



POLICY RECOMMENDATION ON THE REHABILITATION OF BORACAY ISLAND AND MANAGEMENT OF ITS MARINE ENVIRONMENT

Overall many coastal environments in the Philippines have been considered as “poor” to “fair”. These conditions can be traced to extreme pressures from land use/coastal activities particularly during the recent past, exacerbated by poor or lack of conservation and management of high priority issues/concerns. In the case of areas/islands dedicated to “Eco-tourism”, such as the Boracay Island, “environmental management” seem to have been in place at least for the last few years. However, the schemes/activities seem to be not working well as evidenced by the degradation of the coastal environment. Very recently, Pres. Duterte has declared a closure of Boracay Island for a maximum of 6 months beginning April 20, 2018.

Boracay Island is located on the tip of Panay Island, in the Visayas region. Composed of three barangays (Yapak, Balabag and Manoc-manoc), it has a total land area of 1,006.64 hectares. It is under the jurisdiction of Malay, a municipality in the province of Aklan. Boracay Island is world-renowned for its four-kilometer beach with powdery white sands. A top tourist destination in the Philippines, the island has been named several times the best island in the world by the Travel + Leisure magazine. Tourism in the island started to flourish in the 1970s when there were still no electricity and tourist facilities available. It became more popular in the 1980s to backpackers and foreign visitors. Aiming to promote tourism and cater to the needs of the increasing visitors, the island is now an urbanized tourist destination.

SCIENCE ADVISORY

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As part of its mandate as the country's highest advisory body on science and technology, the National Academy of Science and Technology, Philippines (NAST PHL) conducted a Policy Forum and discussion on the rehabilitation of Boracay Island on 23 April 2018 at Hotel Jen Manila with participants from the Academe, Department of Environment and Natural Resources (DENR), Department of the Interior and Local Government (DILG) and other government office representatives, and NGOs involved in Boracay. The objectives were the following: 1) To assist in the crafting of an appropriate road map for the rehabilitation of the Boracay island coastal ecosystem specific to its current conditions and needs; and 2) To assist in the efforts towards the sustainable development and resiliency of Boracay Island Ecosystem after its rehabilitation.

STATE OF THE BORACAY ISLAND ECOSYSTEM WITH FOCUS ON THE COASTAL ENVIRONMENT

As pointed out in several studies, Boracay Island has turned from a "nature tourist destination" to a "congested mini-metropolis." The interrelated environmental concerns can be classified into four (4) categories, with unsustainable tourism being a common feature in all the problems.

Habitat Degradation and Coral Reef Destruction

The main attraction of Boracay is the long white beach which is at present endangered because of neglect of the environment that constantly supplies the white powdery sand. Benthic cover, i.e. coral cover, seagrasses and mangrove communities, have been degraded due to build-up of infrastructure and non-compliance to existing

environmental laws on the use of coastal environment, such as the requirement for 25 + 5 m clearance or buffer. Coral cover decreased from 50 to 70% in 23 years and are now mostly in poor condition. Forest lands and wet lands have been reclaimed and titled with establishments erected. Comprehensive land use plan for the Island in 2008 had stated that 400 of 1,003 hectares of land should be forest land.

Mangroves swamps/wetlands which provide various ecosystem goods and services, including support to the land and maintenance of water quality, have been converted into housing and other business purposes. Of the six original mangrove swamps in the Island, only one was found to be still intact; the rest are degraded and/or contaminated. Seagrasses beds have been found to be in poor condition. Fish catch has also decreased and most fish are pelagic.

Tourism activities that contribute to degradation of habitats include anchor damage, recreational fishing, and collection of beach material, such as shell and sand.

The increase in built up areas was evident from 1988 to 2018 (CECAM, 2015) with the percent total change for each barangay estimated as 36% for Barangay Yapak, 86% for Balabag, and 69% for Manoc Manoc. The built up areas have been correlated to the increasing numbers of tourists that require amenities, such as hotels and resorts. The built up area and bare soil trend increased while vegetation decreased.

Water Quality

The soil of Boracay Island is porous and coralline, which results in more rapid absorption of sewerage and effluents into the groundwater. This has led to a decrease in the quality of Boracay coastal and ground water and is directly associated with poor waste water management. About 50% of waste water in the Island is treated, and the

Governance and the Island's Carrying Capacity

remaining 50% untreated goes directly to the ground water and coastal waters. Solid waste and waste water management in the Island have been considered as poor to fair. Big resorts are connected to the sewerage system and some to its own sewerage treatment pond (STP). However, some big and small establishments are not connected to the sewerage system or do not have their sewerage treatment pond (STP). The Boracay coastal water is generally eutrophic as evident by nitrate and phosphate concentration and high biological oxygen demand (BOD) levels most of the year, but especially during February to April which coincides with the peak in the number of tourists. Coastal *E. coli* was also found to be high all year round in many areas specially during the months of high tourist influx.

CECAM (2012) showed that 14% of households are without septic tanks, and worse, some informal settlers have been occupying some mangroves areas and discharge waste water to the storm drainage network, causing foul smell and high levels of nutrients in the coastal effluents.

Green Tides / Algal Blooms

The coast is regularly besieged by “green tides” or blooms of algae, reportedly green species followed or sometimes together with blue green algae. The regular blooms have been considered as natural phenomena and usually comes during summer, but now the algal blooms appear all year round and have been growing in severity and duration specially in Station 2 where most establishments are located. Collapse of the blooms bring about added foul odor to coastal area. It has been observed by visitors that collection of huge tons of algal biomass is part of the regular clean up in Boracay during the periods of algal blooms.

The competence and seriousness of local government in the management of a fragile and now critical Boracay Island Ecosystem is viewed as highly important particularly for the protection of the environment which is the basis or bedrock of its existence as a tourist destination. The implementation and enforcement of laws and regulations and permits, a Code of Conduct for the local residents and tourist and best practices for the forest destructions seem to be wanting in Boracay. Proactive management and initiatives of the private sector are quite visible but seem not enough to monitor or sustain the health of Boracay environment for the present and future generations.

Using ground water and coastal water quality as indicators show that the Island seem to have exceeded its carrying capacity and the local government seem unaware or have not considered these factors in the management of the Island. The uncontrolled increase in the number of tourists in Boracay show that carrying capacity for sustainable tourism is not seriously considered.

RECOMMENDATIONS

Short-term – short timelines and targets

1. Target the strict implementation of the 25 + 5-meter coastline buffer zone encroachment ordinance hence, all illegal built up or temporary structures in the island should be removed or stopped.
2. Infrastructure and waste water and solid waste management in terms of septage, sewerage and storm water drainage should be built.
3. Coastal erosion management and coral reef conservation should be started.

4. Start of the rehabilitation of mangrove areas.
5. Start of the protection of seagrass beds.
6. Local governance should be reviewed and improved in line with environmental sustainability.
7. Plan the monitoring and regulation of tourism-related activities. The carrying capacity of the island should be determined and implemented.

Long term Recommendations – After Rehabilitation

1. Use the “ecosystem approach”: the ecosystem should include socio-economic, cultural, and environmental inter-connectively
2. Regular monitoring and research on all major aspects of the environment using appropriate methods and technologies, define targets or end points, and do cost-benefit analysis
3. Undertake rehabilitation consistent with correct conservation practices. Coral reef rehabilitation will require more than one year.
4. Provide appropriate logistical support to water quality in consideration of the risk to public health.
5. Give priority to education and training for the promotion of best practices in environmental monitoring and management. Community awareness particularly of resource users should be considered.
6. Local functions should be monitored and supervised by national agencies to ensure sustainable development and resilience of Boracay Island.
7. The strategic management scheme for Boracay can be used as a model for the other tourist destinations in the country.
8. Appropriate experts should be tapped as resource persons in the planning and

management of ecotourism in Boracay Island.

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