

Assessment on the Impact of Marine Pollution to the Fisher folks, Coastal-Based Settlers, and Business Establishment Owners in the Province of Biliran, Philippines

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ABSTRACT

This study assessed on the impact of marine pollution to the fisherfolks, coastal-based settlers, and business establishment owners in the Province of Biliran. Descriptive research design was used in this study. The questionnaire composed of two (2) parts: Part I. The causes of marine pollution and Part II are the impact of marine pollution to the respondents. There were eighty (80) respondents involved and randomly selected within the eight (8) municipalities in Biliran. Results, revealed that majority of the municipalities were very much affected due to improper disposal of garbage in which plastic was the main causes of marine pollution. In eight (8) municipality, most fisher folks were denoted very affected that range up to fifty-five (55%) percent in overall assessment. Thus, it is strongly recommended that the Local Government Unit (LGU) in each municipality crafted Municipal Ordinances/Law(s) regarding prohibition of using plastics in all municipalities in the Province of Biliran.

INDEX TERMS- business establishment owners, coastal-based settlers, fisher folks, impact, marine pollution

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I. INTRODUCTION

Biliran Province during the Spanish period was abundant of the native grass called “borobiliran”, wherein the word “Biliran” has been derived out of this grass. Biliran is an island connecting the mainland Leyte by bridge at Latitude 11° 28’ 00” North and Longitude 124° 28’ 31” East. The seafarers who pass by through this narrow strait of Biliran would admire because of clear water, fertile plains and lush green hills of the island. The province covers eight (8) municipalities namely: Naval, Biliran, Cabucgayán, Caibirán, Culaba, Kawayan, Almería, and Maripipi. It is used to be religious, cultural and political in which Naval became the capital of the province and center for commercial trading, educational, and provincial government offices.

However, Biliran Province is now facing this problem due to man’s exploration and exploitation of natural resources in order to sustain basic needs. But, once these activities existing, meaning to say, it is an evidenced that the place is considered progressive in various industries including increase of population. Further, this man-made activity involving the process of exploitations, means of product, and even utilization or consumption of produced products are usually created garbage, sewage, toxic wastes and hazardous wastes [1]. Certainly, we produce large amounts of plastics each year. They continually end up as waste in the environment, and the polymers they comprise decompose extremely slowly. Large particles fragment into smaller pieces known as microplastics – technically 5mm in diameter or less. These are now recognized as one of the most prevalent human-made pollutants in marine environments across the world [7].

The United Nation defined marine pollution an introduction by man, directly or indirectly of substances or energy into marine environment resulting deleterious effects, such as: hazards to human health, hindrance to marine activities, impairment of the quality of water for various uses and reduction of amenities [6]. Further, the word “pollution” is something that makes a pure thing impure [2]. Marine pollution also is an introduction of unwanted substances into the marine environment will result deleterious effects to the living resources as well as to social human being [3].

Most of man-made activities in and around seas and oceans will lead to some impacts on marine waters [4] such as wastes like plastics, bottles, cans and other related waste would cause hazardous and harmful to all, especially species living in and people who are nearby the coastal [1]. The Coastal areas are vital for many local communities and indigenous people. More than half the world’s population lives within 60 km of the shoreline, and this could rise to three quarters by year 2020 [4].

Then, wastes directly dumped into waterways can contaminate aquatic inhabitants such as fish, mollusk in the rivers, lakes, seas and oceans [1]. It means that marine pollution has massive effects or impacts towards the coastal-based settlers, fisherfolks, establishment owners, marine ecosystem and environment, respectively. The possible outcomes of this marine pollution would lead to unhealthy living to human life, oxygen depletion which kills marine species, loss of income and even loss of life.

Thus, this research study on the impact of marine pollution is conducted to help the Local Government Unit (LGU) in Eight (8) Municipalities in the Province of Biliran to create action plan based on these results.

II. OBJECTIVES OF THE STUDY

The study aimed to assess the impact of marine pollution in eight (8) Municipalities in the Province of Biliran. Specifically, it sought to answer the following questions:

1. What is the causes of marine pollution on the coastal areas in eight (8) Municipalities in the Province of Biliran as to:
 - 1.1 Plastic;
 - 1.2 Bottles;
 - 1.3 Can; and
 - 1.4 Others
2. What is the impact of marine pollution in the Province of Biliran as to:
 - 2.1 Fisherfolks;
 - 2.2 Coastal-based settlers; and
 - 2.3 Business establishment owners nearby the coastal areas.

III. METHODOLOGY

3.1 Research Design

This study used descriptive research design. The researcher utilized standardized questionnaire and conducted a supplemental interview among the fisherfolks, coastal-based settlers, and business establishment owners to measure and determine the causes and impact of marine pollution in eight (8) municipality affected by marine pollution in the province. Questionnaires were distributed randomly selected respondents in eight municipalities in the Province of Biliran.

3.2 Research Environment

The study is conducted in the Province of Biliran, Philippines in Eight (8) Municipalities namely: Naval, Biliran, Cabucgayan, Caibiran, Culaba, Kawayan, Almeria, and Maripipi.

3.3 Research Respondents

There were eighty (80) respondents randomly chosen in eight municipality comprising: fisherfolks, coastal-based settlers, and business establishment owners.

3.4 Research Procedure

3.4.1 Data Gathering

The data were valid and reliable because the researcher together with other research aids of the Department of Maritime Education were personally went to the identified areas to administer the instruments to gather substantial information about the causes and impact of marine pollution in the Province. Moreover, researcher conducted one-on-one interview to the respondents on how these things affect to their health, business, economic status, and in the environment, respectively.

3.4.2 Treatment of Data

The data were collected from the respondents in each municipality. The researcher used exact statistical treatment and it has been analyzed qualitatively using some reports, scientific outputs, published articles as its support to find out the impact of marine pollution in the Province of Biliran, Philippines.

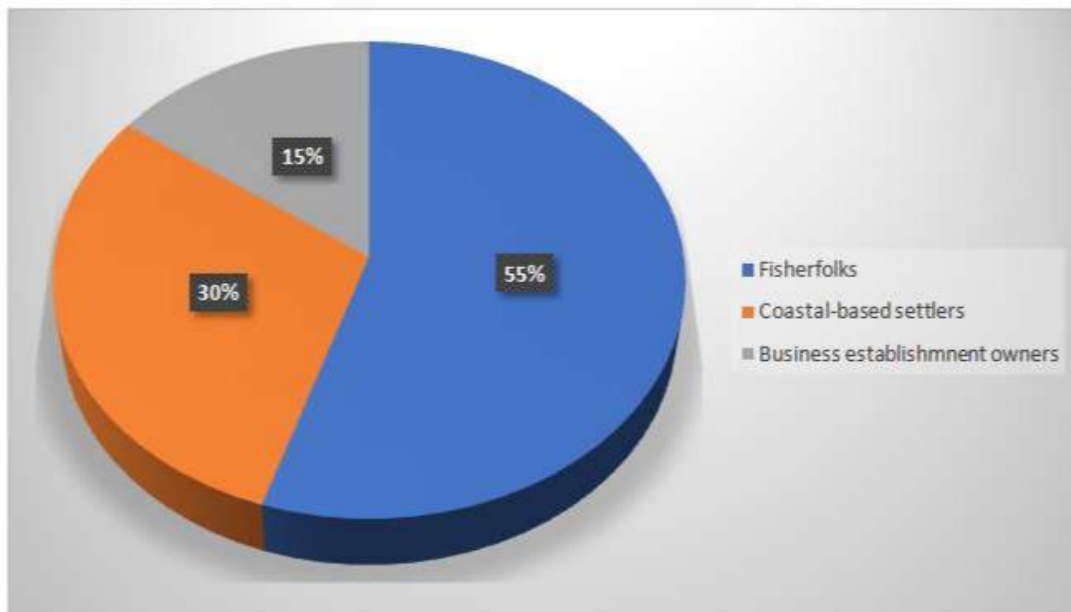
IV. RESULTS AND DISCUSSIONS

TABLE 1 Causes of Marine Pollution by Municipality in the Province of Biliran



Table I, shown the causes of marine pollution by municipality in the Province of Biliran. In fact, out of eight (8) municipalities in the Province of Biliran. Plastics obtained eighty (80%) percent in which appeared the highest causes of marine pollution due to improper disposal of garbage, especially in the Municipality of Culaba. It is possible because this municipality has lack of garbage facility and it is also facing to the nearby cities (*Catbalogan City, Calbayog City, and Tacloban City*) in mainland Leyte. Plastics, bottles, cans, and others came from these cities because of the dynamic external forces such as wind, wave & typhoon. However, other causes like wood, foam and other forms of garbage were denoted the lowest percentage contribution when it comes to marine pollution in all municipalities in the province. Results supported that plastic debris kills 100,000 marine mammals and 2 million sea birds die annually [5]. Moreover, solid waste likes plastics are the major marine pollutant not only in the Province of Biliran but as well as other major cities such as Quezon City, Pasay City, Marikina City, and other cities in Metro Manila [1].

TABLE 2 Impact of Marine Pollution to Fisherfolks, Coastal-Based Settlers, Business Establishment Owners in the Province of Biliran



As shown in Table 2, the most affected respondents were fisherfolks which obtained fifty-five (55%) percent, however much less affected was business establishment owners with fifteen (15%) percent. The fisherfolks were directly affected because their sources of income came from seas, lakes, and rivers where they could get their products. When these areas were polluted, loss of income occurred, price increase of the products (fish, shells, etc.), because of low demand in the market. Then, thirty (30%) percent of the respondents under coastal-based settlers live in would experience possible effect such as unhealthy living, skin disease, and other health problems. Perhaps, business establishment owners also decided to close their business because no more customers will come in due to water pollution problems. This finding supported that most of the man-made activities in and around seas and oceans will lead to some impacts on marine waters [3].

V. CONCLUSION

Plastic is the main causes of marine pollution in eight (8) municipality, most affected respondents were fisherfolks denoted fifty-five (55%) percent by marine pollution, and there was significant relationship between causes and effect of marine pollution in the Province of Biliran. Majority of the municipality in Biliran Province were much affected of this problem because of improper disposal of garbage that causes marine pollution.

Thus, it is strongly recommended that the Local Government Unit (LGU) in each municipality crafted Municipal Ordinances/Law(s) regarding prohibition of using plastics in all municipalities in the Province of Biliran. Further, this law(s) should properly implement and monitor by the agency in-charge.

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