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Level of Compliance and Implementation on Sustainable Coastal Tourism for Marine Biodiversity Conservation: Maniwaya Island, Sta. Cruz, Marinduque, Philippines

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ABSTRACT

This study is conducted by the researchers to identify whether sustainable coastal tourism for biodiversity conservation is evident in the island of Maniwaya in Sta. Cruz, Marinduque. The Philippine tourism industry is a major source of all kinds of recreational and income-generating activities, and biodiversity is then recognized as vital to tourism. That is why the researchers try to study Maniwaya Island and what's new in it and how it will affect the biodiversity of the island. The researchers used descriptive design and quantitative method to identify the level of compliance and implementation of existing laws, rules, and regulations which overall aim is to achieve sustainable coastal tourism for biodiversity conservation in the Island. Results revealed that the level of compliance in terms of the residents and barangay official's perspective is satisfactorily compliant and above compliant on the part of the resort owners. As for the level of implementation of Chapter

IV Section 27 of Republic Act 9147 of 2001 among concerned inter-agencies in Maniwaya Island, it is clearly shown thru the results that they are in an advanced level of implementation. It was recommended that the concerned inter-agencies should work hand in hand to further strictly implement existing policies and promulgate new policies, guidelines, and ordinances.

KEYWORDS

Sustainable Tourism, Biodiversity Conservation, Maniwaya Island, Marinduque, Philippines

INTRODUCTION

As far as the Earth's biological diversity is concerned, the Philippines is considered a megadiverse country rivaled only by a few countries in the world when it comes to a variety of ecosystems, species and genetic resources. (DENR – BMB, 2016). No wonder last 2017, our Philippine tourism arrivals almost reached an all-time high at 6,620,908 foreign tourists marking the unprecedented growth of our country's tourism industry, which is almost 11% higher than the previous year's arrivals of 5,967,005 (Department of Tourism, 2018).

In Marinduque, the heart-shaped island, which is one of the provinces in the MIMAROPA region, its tourism industry is now becoming one of the busiest in the country, and it has great prospects in developing tourism (Zulueta, 2012). Maniwaya Island, one of the few islets closest to Metro Manila, offers powdery, white sand beaches accessible by land and sea (Querubin, 2012).

As the Philippines derives most of its large benefits from its ecosystems, threats to its biodiversity are nowadays experiencing a general decline (Conservation of Biological Diversity, 2018). This is why our country is also considered as a biodiversity hotspot since it continues to experience an alarming rate of destruction of these important resources brought about by overexploitation, deforestation, land degradation, climate change, and pollution (including biological pollution), among others (DENR – BMB, 2016).

Although it is stated in the World Travel and Tourism Council report that tourism generated almost 11% of Gross Domestic Product (GDP) wherein there are about 200 million people who earn their livelihoods through the tourism industry (Adhikari & Pratikshya, 2018). On the other hand, biodiversity is increasingly under pressure from such human activities, and experts estimated

that the current rapid loss of biodiversity is between 1,000 and 10,000 times faster than the natural extinction rate (Tewes–Gradi & Galeen, 2016).

Linkages between biodiversity and tourism promotion must be well thought out, and key stakeholders consulted before tourism promotion activities are taken on. The primary purpose of this is for them to adopt responsible tourism strategies to promote sustainable tourism in the locality (Adhikari & Kandel, 2018).

OBJECTIVE OF THE STUDY

The researchers' purpose for conducting this study is to provide Maniwaya Island's locality with the information needed to act towards marine biodiversity conservation while implementing sustainable coastal tourism within the area.

METHODOLOGY

The study sought to discover what's new in Maniwaya Island as an emerging tourist destination. Specifically, the researchers found determining whether sustainable coastal tourism for marine biodiversity conservation is evident in the community, particularly in terms of the level of compliance and implementation of governing laws. Furthermore, the study sought to establish linkages between biodiversity and tourism promotion that are well thought out as relevant stakeholders. The whole community is consulted before tourism activities continue to be taken on (Adhikari & Pratikshya, 2017) regardless of the outcomes or findings of the study. The study is divided into three (3) phases, and each phase contains processes.

1. Phase I is used to identify what's new the Island is an emerging tourist destination as well by measuring the resident and tourist perceptions of the said barangay regarding the changes that it had undergone since 2009. Through such a process, it will be able to optimize the benefits of ecotourism for the local community and environment. It is also one way of learning about what acceptable change is through an interview. Included also is the determination of why people had these kinds of perceptions given such changes.
2. Phase II measured the level of compliance by the concerned inter-agencies (e.g., resort owners, barangay officials, and residents) in Maniwaya Island to ascertain its current status in terms of sustainable coastal tourism for marine biodiversity conservation.

3. Phase III identified the level of implementation of Chapter IV Section 27 of Republic Act No. 9147 of 2001, which is perceived by the concerned inter-agencies (e.g., resort owners, barangay officials, and residents) in Maniwaya Island.

In the process of phases II and III, the tourists were not used as respondents since they were not concerned in the management, compliance, and implementation of the law as mentioned earlier, rules and regulations.

Study Area

The study was conducted in Maniwaya Island, situated in the northeastern part of the Municipality of Santa Cruz, Marinduque. Approximately 3.5 kilometers (km) on the east is the island of Mongpong, 3 kilometers (km) southwest is the island of Polo. About 14 kilometers (km) northeast is the Municipality of General Luna, Quezon, its distance from the Poblacion is approximately 15 kilometers (km). It can be reached by traveling inland up to Buyabod Port and pump boats, which routing daily to the island. The distance from Buyabod port is approximately 10 kilometers (km), and it takes 30 to 45 minutes ride. The island has at least 359 households (Zulueta, 2012).

Population and Sample of the Study

Respondents of the study included the owners/managers of the nine (9) resorts, ten (10) barangay officials, eleven (11) residents, and ten (10) tourists of Maniwaya Island, Sta. Cruz, Marinduque. The researchers used convenient sampling to determine the number of respondents. On the other hand, as for the resort owners, the researchers utilized the purposive sampling for the respondents' total enumeration. The researchers oriented the respondents before distributing the questionnaires.

Questionnaire Development

Given the problem's statement, the first three (3) questions mentioned in this study have several sub-questions and criteria included. Survey questions were able to address each specific item or criteria under each area. The questionnaire is lifted directly from the Sustainable Coastal Tourism Handbook for the Philippines (Huttcheet al., 2002), given that there are some revisions made.

All survey questions are tied to the specific laws, rules, and regulations given in the Sustainable Coastal Tourism Handbook for the Philippines (Huttcheet al.,

2002) and RA 9147. The content and wording of most of the items are directly traceable to the latter.

Measurement

The measurement of each of the three (3) areas is operationalized using a scale of items. Each item is measured using a five-point Likert scale except for the first question along with its sub-question since the latter only measured the resident, barangay officials, resort owners and tourist perceptions given the changes that it had undergone in terms of: “Yes,” “Somewhat” and “No.” However, for the remaining questions, there were three types of measurements used:

1. The way to measure the level of compliance by the different inter-agencies in Maniwaya Island was done using a survey questionnaire feedback from the respondents on Likert – type 1 to 5 scale, ranging from 1 = Non-compliant, 2 = Partially complaint, 3 = Compliant, 4 = Satisfactorily complaint, and 5 = Above compliant. Here, the respondents attempted to quantify their level of compliance using multiple-item scales. Each criteria category has multiple items to address, and each item has several to multiple areas. Data were collected in terms of the scalar survey feedback, and the respondent reaction to each policy will be aggregated to the area level of the criteria. Each of the areas has a multi-item statement to respond to.
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Data Collection Methods

The researchers used the descriptive type of research to generate information, focusing only on the level of compliance and implementation. The researchers will also try to use the interpretative method to allow them to recognize the connection between the level of compliance and enforcement of the community towards the attainment of sustainable coastal tourism for marine biodiversity conservation.

At the same time, the researchers also used a particular checklist which is adapted from the Sustainable Coastal Tourism Handbook for the Philippines (2002) in determining what's new in Maniwaya Island as an emerging tourist destination in the country. Such a method will optimize the benefits of ecotourism for the local community and environment. It will try to focus the market information and linkages, planning, local participation and benefits, stakeholder education, and natural resource management.

The researchers were able to interpret information from questionnaires with close-ended questions, and this is classified as both a quantitative and qualitative type of research. Detailed insights are required from the participants who are suited because people have different perspectives in dealing with biodiversity conservation. The method is also sensitive, where respondents may not want to talk about topics in groups.

Interpretation and Data Analysis

For the interpretation and data analysis, the researchers used the following range of scores and their corresponding verbal descriptions.

Table 1. Range of scores and its corresponding verbal descriptions

Scale	Range of Scores	Verbal Description/s		
		Level of Compliance	Level of Observance	Level of Implementation
5	4.51 – 5.00	Above compliant	Always observed	Advanced level of implementation
4	3.51 – 4.50	Satisfactorily compliant	Often observed	High level of implementation
3	2.51 – 3.50	Compliant	Sometimes observed	Medium level of implementation
2	1.51 – 2.50	Partially compliant	Rarely observed	Low level of implementation
1	1.00 – 1.50	Non – compliant	Never observed	Not implemented

RESULTS AND DISCUSSION

Maniwaya as an Emerging Tourist Destination in the Country

As an emerging tourist destination, several areas were considered in determining what's new in Maniwaya Island. Resident and tourist perceptions of the island regarding the changes/trends were also determined to identify possible areas of improvement not only in terms of achieving sustainable coastal tourism but also in ways of conserving the marine biodiversity in the area. Such methods will provide economic incentives to a wide group of local people. Still, it will also catalyze environmental awareness and commitment by the local people and the tourists in protecting and conserving the natural resources on which their livelihood depends (Huttcheet al., 2002).

Table 2. Resident and tourist perceptions of Maniwaya island as an emerging tourist destination

Questions	Yes	%
a. Ecotourism resources for tourist attraction	32	80
b. Competitiveness of the area		
b.1. Attraction	37	92.5
b.2. Accommodation Services	36	90
b.3. Food	26	65
b.4. Souvenir	31	77.5
b.5. Experience	38	95
b.6. Tour Package Price	39	97.5
c. Area is accessible to tourists safely, reliably and regularly	37	92.5
d. There are tour operators present	40	100
e. There are dedicated tourism workers	39	97.5
f. Community is involved in decision-making on ecotourism development in the area	31	77.5
g. Community shares in the economic benefits	32	80

Table 2 shows the majority of the respondents agreed that Maniwaya is indeed capable of being considered as one of the must-see tourist destinations. Besides the residents' hospitality, there are other must-see places on this island, Palad sandbar that changes its shape depending on the prevailing winds and flow of seawater.

Given a 95 percent approval from the respondents in terms of experience, (Querubin 2012) supported this finding, that Maniwaya can provide tourists a one of a kind experience. Divers can also marvel at similar rock pillars off nearby Mongpong Island. Similar to the other concerned areas, the accommodation also received a favorable response from the respondents.

Tourist operators received the highest favorable percentage among all areas not only because there are dedicated tourism workers and boat operators who are always available, but at the same time, they are also involved when it comes to decision-making on ecotourism development in this particular area. In terms of the community share in the economic benefits of the island's emerging tourism, not only that resort owners have truly benefited from this business, residents of different ages. They were also allowed to be immersed in this development on the island, given the 80 percent satisfaction rate.

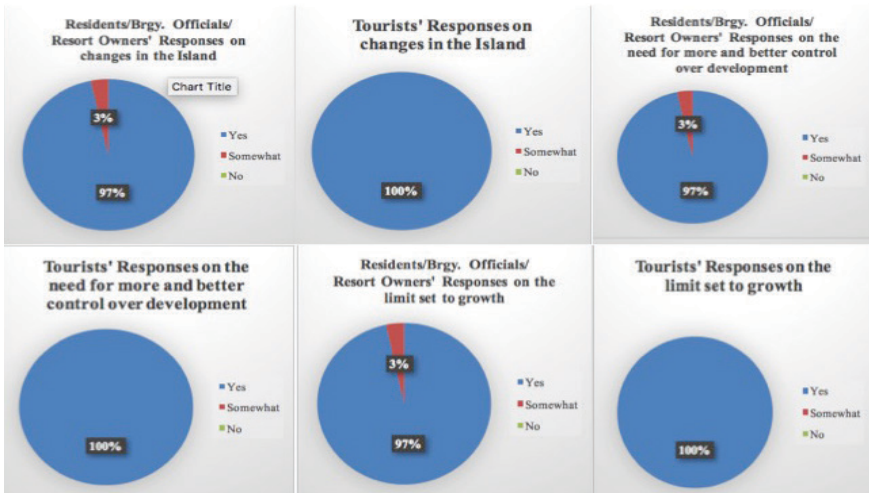


Figure 21, 22 and 23: Resident/Brgy. Official/Resort owner and tourist perceptions of Maniwaya Island

The Figures show what acceptable change is given a particular issue. This was done to identify the varied perceptions of the people regarding the changes. Given the results, most of the respondents surveyed were pleased with the general trends of tourism development in the area. The residents emphasized that such changes have allowed them to establish income-generating activities, which will help them sustain their families' needs.

However, respondents are concerned with the changes brought about by this sudden emergence when it comes to the environment due to the unprecedented and unregulated degradation of the island. According to Huttche et al. (2002), if the changes in such areas as Maniwaya Island will remain unchanged, it is most likely that tourist arrivals in the area may automatically drop, and residents may experience lower incomes from tourism operators. Given these statements, it is only acceptable to recognize the percentage results regarding the issue of placing a limit to set growth. Although some of the respondents are still confused as to what may happen if the island's population continue to rise, they are even inclined with the present changes that Maniwaya Island is currently giving both to the tourism sector and biodiversity without taking into consideration what may be the outcomes after this.

As stated by one of the tourists during the survey (pers.comm., 2018), they agree when it comes to the fact that there is a need for more and better control over the development, especially in terms of accommodation, livelihood and job opportunities and most especially, electricity.

Sustainable Coastal Tourism for Marine Biodiversity Conservation: Maniwaya Island Perspective

To determine the current status of Barangay Maniwaya in achieving the nation's goal towards sustainable coastal tourism for marine biodiversity conservation, such as coastal management, tourism-oriented establishment, site use, and design, sewage, wastewater and storm water management, solid waste disposal, environmental control, and auditing and environmental management were considered. Such areas were then determined by asking various guidelines to the concerned inter-agencies (e.g., residents, barangay officials, and resort owners) to achieve ecotourism and biodiversity conservation.

Table 3. Level of compliance by the concerned inter – agencies / stakeholders in Maniwaya Island towards a sustainable coastal tourism for marine biodiversity conservation: Residents and Barangay Officials Perspective

Criteria	Verbal Description
I. Coastal Management	
<i>A. Community Stakeholders and People's Organization</i>	Satisfactorily Compliant
<i>B. Local Government Unit (Barangay)</i>	Satisfactorily Compliant
II. Sewage, Wastewater and Stormwater Management	
Above Compliant	
III. Solid Waste Disposal	
A. Solid waste is separated to categories	Satisfactorily Compliant
B. Compost pit must be located at least 25 meters away	Above Compliant
IV. Environmental Control and Auditing	
	Compliant
	Satisfactorily Compliant

The distribution of responses showed that the majority of the respondents were indeed satisfactorily compliant. This indicates that the residents and barangay officials still need to ensure the conservation and inclusion of low-

income communities towards biodiversity conservation and sustainable tourism development. They should always be informed and integrated on all levels of tourism policy or if they have continuously been kept out of conservation areas. Related economic opportunities, just like in the past, they will only be driven deeper into poverty, and sometimes even lead them to do harmful activities which are considered threats to nature.

During the interview with the respondents, they mentioned that although there has been a project with regards to proper solid waste disposal in the past, there lies the truth that as of the time. This study was conducted; most of the houses visited on the island do not have proper segregation of waste products. However, in terms of their barangay hall, it is evident that there's an existing Materials Recovery Facility (MRF) in this area for residents to use as they abide by the law, which concerns the development of proper solid waste disposal. Most of the septic tanks were also placed less than 50 feet from tributaries to drinking water supplies and not less than 25 meters away from any water source, as observed by the researchers during the survey at the residents' homes.

The same goes for the compost pit, wherein it must be located at least 25 meters away from any water source. The residents are abiding by this rule, for they are aware of the possible consequences that may result to if ever they will not follow.

Therefore, it is a must for the concerned inter-agencies in the development of Maniwaya Island as an emerging tourist destination to consider the following principles as one of their priorities in defining what responsible tourism is as highlighted by the World Wildlife Fund (WWF) (The European Union Business and Biodiversity Platform, 2010):

Tourism should be part of a sustainable development strategy and plan.

- Natural resources should be used sustainably.
- Pollution and consumption should be kept as low as possible.
- Tourism should respect the cultural values of the local population and enable them to participate in economic prosperity.
- Tourism should be informative and promote respect for local culture and the environment.

Table 4. Level of compliance by the concerned inter – agencies / stakeholders in Maniwaya Island towards a sustainable coastal tourism for marine biodiversity conservation: Resort Owners Perspective

Criteria	Verbal Description
I. Coastal Management	Satisfactorily Compliant
<i>A. Community Stakeholders and People's Organization</i>	Above Compliant
II. Tourism – oriented establishment	Above Compliant
III. Site Use and Design	Above Compliant
IV. Sewage, Wastewater and Stormwater Management	Above Compliant
V. Solid Waste Disposal	Above Compliant
VI. Environmental Control and Auditing	Above Compliant

Table 4 shows the resort owners' perspective with regards to the level of compliance towards sustainable coastal tourism for marine biodiversity conservation. With a grand mean equal to 4.5, most of the resort owners in Maniwaya Island are above comply with the existing rules and regulations that they should strictly follow and comply with to achieve responsible tourism and biodiversity conservation. Such observations were based on the interview they had with the researchers during the conduct of this study. The following are some of the observed benefits of responsible tourism and biodiversity conservation; diversifying and improving services and products, providing a new angle for marketing and promotion, improving public opinion and overall perception of the establishment, differentiating them from competitors and acting as a role model of a responsible and innovative business, enabling companies to reach new clients, attracting intertwining businesses and therefore creating dynamics of economic growth (The European Union Business and Biodiversity Platform, 2010).

Given such benefits, the researchers were hoping that this will further guarantee continuous sustainable management of tourism resources, thus ensuring long – term use of tourism sites and resources. It will also promote responsible behavior among tourists and locales.

Table 5. Evidences of coastal tourist development activities within selected coastal habitats in Maniwaya Island

Criteria	Verbal Description
I. Coral Reefs	
a. Reef walking	Rarely Observed
b. Collection of souvenirs from reef	Never Observed
c. Overfishing to supply restaurants and markets	Never Observed
d. Land clearing for construction	Never Observed
e. Freshwater influx from poorly treated sewage and improper disposal methods	Never Observed
II. Seagrass beds	
a. Boat anchoring	Never Observed
b. Recreational activities	Never Observed
c. Increased runoff	Never Observed
d. Sewage / wastewater discharge	Never Observed
	Never Observed

Table 5 shows the coastal ecosystems common in Maniwaya Island and their linkages with coastal tourist development activities, a must in planning for development. It is concluded that such tourism-related events were still never observed on the island since, according to (Querubin 2012), Maniwaya is still untouched by commercial developers. However, if Maniwaya Island begins to support unsustainable tourism development unknowingly and the livelihood needs of low-income communities continue to rise due to insufficient resources provided to them by the environment, such coastal habitats will become biodiversity hotspots (Tewes-Gradl & Galeen, 2016). This is because disruptions in these particular habitats can lead to severe environmental damage (Maragos et al. 1983).

The potential impacts on coastal ecosystems of various tourist development activities are summarized in Table 5.1.

Table 5.1. Potential environmental impacts from coastal tourist development activities

Coastal habitats	Environmental impacts	Tourist development activities which may cause these impacts
Coral reefs	<ul style="list-style-type: none"> ● Physical damage to coral reefs and collection of reef organisms beyond sustainable limits ● Increase in freshwater runoff and sediments ● Introduction of waterborne pollutants 	<ul style="list-style-type: none"> ● Reefwalking, collection of souvenirs from reef, overfishing ● Land clearing for construction ● Freshwater influx from wastewater pipes from poorly treated sewage and improper disposal methods
Seagrass beds	<ul style="list-style-type: none"> ● Physical alterations ● Excessive sedimentation or siltation ● Introduction of excessive nutrients or pesticides 	<ul style="list-style-type: none"> ● By boat anchoring, recreational activities, increased runoff ● Sewage, wastewater discharge

Adapted from CCD (1997) – Sustainable Coastal Tourism Handbook for the Philippines (2002)

Table 6. Level of implementation of Chapter IV Section 27 of RA 9147 of 2001 among the concerned inter – agencies / stakeholders in Maniwaya Island

Criteria	Verbal Description
Section 27. Illegal Acts	
Unless otherwise allowed in accordance with this Act, it shall be unlawful for any person to willfully and knowingly exploit wildlife resources and their habitats, or undertake the following acts;	
(a) killing and destroying wildlife species, Advanced Level of Implementation	
(b) inflicting injury which cripples and/or impairs the reproductive system of wildlife species;	
(c) effecting any of the following acts in critical habitat(s)	
(i) <i>dumping of waste products detrimental to wildlife;</i>	Advanced Level of Implementation

(ii) <i>squatting or otherwise occupying any portion of the critical habitat;</i>	Advanced Level of Implementation
(iii) <i>mineral exploration and/or extraction;</i>	Advanced Level of Implementation
(iv) <i>burning;</i>	High Level of Implementation
(vi) <i>quarrying</i>	Advanced Level of Implementation
(d) introduction, reintroduction or restocking of wildlife resources;	Advanced Level of Implementation
(e) trading of wildlife;	Advanced Level of Implementation
(f) collecting, hunting or possessing wildlife, their by-products and derivatives;	Advanced Level of Implementation
(g) gathering or destroying of active nests, nest trees, host plants and the like;	Advanced Level of Implementation
(h) maltreating and/or inflicting other injuries not covered by the preceding paragraph; and	Advanced Level of Implementation
(i) transporting of wildlife.	Advanced Level of Implementation
	Advanced Level of Implementation

Island strictly implement the Republic Act No. 9147 of 2001. It is concluded that the concerned inter –agencies/stakeholders are at an advanced level of implementation with regards to RA 9147. The people of Maniwaya has taken concern for biodiversity since it is indeed integral to sustainable development, competitiveness, economic growth and employment, and improved livelihoods. Many of the services that biodiversity and ecosystems are currently threatened. However, compared to other sectors, the tourism sector is quite advanced regarding its approach to biodiversity (The EU Business and Biodiversity Platform, 2010).

Seeing this result, tourism in Maniwaya Island may not have yet influence biodiversity loss, but it has already played a vital role in conservation. Tourism has a large potential indeed to contribute to sustainable socio-economic development and environmental conservation since it can support the protection of natural resources. It can also help to maintain livelihoods and preserving cultural practices. Opportunities arise for education and awareness-raising to understand and respect cultural diversity along with biodiversity.

CONCLUSIONS

This study was conducted to determine what's new in Maniwaya Island as an emerging tourist destination in the country. Furthermore, this study sought to determine not only the level of compliance of the concerned inter-agencies in Maniwaya Island regarding the country's aim to promote sustainable coastal tourism. This would determine what particular recommendations in the form of policies should be established and implemented for the continuous improvement and development of Maniwaya Island in terms of sustaining its coastal tourism while conserving the marine biodiversity in the area.

From the findings, the majority of the respondents agreed that Maniwaya is indeed capable of being considered as one of the must-see tourist destinations comparable with other popular beaches in the country. As an emerging tourist destination, Maniwaya Island attracts tourists from all around the world due to its one kind of attraction. On the other hand, results also revealed that the level of compliance in terms of the residents and barangay officials' perspective is satisfactorily compliant and above compliant on the part of the resort owners. As for the level of implementation of Chapter IV Section 27 of Republic Act 9147 of 2001 among concerned inter-agencies in Maniwaya Island, it is clearly shown thru the results that they are in an advanced level of implementation.

RECOMMENDATIONS

The study has shown that most of the respondents agreed that Maniwaya is indeed capable of being considered one of the must-see tourist destinations. With this, the researchers recommend wide-scale information dissemination and full cooperation among the locality, municipality, and provincial government. Furthermore, the promotion of the existing tourist destination and discovery of other tourist development activities and sites should also be given utmost priority.

On the other hand, results also revealed that the level of compliance in terms of the residents and barangay official's perspective is satisfactorily compliant and above compliant on the part of the resort owners and as for the level of implementation among concerned inter-agencies, it is clearly shown that they are in an advanced level of implementation. The advice is that they have to sustain and alleviate the level of compliance and implementation level among the parties. Moreover, it is highly recommended that the concerned inter-agencies should work hand in hand to further strictly implement existing policies and promulgate

new policies, guidelines, and ordinances such as that of an act that will cater for the rehabilitation and preservation of endemic marine biodiversity species and policy guidelines on the proper coastal waste management that will serve as an embodiment of sustainable ecotourism in the near future.

Likewise, the researchers recommend further studies on species biodiversity mapping within Maniwaya Island's premises as the basis for the strict implementation of RA 9147 of 2001 and other related laws on biodiversity conservation.

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