment of the succeeding MPAs has been an important driver for the local government unit to invest its resources toward this purpose. Thus, sustainable ecotourism can also be a primary consideration for establishing MPAs, but it is not a guarantee that tourists would come even when MPAs are already successful if the concerned communities are inaccessible to tourists. The MPA managers and local communities, therefore, have to be cautioned about this to prevent frustrations due to unrealized expectations. This further show that public and private tourism brokers are needed to provide the needed infrastructure and amenities. If everything is in place, as certainly shown in the experience of Dauin, coastal ecotourism can improve the quality of coastal ecosystem and, correspondingly, human life.

REGULATING COASTAL ECOTOURISM-RELATED DEVELOPMENT AND ACTIVITIES

Carrying capacity and limits of acceptable change are two important issues that influence the sustainability of coastal ecotourism. The level of tourist use an area can accommodate with high levels of satisfaction for tourists and exert only few impact on the resources is termed carrying capacity. On the other hand, a consensus about how much change to social and environmental indicators is tolerable due to

tourism activities or development is referred to as limits of acceptable change (Huttche et al., 2002, pp. 36, 42). In practice, the observance of the limits of carrying capacity and acceptable change would mean the enforcement of regulations covering the movements and activities of tourists and the determination of allowable changes in a tourist destination as agreed upon by experts and multiple stakeholders. These matters are not only decided on according to what is convenient but through serious considerations of empirical data like in the case of the allowable number of divers and snorkelers inside the MPA in a given time (Reboton & Calumpong, 2003, p. 178).

In Apo Island, the number and nature of establishments or tourism structures are being regulated and any proposal for this purpose has to seek the approval of PAMB. There are also specific regulations for getting inside the MPA to lessen tourist impact. The number of guided divers and snorkelers inside the MPA are limited to 15 and 32 (but only eight snorkelers per hour at any time) per day, respectively, after paying the required fees. But the management plan of PAMB states that changes may be made on these numbers subject to the recommendation of experts because the present level of tourist use causes only an insignificant amount of damage (PAMB-DENR, 2007, p. 46). Coral damages are more due to deliberate acts and the underwater maneuvers of inexperienced divers, and because of these the touching, taking and removal of any marine organism is strictly prohibited by restricting the wearing of diving gloves. Anchoring, night diving, and carrying of any equipment are likewise not allowed because they disturb or harm marine organisms. The feeding of fish is similarly discouraged to preserve the natural condition of the MPA inhabitants.

In the mainland MPAs, the prohibited activities associated with tourists and tourism activities include alteration, removal, or defacement of boundary buoys or signs, entry of motorized boats, engagement in motorized sports, mooring on boundary buoys except in emergency cases, dropping of anchor, night diving and snorkeling between 6 p.m. to 6 a.m., diving outside the designated area during low tide, training of student divers, and swimming inside the MPA. Moreover, any construction of a structure, fence, enclosure or business enterprise within the area where the MPA is situated has to seek the mayor's approval. Other prohibitions include failure to pay for allowed recreational activities and diving without the accredited and licensed dive guides. The deliberate dumping of garbage by tourists and tourism establishment within the MPA is prohibited.

However, the enforcement of regulations associated with the maintenance of carrying capacity and assurance of tolerable changes often results in community tension when these are not clearly understood and seriously implemented. For example, it has become very controversial when there was a proposal in 2006 to build holiday cottages through a built-operate-transfer scheme on the beach fronting the MPA. This was permitted by PAMB in order to accommodate more tourists during peak season (PAMB-DENR, 2007, p. 23). But the village council rejected the proposal because this would deprive the community access to a space where boats are kept for safety during typhoons (Hind et al., 2008, p. 6). There were also instances that the numbers of divers and snorkelers inside the MPA were not controlled. Outside and local observers considered these as indicative of the emerging laxity and declining motivation in enforcement and the tendency to accommodate or please the tourists who are already in the island. In fact, the size of the MPA is now increased to 15 hectares from 11.2 hectares which may be viewed either as a way to increase the MPA's carrying capacity or to enhance the protection of critical coral reef areas.

MITIGATING CLIMATE CHANGE IMPACTS TO COASTAL ECOSYSTEM AND ECOTOURISM

Bleaching is a major impact of climate change to the corals of Apo Island and mainland Dauin, and it can affect the town's ecotourism industry. Healthy coral reefs are not only attractive to tourists but likewise improve fish population because they serve as spawning areas. The El Niño coral bleaching event in 1997 to 1998 seriously affected certain coral species due to the warming of the sea water. Correspondingly, there was evident decline in fish population density after the El Niño phenomenon (PAMB-DENR, 2007, p. 14). A study shows that about 90% of the *G. fasicularis* colonies were bleached and many of these colonies were dead or had only been partially recovered. Raymundo (2001) who headed the said study explains that bleaching was fatal and the recovery of those that survived was a slow process even if they were left undisturbed. Nevertheless, this implies that the maintenance of an MPA is not only for mitigating climate change impact on coral reefs; it likewise helps in sustaining coastal ecotourism. The recovery of MPA coral community is quite better as compared to those in non-MPA (PAMB-DENR, 2007, p. 11). The same may be true of the condition of coral reefs in the mainland because these are

adjacent areas.

Another problem in Apo Island, made worse by climate change, is the scarcity of fresh water because of the island's limited size, geology, and topography. It has an environment where water directly runs off into the sea leaving no creeks or springs that could provide the residents fresh water for drinking and cooking (PAMB-DENR, 2007, p. 5). So, whenever there are long droughts the supply of water in the island is drastically affected. Although there are several artesian and deep wells owned by some households, the water derived from these sources is not potable. They only use the water from these sources for washing dishes and clothes, and bathing while they fetch water for drinking from the mainland which is a 45-minute travel by pumpboat. Those who do not own pumpboats pay the fare of transporting the water per plastic container. Other households have to rely on their water drinking needs from their rain traps that are so much dependent on the amount of rainfall. The resorts also have rainwater for bathing of their guests but they sell bottled mineral water for drinking. Bottled mineral water is also sold in six *sari-sari* (variety) stores.

The rain water during the typhoon months may ensure enough water in Apo Island but the rough seas make travel difficult and dangerous to and from the island, and this condition affects the volume of in-coming tourists. The typhoon in April 2008, which was unexpected as it was already the start of the summer season, was quite unusual for the island because there was knee-deep flooding that affected the four hamlets or clusters of houses called *puroks*. These are houses that are constructed very close to the shorelines due to limited space. Crowding of houses along the beachfront is not only dangerous during typhoons but is also considered by PAMB to be unfavorable to ecotourism promotion (PAMB-DENR, 2007, p. 45). This is, however, inevitable because the island's total area ideal for human habitation is only 10.8 hectares out of the total land area of 62.67 hectares. The data show that the number of households in the island had increased by 13% from 151 in 2002 to 171 in 2006 or 3.31% per year (PAMB-DENR, 2007, p. 7).

The presence of permanently occupied houses in the plateau, not observed in previous years, evidently suggests the expansion of the residential area. The building of permanent houses on higher ground indicates adaptation not only to crowding but also to sea level rise and storm surge inundation. The restriction on the construction of more resorts in the island can help in reducing the carrying capacity problem. The same is true with the planned out-migration of about

half of the third generation population who aspired to finish college and planned to seek better employment opportunities in other places Nonetheless, the study showed that half of the number of children in the sample planned to remain in the island. This ensures the succeeding generation of locals who can continue the management or enforcement of the MPA (Oracion, 2006b).

Although typhoons drastically affect the income of resorts and dive shops in Apo Island, the situation becomes beneficial to the MPAs and resorts in the mainland that serve as alternative dive destinations (Oracion, 2007). However, these MPAs become less attractive during typhoons and rainy days because of underwater zero visibility brought about by the flooding of rivers and canals in the upper portions of the town that lead to the MPAs. This also explains the presence of garbage inside the MPAs such as plastic wrappers, cans, bottles and other non-biodegradable materials. In 2004, a portion of an MPA guardhouse was destroyed because of storm surge and the flash floods that directly hit it. At another MPA guardhouse, the sea wardens narrated that this structure was far from the shoreline five to ten years ago, but now the sea water reaches the structure during storm surge. The same also happened to one resort that had a structure already close to the shoreline. All these conditions indicate the reality of sea level rise. As mitigation, the local government of Dauin requires the strict observance of proper setbacks for any structures in the coastal zone.

The problem of solid waste in Apo Island can be a combination of the consequences of tourist influx and the growth in the local population (PAMB-DENR, 2007, p. 36). Garbage due to tourism is also the worry of some local government officials in the case of the mainland coastal areas. Some of the garbage find their way to the MPAs and destroy corals that subsequently impact the tourism industry because they become unattractive. Recognizing the potential hazards of improper solid waste management, garbage in Apo Island is regularly collected and brought by PAMB pumpboat to the mainland for proper disposal because there are no more spaces for it in the island. There are paid utility people, usually older women, whose work includes garbage collection. The resorts pay PAMB at Php 100.00 per bag of garbage they have to dispose. Garbage collection fees are also imposed annually upon the resorts in the mainland when they secure business permits. The local government has a garbage collection truck.

ECO-GOVERNANCE AND DISTRIBUTION OF ECOTOURISM BENEFITS

This section contains two subsections—one dealing with eco-governance and the distribution of ecotourism benefits on Apo Island—and another dealing with the same topics in the mainland of Dauin. The issues being raised here are very crucial to the future of the MPAs as well as the tourism industry that is founded on the quality of the former. The discussion provides insights on how different types of eco-governance, specifically MPA management, results in different degree or level of enjoying ecotourism benefits. And talking about MPA management, the role of Silliman University in marine conservation on Apo Island cannot be overlooked. The scientists from the university demonstrated the importance of community-based coastal resource management which it failed to achieve with the first MPA it established off Sumilon Island in southern Cebu because no organic community managed it.

Historically, it took two to five years for Silliman University to convince the locals of Apo Island to designate a portion of their fishing areas as an MPA (Cabanban & White, 1981; Deguit, 1989). The process was full of tension and required intensive educational campaign through the informal leaders. The awareness campaign was to inform the locals about losing their marine resources if no regulative measures were to be adopted at the height of dynamite and *muro-ami* fishing around the island almost three decades ago. After the MPA was finally established and accepted by the community on April 1985 (Deguit, 1989, p. 67), an ordinance legalizing its enforcement was passed by the Municipal Council of Dauin in 1986 and subsequently amended in 1988 to expand the prohibited and regulated activities of fishers and tourists (Municipality of Dauin, 1986, 1988).

Originally, the MPA management was under the Marine Management Committee (MMC) composed of the residents of Apo Island; hence, it was referred to as community-based. Marine and social scientists from Silliman University provided technical assistance. It can also be viewed as co-management with the local government when the municipal council passed the necessary ordinances for its enforcement. The municipal government continued to recognize the direct control of MMC in MPA management. However, the tension in MPA management erupted upon the proclamation of the island under NIPAS as mentioned earlier. This had created an atmosphere of animosity between the local political leaders (both in the island and the municipality) and the Protected Area Superintendent (PASu)

particularly in times when their actions and decisions contradicted because of differences in priorities and concerns. The management tension has undermined the collective efforts of pursuing what is said to be the common good for the island (PAMB-DENR, 2007, p. 24).

As to what the common good is, however, becomes a highly contested issue because of differences in agenda not only among those that composed the members of Apo Island PAMB but likewise among the residents of Apo Island. PAMB is composed of multi-sectoral representatives coming from the national, provincial, local and barangay governments and agencies, people's organization on the island, and the academe. This composition shows that only the elected leaders of the barangay and municipal governments and the people's organization in the island may have direct stakes over Apo Island's MPA because the PASu and the rest of the members of the board are outsiders.

Understandably, the island residents would question the sincerity of outsiders in MPA management and the future of Apo Island. Based on the BLT model of tourism system (Miller & Auyong, 1996) described earlier, the residents are categorized into private brokers (those who are employed in the resorts and engaged in tourism services), public tourism brokers (those working with PAMB) and locals (those earning a living as full-time fishers). The fishers have a negative attitude toward tourism because tourist divers encroach and disturb their traditional fishing grounds and allegedly destroy fish traps and nets (Maypa et al., 2002; Hind et al., 2008). The locals are not directly benefited by tourism and instead caused them problems.

But why was Apo Island declared as national protected area when it has been known to have a successful community-based MPA? Three reasons are cited by Hind *et al.* (2008): the lack of awareness of some community members about the importance of protected area management, the potential problem of political turnovers and the abuses of politicians, and the need to subsidize other protected areas that were not financially viable. These reasons seem to boil down to the issue of sustainability of MPA management that the national government believes can be ensured by promulgating a national law that covers all critical and nationally important protected areas. But the national government has violated the powers and responsibilities it has devolved to the local government units in managing coastal and marine resources within their jurisdictions. Thus, the NIPAS Act of 1992 is viewed as a step backward in community or local government empowerment in coastal resource management aimed for by the Local

Government Code of 1991 and the Philippine Fisheries Code of 1998.

It is a different situation in the mainland. The jurisdiction and empowerment of local government units over municipal waters (15 km offshore) has become a tool of the incumbent administration in establishing MPAs in seven of the eight mainland barangays in cooperation with fishers' associations that subsequently assume MPA management and enforcement. The mainland MPAs are inspired by the past success story of Apo Island in community-based MPA. The mainland fishers' associations and the barangays immediately reap the benefits of MPA user fees that they collected and remitted to the municipal treasurer every end of the month. The appropriation of the shares the fishers' associations received every month is decided upon according to the plans approved by the association members.

The arrangement in the mainland is unlike the case of Apo Island (before this was modified) wherein the release of its share is usually delayed because of bureaucracy. The total amount of money collected by designated personnel by PAMB is first remitted to the national treasury and it is only sometime later that the 75% share of Apo Island is released by the Department of Budget and Management (DBM). This has caused problems in the full implementation of projects in the island and the payment of the wages of locals employed by PAMB according to the PASu (PAMB-DENR, 2007, p. 47). Recently, the automatic retention of the 75% share of Apo Island is reportedly allowed and it is hoped this resolves some of the issues caused by the delay in the past although there are still some questions on the legality of this action.

However, what really becomes clear is that the change in eco-governance in Apo Island did not only alienate the community from the direct management of the MPA but also from its monetary benefits generated from tourism. Almost 80% of the locals interviewed by Hind et al. (2008, p. 7) did not know how the money for the island is being spent. Moreover, 55% among those who knew rated the management of the money from poor to very poor. Expectedly, those employed by PAMB gave favorable ratings. It appears that the locals accused PAMB for its lack of financial transparency and mismanagement of funds.

The problem related to user fees, however, is not new because this was also reported during the community-based MPA era involving MMC and barangay officials (Bernardo, 2001, p. 56). The only differences can be noted in the amount involved and the manner by which the monies disappeared or were misused between the two management regimes. Similarly, concerns about financial management

were reported among the mainland fishers' associations. Some members and officials who were supposedly responsible in safeguarding the earnings of the associations have allegedly mishandled the funds (Oracion, 2006a). Meanwhile, the fishers who are not members of the associations managing the MPAs complained about how they can benefit from MPA user fees.

Generally, the issue of MPA does not end with convincing the community to establish and enforce it but also in properly appropriating its benefits particularly when this already attracts more tourists and generates tourism revenues. This is one serious source of tension that divides the community, showing that an MPA may be a biological success but at the same time a social failure (Christie, 2004). On the contrary, coastal resources management projects will gain support from the target population and will most likely become sustainable when these projects produced the benefits the community most desired or expected (Pollnac & Pomeroy, 2005: 249). Thus, it can be both a biological and social success when its biodiversity and economic goals are equally satisfied.

CONCLUSIONS

Based on the experiences of Dauin, I conclude that marine protected area-based tourism (i.e., recreational diving and snorkeling) as a variant of coastal ecotourism operates in a critical equation that is both very fragile and controversial. Firstly, it has potential negative impact on the coastal ecosystem if it exceeds the carrying capacity of and the allowable changes in a host destination. Secondly, it is a potential source of problems as regards the distribution and appropriation of the revenues it generates among the components of the tourism system. Thirdly, it is highly dependent upon the quality of the coastal ecosystem which is not only exposed to greater risk due to unregulated and destructive human activities but also to the impact of global climate change phenomenon.

Therefore, the sustainability of coastal ecotourism depends upon the capacity and commitment of the tourism system to protect and sustain the quality of coastal ecosystem and its services because these are resources for generating tourism revenues. Sustaining coastal ecosystem has to be undertaken through serious implementation and enforcement of regulations such as those concerning the MPAs because coral reefs and fishes are vital in the dive tourism industry as well as to the food security of fishing communities. The same disposition is

required of other resource management policies that include coastal zoning and collection of user fees that are needed in financing the mitigation of the accumulated impacts of human activities and climate change on coastal ecosystem and subsequently coastal ecotourism.

Looking ahead and, if feasible, given the availability of the needed tourism infrastructure and amenities in certain coastal communities elsewhere that have similar natural and cultural features with Dauin, it is recommended that policy makers and MPA managers re-think the notion and goals of establishing "no-take" MPAs. They should realize that MPAs can be designed from the beginning to address sustainable ecotourism goals as well as fishery and biodiversity goals in order to benefit both those directly and indirectly involved or affected by the ecotourism industry.

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