



# POLICY RECOMMENDATION GUIDELINES

on Solid Waste Management  
and Promotion of Sustainable  
Packaging for Bacolod City  
and Iloilo City

.....  
Development of Voluntary Guidelines on  
Sustainable Packaging Towards  
Reduction of Marine Litter and Promoting  
Packaging from Alternative Materials  
Through Market-Based Approach



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# LIST OF ABBREVIATIONS

CEAP	Circular Economy Action Plan
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DTI-BPS	Department of Trade and Industry - Bureau of Philippine Standards
EPR	Extended Producer Responsibility
FDA	Food and Drug Administration
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPP	Green Public Procurement
GSO	General Services Office
IEC	Information, Education and Communication
IGES	Institute for Global Environmental Studies
IIR	Implementing Rules and Regulations (IRR)
IRDC	Iloilo River Development Council
LCA	Life Cycle Analysis
LGU	Local Government Unit
MRF	Materials Recovery Facility
MSME	Micro, Small and Medium Enterprises
NELP-GCP	National Ecolabelling Programme - Green Choice Philippines
NGO	Non-Government Organization
NSWMC	National Solid Waste Management Commission
PARMS	Philippine Alliance for Recycling & Material Sustainability
PCEPSDI	Philippine Center for Environmental Protection and Sustainable Development, Inc.
PPE	Personal Protective Equipment
PRO	Producer Responsibility Organization
R&D	Research and Development
RA 9003	Ecological Solid Waste Management Act of 2000
RA 8749	Philippine Clean Air Act of 1999
RA 9512	National Environmental Awareness and Education Act of 2008
RA 7160	Local Government Code of 1991
RCA	Residual Containment Area
RTD	Roundtable Discussion
SCP	Sustainable Consumption and Production
SDG	Sustainable Development Goals
SWM	Solid Waste Management
SWMB	Solid Waste Management Board
TWG	Technical Working Group
UN	United Nations
WTE	Waste-to-Energy



# EXECUTIVE SUMMARY

As the Philippine economy expands and develops, rapid consumption and production transpire to meet the demand of the population. As a result, there is an obvious increase in solid waste, evident on street walks, landfills, and coastal areas. The national government developed the Ecological Solid Waste Management Act of 2000 (RA 9003) to serve as one of the pillars of the country's environmental management. The Act introduces a systematic approach to reduce solid waste and mandates the local government units (LGUs) to implement it.

The national government, LGUs, private sectors, and non-government organizations (NGOs) are collectively striving to reduce solid waste and marine litter by implementing projects and policies that provide support to different local initiatives, integrating sustainable consumption and production (SCP) solutions to solid waste management (SWM). This policy recommendation guidelines (referred herein as "Document") intends to provide an overview of the existing programs and policies relating to SWM, and frameworks that can promote sustainable packaging from the national level down to the local level of Bacolod City and Iloilo City.

Furthermore, this Document analyzes the challenges of both localities in terms of (1) sustainable design and clean production, (2) resource regeneration and protection, (3) improvement of waste management, (4) promotion of alternative packaging products, and (5) public awareness-raising on SWM. The findings of this Document reveal that to facilitate effective policy implementation, there should be a constant means to closely monitor the activities designed to achieve the targets of SWM Plans complemented by sustainability approaches. As most of the LGUs experience lack of financial capacity to build infrastructures, utilization of available grants and investments can help in diversifying the projects conducted at the ground level. In addition, the citizens should be guided with the right information so that they can also make the right actions. Conduct of regular information, education, and communication (IEC) campaigns about environmental concerns, proper SWM and shift to alternative packaging demonstrates an increase in the level of the awareness of the public.



# CHAPTER 1

## INTRODUCTION

### 1.1 Rationale

Marine litter has been globally recognized as one of the urgent environmental issues that need to be addressed. Some of the major causes of the marine litter came from land-based activities such as waste released from dumpsites, littering of coastal areas, and mass tourism among others. Further deterioration of the marine ecosystem leads to biodiversity loss and can potentially affect the market and economy, especially of the coastal communities<sup>1</sup>. As a response, the Philippine Center for Environmental Protection and Sustainable Development, Inc. (PCEPSDI) implements a project on the “*Development of Voluntary Guidelines on Sustainable Packaging towards Reduction of Marine Litter and Promoting Packaging from Alternative Materials through Market-Based Approach*” (referred to as “Project”), which aims to develop the National Ecolabelling Programme - Green Choice Philippines (NELP-GCP) criteria for packaging products that will promote reduction or recovery of packaging waste and finding alternative materials, with pilot sites in Iloilo City and Bacolod City. This is one of the pilot projects of the ‘Rethinking Plastics – Circular Economy Solutions to Marine Litter’ project of the European Union and the BMZ, implemented by the GIZ GmbH and Expertise France.

Globally, fast consumption and production are increasing with the seamless availability of goods and services, especially in metropolitan areas. This is seen locally in the generated packaging wastes of Filipinos each year, which accounts for about 60 billion sachets, 17.5 billion shopping bags, and 16.5 billion *labo* bags<sup>2</sup>.

Due to improper disposal and lack of an accessible recovery system, a big portion of these wastes neither end up in landfills nor recycling facilities. Instead, these flow to water streams that make their way down to the marine environment which eventually causes an alarming rate of marine pollution.

According to a study conducted to measure land waste input to the ocean, there were approximately 4.8 to 12.7 million tons of plastics entering the ocean yearly<sup>3</sup>. If collective action is not taken, this will impose even greater negative environmental impacts in the future. Because of this, various projects and initiatives are developing measures to mitigate marine litter. Along with policies and frameworks on SWM, one prominent initiative is the development, use, and promotion of alternative packaging products.

This document provides guidelines for policy improvement to further enhance SWM and to advance the promotion of sustainably produced alternative packaging in the country, with baseline information from Iloilo City and Bacolod City. The policy recommendations were formulated based on the current policies, frameworks, and local waste context of Iloilo City and Bacolod City. Several multi-stakeholder activities were conducted to identify the challenges in specific themes which further enhanced the policy recommendations.

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<sup>1</sup> UN Environment Programme. (n.d.). Marine litter: the issue. Retrieved from <https://www.unep.org/explore-topics/oceans-seas/what-we-do/addressing-land-based-pollution/marine-litter-issue>

<sup>2</sup> Global Alliance for Incinerator Alternatives. (2019). “Plastics Exposed: How Waste Assessments and Brand Audits Are Helping Philippine Cities Fight Plastic Pollution - Global Alliance for Incinerator Alternatives. Retrieved from <http://www.no-burn.org/waba2019/>.

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<sup>3</sup> Jambeck, J. R., et al. (2015). Plastic waste inputs from land into the ocean. Retrieved from <https://science.sciencemag.org/content/347/6223/768/tab-pdf>

## 1.2 Objectives

This Document contains policy recommendations and specific programs/ actions that will support the LGUs of Iloilo City and Bacolod City in developing their policy approach by identifying challenges and analyzing the best practices in the conduct of effective waste management and promotion of sustainable packaging. The specific objectives in formulating the policy recommendations are to

1. Determine the current local regulations and laws related to SWM and packaging;
2. Identify the challenges and opportunities in the implementation of local policies related to SWM and packaging in the Philippines; and
3. Formulate policy recommendations based on the identified challenges and opportunities.

## 1.3 Framework and Methodology

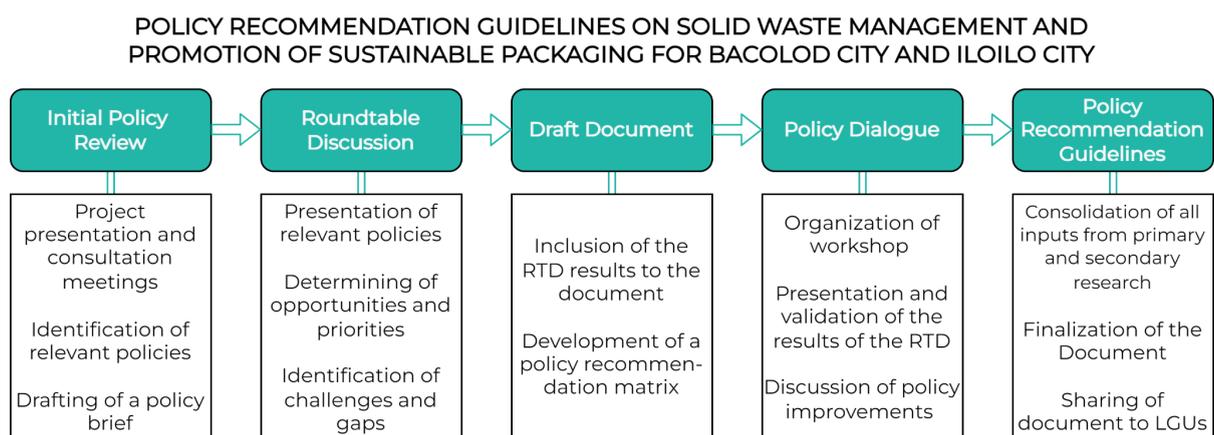
The study utilizes a case study research method in analyzing the current policies related to SWM and packaging in the Philippines. Policy discussions were organized to provide an avenue for relevant stakeholders to identify challenges and opportunities for improving SWM and streamlining sustainable packaging in Bacolod City and Iloilo City.

### Key Policy Questions:

1. What are the existing policies on SWM and packaging?
2. What are the factors that influence the LGUs in managing and implementing policy on SWM?
3. How can these policies be implemented effectively?
4. How can sustainable packaging be mainstreamed in those policies?

Figure 1 is the primary framework of the study. The first step is to commence a policy review where resources, publications, and data are collected and processed. This provides a basis for the initial policy recommendations. Next, through a roundtable discussion (RTD) with the LGUs of Iloilo City and Bacolod City, and other relevant stakeholders, capacity gaps and institutional barriers in implementing national policies and local ordinances are determined. The discussion highlights the challenges, opportunities, and priorities of each locality. The output of the RTD supports the refining of the Document, and this set of information is further validated through policy dialogue with policy experts.

This Document covers the accumulated results of the series of RTD, policy dialogue, and desk research. These serve as the backbone in identifying the significant policies and frameworks relevant to the formulation of policy recommendations specifically for the LGUs of Bacolod City and Iloilo City in enhancing their SWM and advancing sustainable packaging while leveraging sustainable consumption tools and practices.



**Figure 1.** Framework for the development of policy recommendation guidelines

## CHAPTER 2

# ENVIRONMENTAL SITUATIONER

## 2.1 National and Local Solid Waste Context

With the expansion in population, improved living conditions, rapid economic growth, urbanization, waste generation and accumulation in the Philippines continue to climb, particularly in metropolitan areas. The National Solid Waste Management Commission (NSWMC) reported that the country's waste generation rose consistently from 37,427.46 tons per day in 2012 to 40,087.45 tons in 2016, with an approximate average per capita waste generation of 0.40 kilograms per day for both urban and rural areas.

Based on the same report of the Senate of the Philippines<sup>4</sup>, households, institutions, industrial sectors or businesses, and the public market were the main sources of waste for municipalities. These sources segregate their waste into organic and non-organic materials. Residential areas produce the most solid waste, accounting for more than half (57%), consisting of glass bottles, tissue papers, diapers, food scraps, etc. Waste from commercial enterprises is 27%; institutional sources contribute 12%, while the industrial or manufacturing sector covers 4% of total waste generated. The organic composition (biodegradable) makes up a greater proportion of the country's solid waste than other materials, accounting for about 52% of discarded waste, followed by recyclable waste (28%), and residuals (18%), according to NSWMC.

Wastes from cities and municipalities are frequently generated from a variety of sources depending on the human activities involved. As per the data of the Solid Waste Management Board (SWMB), Bacolod Metropolis, a heavily populated city in the Negros Occidental Province, generates close to 500 tons of waste per day<sup>5</sup>. On the other hand, Iloilo City produces 300 tons of waste daily. Approximately half of these are biodegradable, a quarter is recyclable, and the remaining is residuals<sup>6</sup>.

<sup>4</sup> Senate of the Philippines. (2017 November). Philippine Solid Waste At A Glance. Retrieved from [http://legacy.senate.gov.ph/publications/SEPO/AAG\\_Philippine%20Solid%20Wastes\\_Nov2017.pdf](http://legacy.senate.gov.ph/publications/SEPO/AAG_Philippine%20Solid%20Wastes_Nov2017.pdf)

<sup>5</sup> Garcia, R.R. (2021 March 6). A Review on the Compliance of Bacolod City Government with RA No. 9003. Retrieved from <https://legalresearchph.com/2021/03/06/a-review-on-the-compliance-of-bacolod-city-government-with-ra-no-9003/>

<sup>6</sup> Panay News. (2018 August 11). Iloilo City churns out 300 tons of trash daily. Retrieved from [https://www.panaynews.net/iloilo-city-churns-out-300-tons-of-trash-daily/?amp\\_markup=1](https://www.panaynews.net/iloilo-city-churns-out-300-tons-of-trash-daily/?amp_markup=1)



Waste from households, industries, and commercial enterprises is either self-disposed of, illegally discharged, or submitted for recycling through legitimate waste collectors such as junk shops, eco-aides, and municipal collection crews. Despite advances in recycling rates, the use of local recyclable materials is still uncommon and limited. The challenges posed by the waste crisis, as well as heightened policy emphasis and initiatives, have prompted the development and use of various waste management systems and efforts<sup>7</sup>. The NSWMC was founded under the Office of the President through RA 9003 and appointed the LGUs as the principal implementers. In addition, RA 9003 requires the establishment of SWMB throughout the country to draft and implement SWM strategies. Community levels started implementing 3Rs (reduce, reuse, recycle) while industry levels prioritized SWM and waste reduction programmes<sup>9</sup>.

## 2.1 Local Packaging Trends

Sustainable packaging has been gaining more market exposure for the past five years, slowly building its credibility through research and product development. To define, the Sustainable Packaging Coalition has provided criteria for sustainable packaging<sup>10</sup>:

- a. Is beneficial, safe & healthy for individuals and communities throughout its life cycle
- b. Meets market criteria for performance and cost

<sup>7</sup> NOTE: All icons used are from Flaticon.com

<sup>8</sup> <https://nswmc.emb.gov.ph/wp-content/uploads/2016/06/Solid-Wastefinaldraft-12.29.15.pdf>

<sup>9</sup> National Solid Waste Management Commission (NSWMC) et al. National Solid Waste Management Strategy. Retrieved from

<https://nswmc.emb.gov.ph/wp-content/uploads/2016/07/NSWM-Strategy-2012-2016.pdf>

<sup>10</sup> Sustainable Packaging Coalition. (2011). Definition of Sustainable Packaging. Retrieved from <https://sustainablepackaging.org/wp-content/uploads/2017/09/Definition-of-Sustainable-Packaging.pdf>

- c.** Is sourced, manufactured, transported, and recycled using renewable energy
- d.** Optimizes the use of renewable or recycled source materials
- e.** Is manufactured using clean production technologies and best practices
- f.** Is made from materials healthy throughout the life cycle
- g.** Is physically designed to optimize materials and energy
- h.** Is effectively recovered and utilized in biological and/or industrial closed-loop cycles

Indigenous material as packaging is part of the Filipino culture, but due to globalization and demand for fast consumerism, single-use packaging has become the top option to be used to supplement the need and convenience of the consumers. The increasing concern for excessive packaging wastes and marine pollution has called for an action to innovate the material design of the packaging. Sustainable packaging gained its threshold in the Philippines since 2015, providing alternatives that either use biodegradable or natural materials. Although there are still rifts in the coverage and definition of sustainable packaging, it has become apparent that there is a need to provide an avenue to further integrate it into the industry and lifestyle of the consumers. SWM can enable the promotion of sustainable packaging in mitigating excessive waste generation of packaging.

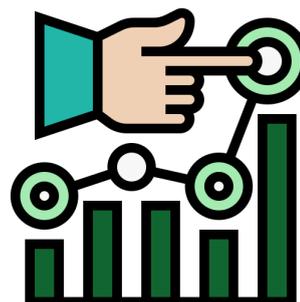
In the Philippines, there is an increasing trend of businesses that offer sustainable packaging options. Although this helps provide the alternatives to be readily available in the market, most of these businesses are niched in Metro Manila and in urban areas of Visayas and Mindanao which not every consumer and micro, small and medium enterprises (MSMEs) have access to. Integrating the regulation of production and usage of packaging into the national policies and local ordinances may be beneficial especially to regulate both conventional and alternative packaging wastes, and prevent them from entering the marine ecosystem. Utilizing the life cycle analysis (LCA) of packaging can help in identifying the approach to where these kinds of packaging alternatives can fall under.

In the Baseline Study on the Market Readiness for Sustainable Packaging conducted under the Project, there are seven identified alternative packaging groups, namely:

- a.** Biodegradable Plastic Packaging
- b.** Bio-based (Bioplastic) Packaging
- c.** Compostable Packaging
- d.** Wood-based / Pulp and Paper Packaging from Sustainably Managed Forests
- e.** Packaging with Recycled Content
- f.** Recyclable Packaging
- g.** Reusable and Long-lasting Packaging

Moreover, through NELP-GCP, the ecolabelling criteria for packaging products are drafted covering the following categories (as aligned with the Baseline Study on the Market Readiness for Sustainable Packaging):

- a.** Biodegradable Packaging
- b.** Compostable Packaging
- c.** Packaging with Recycled Content
- d.** Recyclable Packaging with Extended Producer Responsibility (EPR) / recovery systems in place
- e.** Reusable or Refillable Packaging



These packaging groups can be a starting point for innovations that can be considered by both the public and private sectors. With the goal to address environmental concerns imposed by excessive packaging waste, collective action is necessary through the participation of the government, private sector industries, and consumers. However, there are only a few related national policies that can leverage these alternatives. Thus, this Document analyzes the current policies in the Philippines and provides recommendations on ways to significantly reduce solid waste and marine litter through policy improvement.

# CHAPTER 3

## SUSTAINABLE CONSUMPTION AND PRODUCTION TOOLS AND PRACTICES

### 3.1 Circular Economy

In March 2020, the European Commission began to adopt the Circular Economy Action Plan (CEAP). This action plan aims to promote long-term growth while limiting natural resource depletion. It also takes steps to work with items throughout their life cycles. The items must be designed to encourage sustainable consumption, promote the circular economy, and ensure that trash is not disposed of in a way that may harm the environment in the future<sup>11</sup>.

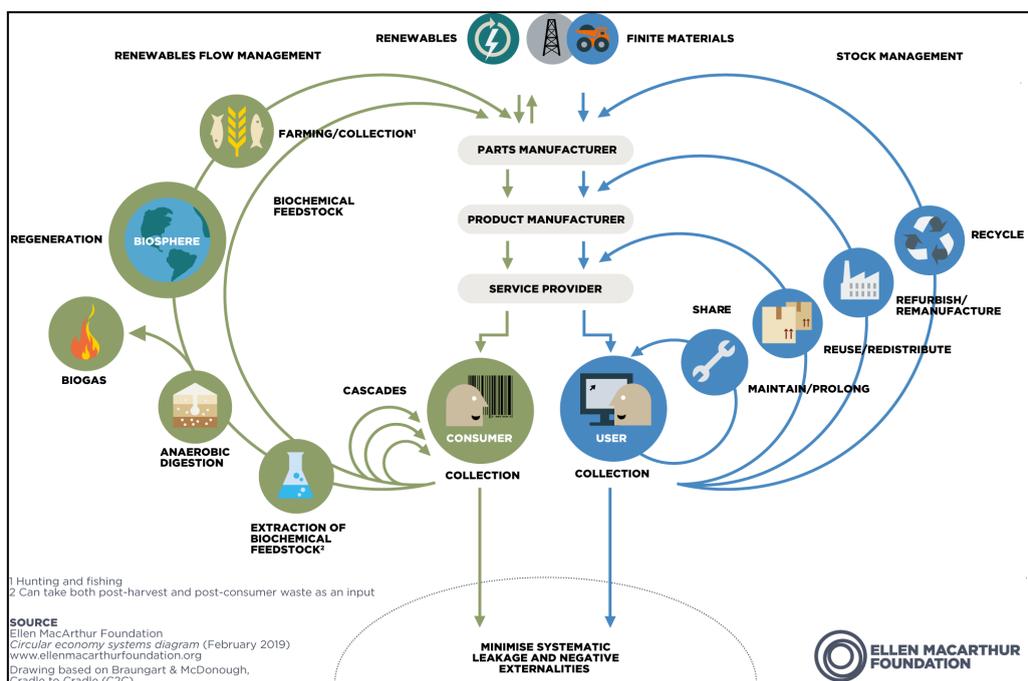


Figure 2. Circular Economy System Diagram<sup>12</sup>

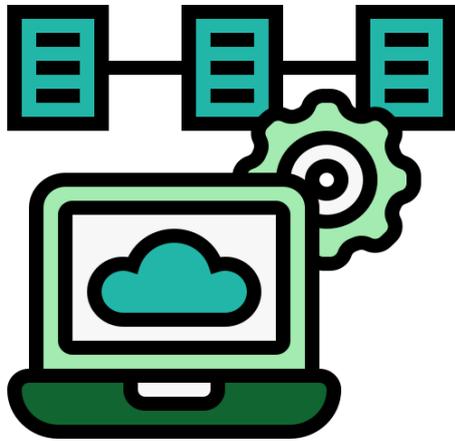
The circular economy practices are congruent with the United Nations (UN) Sustainable Development Goals (SDGs), such as promoting resilient economic growth and mitigating environmental and resource effects. Circular economy can give chances to the most vulnerable people, such as workers in the informal waste management sector if it is done inclusively. The national government wants to see if there are any synergies between the circular economy and the Philippines' present national development goals and strategies, as well as to examine the size of the opportunity in transitioning to a circular economy in key areas of the economy. Cities are critical in the transition to a circular economy because they have data, capital, a high concentration of resources, and skills concentrated in a compact geographic area. In some countries, their local governments, policymakers, and urban planners are starting to use circular economy concepts to guide innovation and create prosperous, livable communities. Unlike most present urban systems which rely on a linear urban metabolism, a circular city incorporates circular economy concepts into all of its operations, resulting in an urban system that is accessible, abundant, and regenerative by design. In the Philippines, there are tremendous chances of incorporating circular design into many ongoing green city efforts<sup>13</sup>.

<sup>11</sup> European Commission. (n.d). Circular economy action plan. Retrieved from [https://ec.europa.eu/environment/strategy/circular-economy-action-plan\\_en](https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en). Accessed 10 August 2021.

<sup>12</sup> Ellen MacArthur Foundation. (2019). The Circular Economy Diagram. Retrieved from <https://archive.ellenmacarthurfoundation.org/explore/the-circular-economy-in-detail>.

<sup>13</sup> Schroeder, P. (2020). Regional: Supporting Implementation of EnvironmentRelated Sustainable Development Goals in Asia and the Pacific (Philippine Subproject). Asian Development Bank. Retrieved from [https://www.adb.org/sites/default/files/project-documents/50158/50158-001-tacr-en\\_0.pdf](https://www.adb.org/sites/default/files/project-documents/50158/50158-001-tacr-en_0.pdf). Accessed 10 August 2021.

## 3.2 Extended Producers Responsibility



EPR is an environmental policy concept that first appeared in the 1990s and is now widely recognized as a viable instrument for speeding up the transition to sustainable waste management and a circular economy. It promotes waste reduction and the creation of more ecologically friendly packaging. EPR's basic strategy is based on requiring enterprises (i.e., sellers, manufacturers, etc.) to take complete responsibility for the things they sell to the public – not just during consumption but also during the end-of-life phase, or after their products have become garbage. EPR operates in tandem with and complements traditional government and citizen-run waste management systems<sup>14</sup>.

The World Wide Fund for Nature Philippines (WWF) has released a report titled "Extended Producer Responsibility Scheme Assessment for Plastic Packaging Waste in the Philippines", as part of its No Plastics in Nature project<sup>15</sup>. EPR is a key and effective policy instrument in making manufacturers accountable for the end-of-life implications of their plastic products and packaging. The report emphasizes that for this customized EPR scheme to work, the responsibility for implementing the scheme for building high-quality recycling capacity should be assumed by a non-profit Producer Responsibility Organization (PRO) acting as the system operator, with government-run strict monitoring and control systems.

## 3.3 Green Purchasing

When compared to competing products or services that fulfill the same function, green purchasing refers to the procurement of items and services that have a lesser or reduced impact on human health and the environment. The European Commission SWITCH<sup>16</sup> is a regional environmental program aimed at encouraging SCP in Asia, with a particular focus on small and medium-sized businesses.

Many countries are adopting green public procurement (GPP) policies as key market players focus on long-term consumption habits that will influence production patterns. GPP is helping to achieve sustainable development, which is defined as accomplishing human development goals while preserving natural systems' ability to supply the natural resources and ecosystem services that the economy and society rely on. In the Philippines, GPP assists the government with the development and implementation of a variety of SCP policies. The gradual implementation of GPP inside public institutions is one of them<sup>17</sup>.



<sup>14</sup> World Wild Fund Philippines. (2020). EPR Scheme Assessment for Plastic Packaging Waste in the Philippines. Retrieved from [https://wwf.org.ph/wp-content/uploads/2020/12/WWF\\_REPORT\\_EPR\\_Philippines\\_2020.pdf](https://wwf.org.ph/wp-content/uploads/2020/12/WWF_REPORT_EPR_Philippines_2020.pdf). Accessed 10 August 2021.

<sup>15</sup> World Wide Fund for Nature Philippines. (2020). *No Plastics in Nature*. Retrieved from <https://wwf.org.ph/what-we-do/plastics/epr-launch/>

<sup>16</sup> European Commission. (n.d). SWITCH Asia. Retrieved from [https://ec.europa.eu/international-partnerships/programmes/switch-asia\\_en](https://ec.europa.eu/international-partnerships/programmes/switch-asia_en). Accessed 1 December 2021.

<sup>17</sup> Government Procurement Policy Board. (2017). The Philippine Green Public Procurement Roadmap: Advancing GPP until 2022 and beyond Responsible Procurement. Retrieved from [https://www.gppb.gov.ph/downloadables/forms/GPP\\_roadmap\\_print.pdf](https://www.gppb.gov.ph/downloadables/forms/GPP_roadmap_print.pdf). Accessed 10 August 2021.

## CHAPTER 4

# POLICIES AND FRAMEWORKS

## 4.1 Ecological Solid Waste Management Act of 2000

The RA 9003, formally known as "An Act Providing for an Ecological Solid Waste Management Program, Creating the Necessary Institutional Mechanisms and Incentives, Declaring Certain Acts Prohibited and Providing Penalties, Appropriating Funds Therefor, and for Other Purposes" requires all government units, particularly LGUs, to implement a systematic, comprehensive, and environmentally friendly SWM program to preserve public health and the environment. The Act mandates the use of environmentally sound methods, establishes targets and guidelines for solid waste avoidance and reduction, ensures proper solid waste segregation, collection, transportation, and storage, promotes national research and development programs for improved SWM, encourages greater sector participation, and leaves primary enforcement and responsibility for SWM to LGUs. It also promotes waste generator engagement and self-regulation, institutionalized public participation, and improves the integration of environmental SWM, resource conservation, and recovery subjects into academic curricula.

According to Section 16 of RA 9003, the LGU shall establish an SWMB and formulate a 10-year SWM Plan based on 3R Principles<sup>18</sup>. The Act states that:

*“The province, city or municipality, through its local SWMB, shall prepare its respective 10-year SWM Plans consistent with the National Solid Waste Management Framework: Provided, that the waste management plan shall be for the re-use, recycling and composting of wastes generated in their respective jurisdictions: Provided, further, that the SWM Plan of the LGU shall ensure the efficient management of solid waste generated within its jurisdiction. The plan shall place primary emphasis on implementation of all feasible reuse, recycling, and composting programs while identifying the amount of landfill and transformation capacity that will be needed for solid waste which cannot be reused, recycled, or composted. The plan shall contain all the components provided in Section 17 of this Act and a timetable for the implementation of the SWM program in accordance with the National Framework and pursuant to the provisions of this Act: Provided, finally, that it shall be reviewed and updated every year by the provincial, city or municipal solid waste management board.*

<sup>18</sup> Premakumara, D.G.J. et al. (2013), Policy Implementation of the Republic Act (RA) 9003 in the Philippines: A Case Study of Cebu City. Retrieved from <https://www.iges.or.jp/en/pub/policy-implementation-republic-act-ra-9003/en>.

## 4.2 10 Year Solid Waste Management Plan of Bacolod City and Iloilo City

Following the mandates of RA 9003, Bacolod City and Iloilo City developed their SWM Plans designed to provide a systemic approach to managing their solid wastes to achieve their waste diversion targets to support their progressive economies and growing populations.

### 4.2.1 Bacolod City

The total land area of Bacolod City is 16,145 hectares, including straits and bodies of water, as well as the 124-hectare reclamation area. Bacolod City is made up of 639 puroks and 61 barangays. Both the population and the number of households are growing at the same time. The Bacolod City SWM Plan covers the period from 2014 to 2024 and provides a framework for the LGU, barangay leaders, the business community, and citizens to manage solid wastes generated within the city in a modern, efficient, and environmentally safe manner. According to their SWM Plan, the locality will improve its waste reduction activity over the next ten years through source separation and a massive education and information campaign to meet its diversion target of 50% in 2015 and a 2.5% increase every year to reach the target diversion rate of 72.5% in 2024<sup>19</sup>

Furthermore, City Ordinance No. 310, "Revised Ecological Waste Management Ordinance of Bacolod City," states that the locality's existing Solid Waste Management Ordinance No. 250, series of 2000 should be the LGU's main initiative for the community's well-being. With this, the SWMB was formed to formulate a 10-year SWM Plan based on the 3R Principles, as mandated by RA 9003.

The problems and issues to be addressed in Bacolod City's 10-Year SWM Plan include:

- Littering of wastes in public spaces
- Indiscriminate dumping of solid wastes
- Open burning of solid waste
- Unsegregated solid waste
- Mixed collection of waste
- Disposal of mixed waste

### 4.2.2 Iloilo City

Considered as one of the country's more accessible cities, Iloilo City, a highly urbanized city, is located on the southern coastline of the Island of Panay at the southernmost edge of the Province of Iloilo. The SWM Plan of Iloilo City is lodged with the General Services Office (GSO). It is responsible for the planning and implementation of the city's waste management program and is one of the technical arms of the Iloilo City SWMB<sup>20</sup>.

The revised 10-Year SWM Plan of Iloilo City is designed to respond to the following key issues that were generated through multi-stakeholder consultation workshops:

- Increasing solid waste generation
- Poor storage of solid wastes
- Poor collection and routing system
- Unsanitary disposal of solid wastes

Some targets and activities of Iloilo City SWM Plan are as follow:

- 100% target on the implementation of segregation at source by 2026 for all barangays and other waste sources;
- Full integration of waste reduction in the barangay development plans thru the passage of Executive Orders (EO) or Ordinances;
- Establishment of rapid composting in all public markets;
- Detailed schedule of collection per cluster of barangays reflected in the plan; and
- Implementation of Regulation Ordinance No. 2013-403 "Ordinance Regulating the Use of Non-bio Plastic Shopping Bags and/or Packaging Materials within Iloilo City"

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To effectively promote the program in the locality, a series of IEC campaign activities are also implemented to increase the awareness of the public on proper waste management and ensure compliance with the mandatory provisions of RA 9003.

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<sup>19</sup> Bacolod City LGU. (2015). Bacolod City 10-Year Solid Waste Management Plan.

<sup>20</sup> Technical Work Group, Iloilo City Solid Waste Management Board. (2017). 2017-2026 Iloilo City Ecological Solid Waste Management Plan

## 4.3 Working Document of the Single-Use Plastic Products Regulation Act

House Bill No. 9147 or the "Single-Use Plastic Products Regulation Act" regulates the production, importation, sale, distribution, provision, use, recovery, collection, recycling, and disposal of single-use plastics products.

In July 2021, the House of Representatives passed a measure banning single-use plastics on final reading, aimed at reducing pollution caused by these disposable objects. House Bill No. 9147 was passed on third reading by the chamber with 190 affirmative votes, zero negative votes, and one abstention. The Bill proposes to phase out single-use plastic drinking straws, stirrers, candy sticks, balloon sticks, cotton bud sticks, buntings, confetti, and packaging or bags less than 10 microns thick within a year. Single-use plastics such as dinnerware, film wrap, packaging or bags less than 50 microns thick, sachets and pouches, oxo-degradable plastics, and polystyrene food

and beverage containers will be phased out over the next four years.

The Bill requires the Department of Environment and Natural Resources (DENR) to prepare a single-use plastic trash phase-out plan within six months, with components focusing on lowering consumption, holding producers accountable, creating alternatives, enhancing recovery, and raising awareness. It also aims to encourage circularity by reducing, recycling, and reusing plastic waste. It requires businesses to promote reusable, recyclable, and retrievable products in their stores, charge customers PHP 5 for each single-use plastic used for take-out food or delivery service, and make it easier for customers to return used plastic products to the store. Fines for the offenders range from PHP 50,000 to PHP 500,000 for micro-enterprises and PHP 250,000 to PHP 1,000,000 for larger businesses<sup>a</sup>.

## 4.4 Relevant Policies and Guidelines for SWM

**Table 1.** Other National Policies, Frameworks, and Strategies

POLICIES AND REGULATIONS	SCOPE AND PURPOSE
National Plan of Action for the Prevention, Reduction, and Management of Marine Litter, 2021	The plan serves as a model for improving the country's current resource and waste management efforts, as well as to provide a fresh outlook on marine litter problems and the prevention of additional waste leakage into bodies of water.
Philippine Action Plan for Sustainable Consumption and Production, 2020 <sup>21</sup>	The plan serves as a guide to influence and steer sustainable behavior and practices across sectors and levels of government contributing to the targets identified in the Philippine Development Plan.
National Solid Waste Management Strategy, 2012-2016 <sup>22</sup>	The strategy describes a medium-term plan for dealing with significant challenges, goals, and difficulties related to SWM. It acts as a roadmap for improving environmental protection to create a better and healthy environment.
National Framework Plan for the Informal Waste Sector, 2009 <sup>23</sup>	The plan provides a favorable policy framework, encourages skill development and offers access to stable livelihoods, employment, and social services. In addition, the plan calls for the implementation of programs, as well as support in obtaining occupation and sustainable livelihoods, giving access to social services, enabling and building collaborations, and enforcing child labor regulations in the sector.
National Solid Waste Management Status Report, 2008-2014 <sup>24</sup>	The report focuses on the brown environment, and it discusses key concerns like air and water quality, as well as the evaluation and management of solid wastes, toxic chemicals, and

<sup>21</sup> NEDA. (2020). Philippine Action Plan for Sustainable Consumption and Production. Retrieved from <https://sdg.neda.gov.ph/philippine-action-plan-for-sustainable-consumption-and-production-pap4scp/>

<sup>22</sup> NSWMC. (2012). National Solid Waste Management Strategy 2012 – 2016. Retrieved from <https://nswmc.emb.gov.ph/wp-content/uploads/2016/07/NSWM-Strategy-2012-2016.pdf>

<sup>23</sup> Serrera, K.R.B., et al. (2014) Developing a monitoring and evaluation framework to integrate and formalize the informal waste and recycling sector: The case of the Philippine National Framework Plan. Retrieved from <https://journals.sagepub.com/doi/abs/10.1177/0734242X14542146>

<sup>24</sup> NSWMC. (2015). National Solid Waste Management Status Report (2008 – 2014). Retrieved from <https://nswmc.emb.gov.ph/wp-content/uploads/2016/06/Solid-Wastefinaldraft-12.29.15.pdf>

<sup>a</sup> Cervantes, F.M. (2021). House passes bill banning single-use plastics. Retrieved from <https://www.pna.gov.ph/articles/1148600>. Accessed 10 August 2021.

POLICIES AND REGULATIONS	SCOPE AND PURPOSE
	hazardous wastes in the country.
National Solid Waste Management Framework, 2004 <sup>25</sup>	The framework focuses on waste minimization, reduction, and recycling measures, as well as a timeline for achieving the national goal of developing a systematic, complete, and ecological SWM program.

**Table 2.** Iloilo City Policies and Ordinances

POLICIES AND ORDINANCES	SCOPE AND PURPOSE
Regulation Ordinance No. 00-161	The ordinance, or the "Creation of the City Environment and Natural Resources Office (ENRO)" outlines the plan and responsibility for strict implementation of all environmental laws and regulations in the locality.
EO No. 65 s. 2004	The order recomposed the Iloilo City SWMB.
EO No. 46 s. 2002	The order created the task force Clean and Green in the City.
EO No. 43 s. 2005	The order expanded the membership of the technical working group (TWG) of the Iligan City SWMB.
EO No. 34 s. 2005	The order created the Iloilo River Development Council (IRDC) and defined its organizational structure, the scope of functions, and its membership.
Regulation Ordinance No. 2004-149	The ordinance aims to regulate littering in the city, also called "Iloilo City Environment Code of 2004 Anti-Littering Ordinance of 1976".
Regulation Ordinance No. 2012-027	The ordinance states that there should be proper handling in the collection of solid, liquid, and toxic waste in all medical and other health care generators/establishments in Iloilo City.
Regulation Ordinance No. 2013-403 "Non-Biodegradable Plastic Shopping Bag Regulation Ordinance of Iloilo City"	The ordinance regulates the use of non-biodegradable plastic shopping bags as wrapping, bagging, and/or packaging materials for the establishment within the jurisdiction of Iloilo City.

**Table 2.** Bacolod City Policies and Ordinances

POLICIES AND ORDINANCES	SCOPE AND PURPOSE
City Ordinance No. 258	The ordinance focuses on establishing, identifying, and regulating zero-waste zones in the City of Bacolod and providing penalties for violations.
City Ordinance No. 562-2011	The ordinance governs the usage, sale, and distribution of plastic bags used as packaging material in Bacolod City. The use, sale, or distribution of plastic bags and/or <i>sando</i> bags as packing materials to customers is prohibited. Plastic bags with no handles, holes, or strings are often used as primary packaging for packing and wrapping fresh foods.
City Ordinance No. 596	The ordinance prohibits the indiscriminate throwing and dumping of garbage, rubbish, or any kind of waste in open or public places and mandates all residential and commercial or business establishments to clean and maintain the cleanliness of their frontage and surroundings.
City Ordinance 310 - Revised Ecological Waste Management Ordinance of Bacolod City	The ordinance outlines the revisions for the City's existing Solid Waste Management Ordinance (City Ordinance 250, series of 2000) which does not include the key clause of RA 9003. The local government's key program for the community's well-being should be the ecological SWM.

<sup>25</sup> NSWMC. (2004). National Solid Waste Management Framework. <https://nswmc.emb.gov.ph/wp-content/uploads/2017/11/NSWMC-FRAMEWORK-PDF.pdf>

## CHAPTER 5

# CHALLENGES, GAPS, OPPORTUNITIES AND PRIORITIES

## 5.1 Results of the RTD

This section provides an overview of the challenges, gaps, opportunities, and priorities of Bacolod City and Iloilo City stakeholders regarding SWM and promotion of sustainable packaging during the RTD.

There are common themes identified in the discussion such as consumer behavior, knowledge and awareness, policy implementation, and waste disposal schemes. When it comes to sustainable design and clean production, many emphasize the importance of utilizing the standards to ensure that the products do not contain harmful chemicals. Furthermore, since there are limited studies on sustainable packaging, the government and private sectors should work together to provide more information about this alternative available for public appreciation. The conservation of resources is also tackled, highlighting the need for resource-efficient production and distribution of packaging. Moreover, regular coastal clean-ups are mentioned as an effective way to reduce marine litter. Evidently, coastal clean-ups and reef assessments show that there is visible solid waste pollution in the marine areas, so this suggests that efforts shall be amplified to control wastes from entering marine life. There is also a call to look into the possibility of introducing waste-to-energy (WTE) as a means to reduce solid waste buildup.

For the promotion of alternative packaging products, price range, durability and availability are some of the considerations of the participants for them to shift from conventional packaging. Although there is still a gap in the demand, alternative packaging is slowly making its way into the Philippine market, especially in metropolitan areas. Other concerns of the LGUs are the issue of local waste collection and the lack of proper waste facilities in the area. This hinders proper waste management, especially at the barangay level. This also connects with consumer behavior, as the problem is not seen as a responsibility of the government alone, but all citizens. Proper waste segregation and collection should start at individual homes. In addition, shifting consumer behavior is a pronounced challenge in the transition towards sustainable consumption because Filipinos are accustomed to buying products in small

quantities (“sachet economy”), either for convenience or budget limitations.

For this challenge, effective implementation of IEC campaigns shall take shape to educate more consumers about the pros and cons of buying in large quantities and small quantities. SWM education is also integral to promote waste reduction and diversion practices such as proper segregation, recycling, composting, among others. Provided in Annex A are the specific points raised during the discussion.

## 5.2 Highlights of the Policy Dialogue

This section summarizes the results of the policy dialogue organized to engage several industry experts in a discussion to tackle various SWM issues and packaging opportunities in line with enhancing and diversifying the policy approaches identified during the RTD. Highlights are outlined below:

### 5.2.1 Solid Waste Management

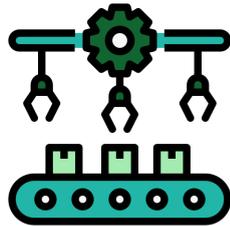
It is emphasized that collaboration is the key component in arriving at any solution, whether it is a local or national concern. One of the advancements of the Philippine Alliance for Recycling & Material Sustainability (PARMS) in addressing solid waste is coming up with a declaration of commitment: “Zero Waste to Nature: Ambisyon 2030”, in line with the 2025 sustainable packaging commitments of some global brands, while adhering to science and local economics.

In line with this, EPR is becoming part of the solution for companies to be held accountable for their generated waste even after distribution. It is also mentioned that the Philippines needs to mainstream EPR and adopt more alternative options. On the other hand, there is a challenge to fully establish EPR in the country because of the lack of local recycling facilities. It is important to collaborate with the local community to make this work.

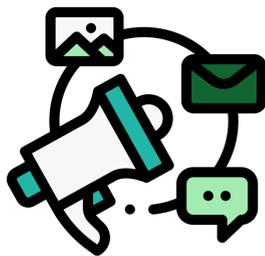


## 5.2.2 Design & Manufacturing of Alternative Packaging

One of the concerns mentioned is the low market acceptance of sustainable packaging items due to awareness issues. As such, some companies like EcoNest are pushing for reeducation for the market to really understand the value and the impact of biodegradable materials. It is also pointed out not to look at the issue as an isolated case, but rather how it operates in the whole SWM system. There is a need to shift towards interventions and policies which are not only sustainable but also regenerative. Manufacturers should consider the effects of producing crops for the purpose of creating packaging products on the local food supply.



## 5.2.3 Education and Campaign for SWM and Packaging



Worldwide Global Data Survey show that 77% of Filipino respondents believed that environmental issues are extremely important. This indicates just how many Filipinos are passionate about environmental causes

and want to get involved to support them. However, despite many agreeing that environmental agendas are critical for the country, that does not mean that environmental campaigns and education are without challenges and dangers. To further counter these challenges, the following needs are enumerated: (1) to shift the mindset on how people perceive issues to have a broader systemic perspective and enhance government and companies alike to implement systemic change; (2) to establish policies that recognize

environmental injustices and climate rights and the entire life cycle impacts of plastics to refrain from false narratives and drastically reduce SUP; and (3) to create policies that prevent implementation of false solutions to safeguard our communities, enforce EPR, and prioritize upstream interventions. After all, redesigning plastic, reduction, and reuse addresses problems from the earliest stages of plastic life, making them more impactful than end-of-life interventions.

## 5.2.4 Policy Development for SWM and Packaging

The country navigates the volume of waste generated, but there is a need to further specify these into categories, and look at sustainable packaging long-term alternatives to have viable replacements for waste materials. A



presentation during the policy dialogue implies the need to: (1) cascade RA 9003 since not all the provisions of the Act are implemented effectively; (2) empower the passive set of sub-municipal bodies such as barangay units and officials, and the community through proper reorientation, and possible behavioral change; (3) institutionalize the informal sector and strengthen horizontal and vertical linkages such as collection hubs and market for by-products; (4) harmonize policies and laws in place such as the Clean Air Act (RA 8749) and RA 9003 which complement each other, however institutional resistance has yet to be managed; direction has to be established and technological options and interventions have to be utilized; (5) revisit LGU reliance on policy grounding since inequitable distribution of resources manifested compliance to RA 9003; (6) streamline approach to investment policy through collaboration of different sectors in building infrastructures with linkages to markets for sustainability; and (7) consider protecting the waste handlers on top of the SWM issues in this COVID-19 pandemic.

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In conclusion, the policy dialogue partially reflects the varying implementation strategies of LGUs parallel to the issues and challenges when it comes to treating their solid wastes. Both Bacolod City and Iloilo City are situated in coastal areas where improper land-based activities can create negative impacts on the marine environment. The Iloilo City LGU is more proactive in terms of public-private partnership which increases the scale of project implementations in the area while Bacolod City LGU is strengthening their SWM and monitoring but is taken aback due to the pandemic.

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# CHAPTER 6

## POLICY RECOMMENDATIONS

### 6.1 Thematic Policy Recommendations

According to the study conducted by Institute for Global Environmental Studies (IGES)<sup>26</sup>, the LGUs can achieve the mandated principles of RA 9003 if there are supportive institutional mechanisms, strong political commitment, innovative programs, and local strategies, partnership building, capacity development, adequate financing and incentives and continual monitoring and evaluation of performances. Curbing solid waste pollution needs all stakeholders to work together in developing solutions and effective implementation strategies.

The RTD and policy dialogue on SWM and promotion of sustainable packaging conducted for Bacolod City and Iloilo City impart relevant policies from the LGUs with significant insights from the private sector and community associations. Effective implementation of national policies needs the coordination of the LGUs to cascade it to the community level. Some enabling mechanisms identified during the RTD and policy dialogue that can elevate the policy implementation are active support from the national government, private sector partnerships, functional facilities, and constant evaluation and monitoring. It is noteworthy that each locality has its own distinct socio-economic and environmental situation that determines its concerns and priorities.



The following policy recommendations are formulated based on the RTD, policy dialogue, desk research, and consultations:

- ➔ **Policy 1:** Implementation of general solid waste management
- ➔ **Policy 2:** Addressing excessive packaging through the promotion of more environmentally-preferable alternatives



<sup>26</sup> Premakumara, D.G.J. et al. (2013). Policy Implementation of the Republic Act (RA) 9003 in the Philippines: A Case Study of Cebu City.

#### 6.1.1 Policy 1: Implementation of general solid waste management

The devolution of waste management to local levels is among the crucial mandates of RA 9003, in correlation with the RA 7160 or the Local Government Code of 1991, which directs LGUs to serve as a lead implementer and enforcer of the provisions of this Act within their respective jurisdictions. The blueprint for plans and initiatives on waste management embodied in the 10-year SWM Plan shall be consistent with Section 16 of RA 9003, which states that: *The province, city, or municipality, through its local SWMB, shall prepare its respective 10-year solid waste management plan consistent with the national SWM framework.*

Despite serving two decades as the country's main policy on SWM, the SWM status of the LGUs show its poor response to adherence and grounding; and its financial and technical independence and sustainability as to the implementation of the Act. Evidently, not all LGUs have the capacity to captivate the law considering its practicality, factors, and actors on the ground struggling to comply with the Act given the many limitations and considerations.

Results of dialogue and research reveal that, among others, there is a need to strengthen the implementation of RA 9003; foster partnership and collaboration among public and private and all SWM stakeholders; augment financial capacities to undertake R&D and investments in recovery systems infrastructures; reinforce IEC campaign and awareness programs; and the need for setting up monitoring and evaluation, as well as consultation and feedback mechanisms of the current policies and programs in the locality.

This policy aims to provide enabling strategies and courses of action that may be taken into account by all SWM stakeholders on the general SWM to aid local chief executives in the implementation and legislators in crafting and improving policies and ordinances on this Act to be successful.

**Table 3.** Policy recommendations to improve implementation of general solid waste management

POLICY RECOMMENDATION	SPECIFIC PROGRAM / ACTION
<b>Administrative arrangements</b>	
Restructure SWMB membership to ensure the continuity of the tasks designated to the board as well as to improve coordination and implementation of the SWM Plan	<ul style="list-style-type: none"> <li>● Inclusion to SWMB of at least one representative each from the private sector, informal sector, and NGO whose principal purpose is to promote environmental protection</li> <li>● Quarterly meetings of the city/municipality SWMB with the SWM focal person per barangay</li> <li>● Development of policies and plans shall be guided by thorough research and science-based approach</li> </ul>
Implement an SWM local enforcement plan, including a monitoring and evaluation scheme to determine gaps in the action plans at the barangay level	<ul style="list-style-type: none"> <li>● Local enforcement plan               <ul style="list-style-type: none"> <li>● The plan shall be co-formulated by the members of SWMB and barangay representatives.</li> <li>● The plan shall be constantly coordinated with the barangay to identify specific challenges in waste management and policy implementation.</li> </ul> </li> <li>● Regular discussion and consultation with waste collectors, MRF managers, and other relevant stakeholders</li> </ul>
Communicate the development and progress of the SWM Plan for accountability and transparency	<ul style="list-style-type: none"> <li>● Regular report (i.e., annual or quarterly) that covers the targets achieved in the SWM Plan, the success measures done to achieve the waste diversion targets, and action plans for those that are yet to be achieved               <ul style="list-style-type: none"> <li>● The report shall be made available and accessible to the public, which may also be shared to other LGUs for replication.</li> <li>● The LGUs shall foster shared roles and responsibilities with the barangays to streamline the implementation of activities.</li> </ul> </li> <li>● Incentive program for best practices               <ul style="list-style-type: none"> <li>● Awards and recognition shall be given on a per barangay level to promote best practices and encourage other barangays to implement these initiatives.</li> </ul> </li> </ul>
<b>Waste segregation, collection, transport, and storage</b>	
Ensure waste segregation at source by adopting or intensifying a “No Segregation, No Collection” policy	<ul style="list-style-type: none"> <li>● “No Segregation, No Collection” policy               <ul style="list-style-type: none"> <li>● Waste shall be sorted and placed in proper containers for compostable or biodegradable, recyclable, residual, hazardous, and special waste.</li> <li>● Design of effective waste collection schedules from the municipality or barangay level.</li> <li>● No waste shall be collected from sources if not properly segregated.</li> <li>● Consumers are responsible for source sorting; the barangay is responsible for collecting, processing, and diverting sorted waste, while the LGU is responsible for collecting hazardous, residuals and special wastes.</li> </ul> </li> <li>● Incentive scheme for compliant households, establishments, and offices</li> </ul>

POLICY RECOMMENDATION	SPECIFIC PROGRAM / ACTION
	<ul style="list-style-type: none"> <li>Penalty scheme for non-compliant households, establishments, and offices</li> </ul>
<p>Establish a schedule for material-specific collection based on diversion strategies</p>	<ul style="list-style-type: none"> <li>Collection system and schedule per barangay <ul style="list-style-type: none"> <li>Green profiling (baseline survey, barangay profiling, and waste assessment) shall be conducted to have a benchmark data for identifying the appropriate number of waste collectors, type of collection/transport vehicles, size of the MRF; and distribution of funds for waste management contingencies.</li> <li>In the case of barangay level, a schedule shall be set for a house-to-house collection of segregated wastes to be brought to the MRF or transfer station.</li> <li>In the case of the city/municipality, a schedule for collection of residual, hazardous, and special wastes from the barangay to be brought to the landfill shall also be determined.</li> </ul> </li> <li>No garbage bins placed outside establishments and along the streets <ul style="list-style-type: none"> <li>This is to encourage the general public to take their trash and segregate it at home, and avoid throwing mixed waste in a bin.</li> <li>Properly labelled garbage bins shall be provided by the LGU in public areas, parks, etc.</li> </ul> </li> </ul>
<p>Set guidelines for proper collection, transport, and storage of waste</p>	<ul style="list-style-type: none"> <li>Application of safety protocols and provision of Personal Protective Equipment (PPE) to waste handlers</li> <li>Construction of Residual Containment Area (RCA) and decentralized MRF <ul style="list-style-type: none"> <li>Areas with geographically difficult terrain not accessible by the collection vehicle shall set up an RCA.</li> <li>Areas with no or limited space to construct a centralized MRF shall opt for decentralized MRF.</li> </ul> </li> <li>Provision of proper transport vehicles with partitions (to separate materials) and covering material to avoid spillage and contamination of waste while in transit</li> <li>Provision of separate storage for hazardous wastes <ul style="list-style-type: none"> <li>Toxic and hazardous waste from household and commercial sources may contaminate other wastes which also prevents opportunities for recycling and other diversion activities.</li> <li>Contamination starts when waste materials are mixed with hazardous and toxic products.</li> </ul> </li> </ul>
<p><b>Waste reduction, recovery, diversion, treatment, and disposal</b></p>	
<p>Utilize budgets and shared responsibilities through private and public partnerships</p>	<ul style="list-style-type: none"> <li>Formal partnership with the private sector and NGOs to welcome investments that can help fund facility development and implementation of waste management reduction, recovery, diversion, treatment and disposal projects/programs</li> </ul>

POLICY RECOMMENDATION	SPECIFIC PROGRAM / ACTION
	<ul style="list-style-type: none"> <li>• Support the construction of facilities for cyclical use, disposal, collection, or transport of resources through incentivizing and permitting construction in the locality</li> <li>• Streamlining of private and public projects to maximize the activities and outputs</li> </ul>
Partner with the private sector to adopt a take-back system and facilitate linkages of diversion activities from retailers to material processing facilities	<ul style="list-style-type: none"> <li>• Adoption of the national guidelines on EPR to local ordinances for the establishment of EPR schemes such as take-back systems, recycling activities and reduction of energy and resources for the manufacturers and retailers</li> <li>• Accessible catalogue of diversion activities, private initiatives, and take-back centers</li> <li>• Trash to cashback program <ul style="list-style-type: none"> <li>• Partnering with users for material processing shall be encouraged, such as giving of environmental points to exchange for food or other products from resources recovered and exchanged.</li> </ul> </li> <li>• This may also encourage segregation at the source.</li> </ul>
Develop additional systems that help in diverting compostable wastes that can end up in landfills and waterways	<ul style="list-style-type: none"> <li>• Investment for composting facilities to facilitate proper disposal and treatment of compostable products <ul style="list-style-type: none"> <li>• These facilities can also be income or resource generating by providing organic fertilizers for a fee or for free for the citizens.</li> </ul> </li> <li>• Community gardens that have composting areas</li> <li>• Establishment of collecting, deposit, and composting sites</li> </ul>
Develop additional systems to process recyclable materials and divert them from landfills and waterways	<ul style="list-style-type: none"> <li>• Establishment of collecting, deposit and recycling sites</li> <li>• Development of income-generating projects/activities such as repair, refurbishing, repurpose and recycling of products.</li> </ul>
Conduct regular street and coastal clean-ups in partnership with waste treatment/diversion entities to ensure that the collected waste items are properly disposed of or diverted.	<ul style="list-style-type: none"> <li>• Expansion of city and municipality beautification and street clean-ups to include marine and other tributaries.</li> <li>• An agency in charge of strictly controlling and monitoring the disposal of any form of litter into the water bodies shall be designated by the SWMB <ul style="list-style-type: none"> <li>• Hotspot analysis of land and coastal areas and communities to identify where most unmonitored waste is leaked to.</li> </ul> </li> <li>• Encourage private sector initiatives <ul style="list-style-type: none"> <li>• Clean-up activities shall be properly coordinated with the LGU and organization-in-charge.</li> <li>• Businesses may be encouraged or mandated to join in community clean-ups by providing certificates.</li> <li>• This can also be checked during business permit renewals.</li> </ul> </li> </ul>
Provide and adopt guidelines to consider the local situation for the construction of MRF for	<ul style="list-style-type: none"> <li>• Guidelines for the construction of MRF <ul style="list-style-type: none"> <li>• The guidelines shall specify the ideal and</li> </ul> </li> </ul>

POLICY RECOMMENDATION	SPECIFIC PROGRAM / ACTION
each barangay, including maintenance activities to ensure sanitary and proper disposal of the collected waste	<p>recommended alternatives for the dimension and location of the MRF.</p> <ul style="list-style-type: none"> <li>● The guidelines shall specify how the MRF can be maintained for long-term use.</li> <li>● Waste pickers, collectors, and the informal sector shall be included in the design of the system to ensure inclusivity and proper operations of MRF.</li> <li>● Develop an income-generating MRF or a business model for the MRF to support its maintenance and improvement, and to provide financial compensation to waste management personnel.</li> </ul>
<b>Training and educational programs</b>	
Conduct internal capacity-building activities for the LGU, barangay officials, and waste handlers	<ul style="list-style-type: none"> <li>● Target-specific trainings <ul style="list-style-type: none"> <li>● Internal education for policy developers to incorporate new and upcoming approaches such as the circular economy and SCP in the local context.</li> <li>● Internal education for policy implementers shall take place to better facilitate policy implementation.</li> <li>● Training program for waste handlers on proper waste handling and safety protocols.</li> </ul> </li> <li>● Regular conduct of multi-sectoral training and consultation to institutionalize greater private and public participation in the development and implementation of solid waste management practices.</li> </ul>
Intensify IEC campaign to raise public awareness on proper waste management practices	<ul style="list-style-type: none"> <li>● Regular conduct of education and awareness activities to the locality highlighting proper SWM activities and other waste diversion practices <ul style="list-style-type: none"> <li>● The IEC campaign may focus on raising awareness on different consumer practices such as the advantages of buying in bulk compared to “tingi” culture.</li> <li>● The IEC materials may emphasize the negative impacts of waste buildup on the coastlines on human and marine life, and the efforts people can make to minimize these impacts.</li> <li>● Short-term activities oriented to long-term goals can stimulate a change in consumer behavior, emphasizing biodiversity priorities and the importance of waste management.</li> <li>● The materials may include online and physical mediums that are attractive and engaging to the consumers.</li> </ul> </li> <li>● Implementation of environmental education as prescribed by RA 9512 (National Environmental Awareness and Education Act) <ul style="list-style-type: none"> <li>● SWM principles and frameworks shall be incorporated into education programs and curricula.</li> <li>● This may be introduced into schools at all levels to bridge the knowledge gap among youth in proper SWM.</li> </ul> </li> </ul>

POLICY RECOMMENDATION	SPECIFIC PROGRAM / ACTION
Facilitate public and community events that promote SWM	<ul style="list-style-type: none"> <li>● Public and community events such as               <ul style="list-style-type: none"> <li>● Trade fairs</li> <li>● Community clean-ups</li> </ul> </li> </ul>
<b>Continuous improvement on solid waste management</b>	
Review and re-evaluate policies and programs related to SWM every five years, and amend if needed	<ul style="list-style-type: none"> <li>● Regular review of existing policies               <ul style="list-style-type: none"> <li>● This shall take place to correspond to the changes in the environmental concerns and waste management priorities.</li> <li>● This shall be done mid-way of the SWM Plan implementation, and after the 10-year mark before creating a new SWM Plan.</li> <li>● Integrate a multi-stakeholder discussion in the review and assessment of the programs and policies.</li> </ul> </li> </ul>
Adopt national laws and frameworks to be integrated into local policies and programs	<ul style="list-style-type: none"> <li>● Adoption of and support to national laws and frameworks               <ul style="list-style-type: none"> <li>● The LGUs shall adopt national plans (e.g., National Plan of Action on Marine Litter) and support EPR schemes of private businesses and NGOs.</li> <li>● Emerging plans may be integrated during the review and evaluation of local policies and programs.</li> </ul> </li> <li>● Design of new programs based on national laws and frameworks</li> </ul>

## 6.1.2 Policy 2: Addressing excessive packaging through the promotion of more environmentally-preferable alternatives

Packaging, whether it's plastic, paper, glass, or metal, has the role to protect and preserve the products. However, due to the large volume of products consumed globally, packaging has been part of the biggest contributor to global waste.<sup>27</sup>

While packaging has the role to protect, preserve and present a product, it also contributes a significant factor to the trends of the industry. However, the vital role played by packaging is reciprocated by its dominance in generating almost half of the global wastes.

E-commerce has drastically made packaging waste become a bigger concern as COVID-19 hits the world. The volume of packaging waste has since then heightened, as such the business sector were called out by several environmental groups to reduce their packaging as part of the effort to help save the environment as well as to present alternative options to a growing 75% of Filipinos who are actively seeking out brands that offer ways to offset their impact to the environment.<sup>28</sup>

Despite the increasing number of cities and municipalities in the country that have enacted ordinances regulating and banning single-use packaging, this policy recommendation suggests strengthening the implementation of these initiatives that remain inadequate. This Document also suggests that it is imperative to set guidelines for labelling of the packaging's recyclability and reusability; adopt a system of validation of packaging products' biodegradability, and provide instructions in determining unnecessary single-use packaging. Along with these efforts in reducing excessive packaging, it is equally valuable to foster the use of environmentally-preferred alternatives through market linkages, stabilizing collaboration and partnership among stakeholders, incentivizing best practices; and utilization of ecolabelling tools available in the market. Progressive research and development coupled with investments on the emerging packaging alternatives is also highly recommended.

This policy recommendation is devised to assuage the continuing problem on excessive packaging waste, in support of existing guiding policies on waste management, pending approval into law House Bills 9147 and 10696.

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<sup>27</sup> Retrived from <https://ourworldindata.org/plastic-pollution#:~:text=Packaging%20is%20therefore%20the%20dominant%20generator%20of%20plastic,breakdown%20by%20polymer%20type%20and%20be%20found%20here.>

<sup>28</sup> Kantar World Panel. (2021). 75% of Filipino Consumers Seek Eco-Friendly Brands. <https://www.kantarworldpanel.com/ph/news/sustainability-matters>

**Table 4.** Policy recommendations to address excessive packaging

POLICY RECOMMENDATION	SPECIFIC PROGRAM / ACTION
<b>Reduction of single-use packaging</b>	
Strengthen the implementation of the local ordinance on the use of single-use packaging	<ul style="list-style-type: none"> <li>• Coordination with retails, groceries, convenience stores, and fresh market stalls to offer or provide packaging alternatives to their customers</li> <li>• Mandate for businesses to offer or provide alternative packaging to their customers               <ul style="list-style-type: none"> <li>• The alternative packaging shall be made available in the check-out counters.</li> <li>• If there are no alternatives, these establishments shall encourage and remind their consumers to bring their own reusable bags.</li> <li>• A fee shall be charged for using single-use packaging.</li> </ul> </li> </ul>
Set or adopt guidelines for labelling of recyclability and reusability to guide consumers on packaging choice	<ul style="list-style-type: none"> <li>• Guidelines for recyclability and reusability               <ul style="list-style-type: none"> <li>• The guidelines shall include standards for recyclability and reusability of packaging from a science-based approach.</li> <li>• The guidelines shall contain information on how to determine recyclable and reusable packaging (i.e., material type, end-use instructions, disposal methods).</li> </ul> </li> <li>• Catalogue of local recycling centers that accept recyclable packaging products</li> </ul>
Set or adopt guidelines for guaranteed biodegradability of packaging products	<ul style="list-style-type: none"> <li>• Guidelines for biodegradability               <ul style="list-style-type: none"> <li>• The guidelines shall contain information on the biodegradability of the packaging including the time and process for it to degrade.</li> </ul> </li> <li>• Catalogue of accredited testing laboratories or certifying bodies that validate the biodegradability of the packaging products</li> </ul>
Set or adopt guidelines for determining unnecessary single-use packaging throughout the locality	<ul style="list-style-type: none"> <li>• Guidelines for determining unnecessary single-use packaging               <ul style="list-style-type: none"> <li>• The guidelines shall include a catalogue of unnecessary single-use packaging, validated through scientific methodologies.</li> <li>• The guidelines shall answer what are considered unnecessary single-use packaging.</li> <li>• The guidelines shall discuss how to manage and dispose of unnecessary single-use packaging.</li> </ul> </li> </ul>
<b>Business linkages and promotion of environmentally-preferable alternatives</b>	
Create opportunities for market linkages for packaging alternatives	<ul style="list-style-type: none"> <li>• Public events and trade fairs               <ul style="list-style-type: none"> <li>• Public events and trade fairs shall showcase the array of alternative packaging consumers can opt for.</li> <li>• Participation from different sectors and industries.</li> </ul> </li> <li>• Exploratory meetings               <ul style="list-style-type: none"> <li>• Meetings shall be conducted with alternative packaging suppliers and producers to explore opportunities in the local market and connect them to interested businesses.</li> </ul> </li> </ul>

POLICY RECOMMENDATION	SPECIFIC PROGRAM / ACTION
Create a public merchant database for environmentally-preferable products (including packaging) where businesses and consumers can look for alternative options	<ul style="list-style-type: none"> <li>● Public merchant database <ul style="list-style-type: none"> <li>● The database shall contain relevant information such as the name of the business/manufacturer, contact details, address and general description of the product.</li> <li>● The database shall include a catalogue of ecolabelled packaging products and/or alternative packaging producers and retailers.</li> <li>● The catalogue shall be made available in online and printed mediums for easy access of the consumers.</li> </ul> </li> </ul>
Provide incentives for businesses that offer and/or use alternative packaging	<ul style="list-style-type: none"> <li>● Reinforcement of the promotion of alternative packaging and reduction of excess packaging through incentives such as tax reduction, credits for business permits, environmental certification</li> </ul>
Promote the utilization of emerging market tools such as ecolabelling to manufacturers and businesses	<ul style="list-style-type: none"> <li>● Partnership with organizations and/or DTI that certifies environmentally-preferable packaging products</li> </ul>
Adopt innovative approaches and frameworks to be integrated in local policies and programs to help increase the demand for sustainable materials, thus providing more opportunities for the alternative packaging products to enter different markets	<ul style="list-style-type: none"> <li>● Adoption of and support to national laws and frameworks (e.g., green public procurement, circular economy)</li> </ul>
Develop local livelihood opportunities to increase the uptake of alternative packaging	<ul style="list-style-type: none"> <li>● Engagement with the local community to develop a homegrown alternative packaging <ul style="list-style-type: none"> <li>● Partnership with the government (such as TESDA, DA) or other relevant sectors to conduct livelihood programs and capacity building.</li> <li>● Include capacity building on the procurement of sustainably-sourced raw materials.</li> <li>● Assist the local community to jumpstart their business on alternative packaging.</li> </ul> </li> </ul>
<b>Education Programs</b>	
Conduct information campaign to increase awareness on the environmental benefits of using alternative packaging	<ul style="list-style-type: none"> <li>● Development of educational and campaign materials <ul style="list-style-type: none"> <li>● The materials shall list environmentally-preferable packaging products, and discuss the environmental benefits of reducing single-use packaging and opting for alternative packaging products</li> </ul> </li> </ul>
<b>Research and Development</b>	
Invest in R&D	<ul style="list-style-type: none"> <li>● Research on alternative packaging production <ul style="list-style-type: none"> <li>● Further studies shall be devised by the different research groups in order to develop adequate alternative packaging options as well as to ensure that the packaging solutions are good for the environment.</li> <li>● Market studies shall be conducted on the price contrasts between conventional packaging and alternative packaging products.</li> </ul> </li> </ul>

POLICY RECOMMENDATION	SPECIFIC PROGRAM / ACTION
	<ul style="list-style-type: none"> <li>● Studies shall cover quality assurance of the alternative packaging products (e.g., weight capacity, durability, and other description specific to the item).</li> <li>● Studies shall be conducted to test the validity of claims of alternative products locally available (e.g., biodegradability).</li> <li>● Collaborate with relevant sectors for the establishment of testing facilities on packaging</li> <li>● Collaborate with relevant sectors for the development of alternative packaging prototypes</li> </ul>
Support criteria and standard development for packaging	<ul style="list-style-type: none"> <li>● Participation in criteria development workshops and consultations</li> <li>● Promotion of and support to various training for local auditors that will assess the environmental compliance of companies and manufacturers</li> <li>● Encourage packaging manufacturers to apply for an ecolabelling certification</li> </ul>

## 6.2 Summary and Conclusion

Infiltrating even the most pristine bodies of water uninhabited by humans, marine litter has become one of the most alarming environmental concerns. On top of the solid waste problem contributing to most marine litter, packaging wastes have become part of the problem. Recently, e-commerce dependency due to the COVID-19 pandemic has tremendously aggravated the issue. As such, numerous efforts and responses to mitigate the worsening effects of mismanaged solid waste, including packaging wastes, have made their way.

In the Philippines, there are many local and national policies and campaigns to combat marine pollution, government leaders in partnership with private and other sectoral groups have continuously passed laws and regulations in environmental protection and sustainability. The uncontrolled volume of packaging wastes has dedicatedly pushed environmental advocates for the passage of the Single-use Plastic Products Regulation Act (House Bill 9147). The debatable issues on the use of single-use plastic (SUP) packaging, have drawn the attention of lawmakers, thus on July 28, 2021, the bill is passed in the Philippine House of Representatives. The anticipated passage of House Bill No. 10696 or the Extended Producer Responsibility (EPR) scheme is envisioned to promote and enhance the reduction of plastic detrimental to the environment. These and more laws are made in a holistic approach to addressing solid waste management and excessive packaging waste. Amplified policy and institutional system would strengthen and uphold the cause within the Philippines.

To further reinforce the implementation of policies on solid waste management at the LGU level, there should be a reliable and effective body governing the planning and execution as well as the review and development of policies. Systematic waste management from waste segregation, collection, transport, and storage to waste reduction, recovery diversion, treatment, and disposal should be properly planned by the LGU. This can be done by overseeing the groundwork and providing facilities that can

help in improving the waste management system. Integrating circularity and innovative approach to waste management streamlines global response in the local implementation.

Packaging is an essential part of everyone's lives but it also contributes to waste generation. While reducing the use of plastic products can ease waste input, it does not solve the whole problem. Addressing the use of excessive packaging such as strengthening the implementation of local ordinances, and providing a guide for consumers on determining environmentally- preferred packaging products is seen as beneficial in tackling packaging waste. Business linkages in the promotion and use of environmentally-preferable alternatives, reinforced with information campaigns to increase awareness of its environmental benefits, as well as continuous engagements in research and development, have been the recurring approaches in moving towards more sustainable consumption and use of packaging.

Solid waste management is an important aspect in the field of environmental protection and conservation. The continuous improvement of policies and programs is a reflection of the commitment of the national government to mitigating the detrimental effect of mismanaged waste. Furthermore, the LGUs should respond with the welfare of the environment and the community in mind. Thus, reflecting an innovative and efficient approach to utilizing investments, partnerships, resources, and technology in improving waste management and advancing sustainable packaging.

## ANNEX A

Consolidated and processed information from the Policy Roundtable Discussion

OBJECTIVES BASED ON CIRCULAR ECONOMY / LIFE CYCLE	ISSUES AND CONCERNS	SPECIFIC ACTIVITIES AND/OR EXISTING POLICIES	OPPORTUNITIES AND RESPONSES TO CHALLENGES	ACTION PLAN AND RECOMMENDATIONS
<b>1. Sustainable Design and Clean Production (e.g., design of alternatives, reusability of materials, factory emissions, etc.)</b>	Some of the plastic residual waste may contain heavy metals such as lead and copper	Existing regulatory standards pertaining to manufacturing of products such as Food and Drug Administration (FDA) standards for food, cosmetics, and pharmaceuticals where manufacturers can comply	Promotion of standards for packaging for strict quality compliance	The manufacturer must make sure that no unnecessary/prohibited heavy metals are included in the packaging through testing procedures.
	Lack of investors that can provide facilities and infrastructure	Private-public partnership	Preparation of a study and proposal for potential sponsors to provide the facilities	The government and private sector should work together to welcome investors that may help fund facility development through incentivizing investments and utilizing available grants.
	Assurance on the environmental claims of packaging (e.g., paper)	Standards development for packaging (Department of Trade and Industry - Bureau of Philippine Standards / DTI-BPS) and ecolabelling	Consideration for proper labeling, and packaging classification in designing alternatives, recognizing the available standards and ecolabels	The private sector should follow national standards and/or have an in-house criteria for their environmental claims.  Standardization bodies shall develop more standards and criteria for other packaging products.
	Limited studies on appropriate alternative packaging solutions	-	Creation of a standard for sustainable packaging that emphasizes on clean production and use of sustainable materials	Research community shall devise further studies to find appropriate alternative packaging solutions.  Collaboration between the private sector, manufacturers, and LGUs should work together to ensure that the alternative packaging product is safe for the environment and consumers.
<b>2. Resource Regeneration and Protection (e.g., reduction at source, resource maintenance, environmental protection from degradation)</b>	There are areas in Iloilo City that need urgent environmental protection in relation to plastic waste	As for strategies to address the issue of residents throwing their waste into the river, the LGU together with the DENR-EMB and the Ombudsman decided to perform door to door waste collection within the 18 identified coastal barangays near Iloilo River to address the disposal of waste into river bodies by residents.	Implementation of monitoring and evaluation schemes for its policies and initiatives related to marine litter and waste leaked in other bodies of water	The government and private sector should work together to create criteria selection on which areas should be protected in Iloilo City and intensify control of critical areas.  LGUs shall distribute IEC materials and conduct campaigns emphasizing the negative impacts of waste buildup in the coastlines to human and marine life, and the efforts

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	<p>Coastal clean-ups and reef assessment show visible solid waste pollution in the marine areas</p> <p><i>Some of the litters that are observed in the coastal areas are brought by tidal waters during high tides especially when the velocity of the wind is strong. These may come from other coastal areas and not necessarily come from within the community.</i></p>	<p>Conduct of coastal clean-ups</p>	<p>Establishment of a regular mechanical (machine operated) or manual waste collection in the coastal areas to prevent the buildup of accumulated waste from different sources</p>	<p>people can make to minimize these impacts.</p> <p>LGUs shall distribute IEC materials and conduct campaigns emphasizing the negative impacts of waste buildup in the coastlines to human and marine life, and the efforts people can make to minimize these impacts.</p> <p>Barangays shall establish a depository system where the collected wastes from coastal clean-ups can be brought.</p> <p>Establishment of a regular marine cleanup programme (similar to street cleanup)</p>
	<p>The challenge in transitioning the industry from coal and fossil-based energy to renewable resources</p>	<p>The WTE Act under the Senate Bill No. 401</p> <p>A lot of manufacturers have already established infrastructures that use conventional energy to produce other products</p>	<p>Exploration of WTE (<i>utilization of renewable energy resources and its availability to minimize the extraction of fossil fuels</i>)</p>	<p>The government should pass the WTE Law immediately to support the use of advanced waste treatment technologies incinerators.</p>
<p><b>3. Improvement of Waste Management (e.g., proper waste collection, segregation and treatment; increase recycling rate, recovery rate, etc.)</b></p>	<p>Limited recovery activities from private sector</p> <p><i>There are companies that use and produce conventional packaging but they seem not to contribute to the recovery of their waste materials.</i></p>	<p>Presence of waste recovery facilities in the city</p>	<p>Involvement of some organizations, retail businesses, and manufacturers in cleaning up a certain area, recovering non-recyclable wastes, helping to provide solutions for waste disposal</p>	<p>The government and private sector shall work together to craft and implement waste recovery schemes, and provide incentives for EPR.</p>
	<p>Lack of infrastructure to treat and process recyclables and plastic residuals</p>	<p>Private-public partnership</p>	<p>Processing of waste materials and use of technology</p>	<p>LGUs should monitor and evaluate the ordinance to ensure compliance.</p> <p>The government shall build infrastructure to pre-process recyclables, treat the residual plastic waste.</p>
	<p>Increase in disposable of SUP</p> <p><i>Hotels prefer single-use plastics because they are worried of contamination as a result of the pandemic, and the coastal areas are</i></p>	<p>-For non-hazardous waste, [site activities or business like green antz..]</p>	<p>Designation of an area for disposal or drop-off of quarantine-produced waste</p>	<p>LGU should provide incentives, especially in waste segregation. The key to solving SWM is focusing on segregation at source.</p>

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	<p><i>swamped with waste, even though there is daily garbage collection. In the quarantine facility, all single-use plastics in effect are contaminated. As such, these plastics must be treated like hazardous waste and should not be mixed with other waste recyclables among others.</i></p>			<p>LGU should devise strategies like door-to-door waste collection.</p>
	<p>Unavailability of waste management programs in some barangay</p> <p><i>Some barangays have not adopted waste management strategies.</i></p>	<p>Trash to cashback programs</p>	<p>Enhancement and promotion of trash to cashback program: (a) partnership with businesses users for co-processing (fuels), (b) giving of environmental points to exchange for food or other materials from resources they recover and exchange, and (c) one way to encourage people to segregate at source</p>	<p>LGUs and barangays should adopt the National Plan of Action on Marine Litter.</p> <p>Barangay officials shall identify their waste issues then relay it to LGUs for action plans.</p>
	<p>No strict enforcement of RA 9003 in local ordinances</p>	<p>LGUs communicated the implementation of the local regulations to the barangays</p>	<p>Creation of council within LGU for RA 9003 implementation monitoring</p>	<p>LGU shall monitor and evaluate the ordinance to ensure compliance.</p>
	<p>Excessive amount of waste in landfills which also leaks to the marine ecosystem</p>	<p>Several barangays in Bacolod City are complying with waste segregation</p>	<p>-</p>	<p>Aside from having the landfill, the research community shall have further study for the advanced incinerator. The landfill is intended to be good for residual waste and non-biodegradable waste. Other countries, especially Japan, have advanced incinerators to address plastic waste.</p> <p>LGU should improve the implementation of their waste management programs and create projects to encourage the consumers to practice waste reduction and segregation.</p>
	<p>The RA 9003 is not strongly implemented in the local ordinances present in Bacolod City</p>	<p>Existing policies in Bacolod City that ban the use of plastics</p>		<p>The government should revisit and improve the Implementing Rules and Regulations (IRR) of RA 9003.</p> <p>LGU shall review their functions and their ordinances. LGU shall also add more incentive schemes in their ordinances.</p> <p>The government or those in authority</p>

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	<p>Scheduling of waste collection</p> <p><i>Businesses shall dispose of their waste in the night time so that the LGUs can collect according to the schedule, however, there are still establishments that dispose of their waste on non-schedule time.</i></p> <p>Inadequate ability of households to segregate their waste</p> <p><i>Especially in the informal sector/settlers, they have a hard time attending to their needs and they cannot afford to buy additional packages just to segregate their waste.</i></p>	<p>About 11 or 12 barangays out of 61 barangays are complying with the segregation component. The collection of waste is roughly 500 tons per day</p> <p>Existing schedule of waste collection and segregation schemes</p>	<p>-</p> <p>-</p>	<p>should not place all of the blame on consumer behavior. Instead, they should form a public-private partnership to reduce the use of traditional plastics and handle SWM.</p> <p>The government should study, mandate and legislate the other laws for better improvement.</p> <p>Some implementations shall be scientifically-based, so that solid wastes may be avoided being disposed of in the oceans.</p> <p>LGUs and the barangay should come up with an agreement in the segregation component of SWM.</p> <p>LGUs should work with strict implementation of segregation at source and monitor the waste disposal of the establishments.</p> <p>The communities shall be engaged to participate in segregation of waste.</p>
<p><b>4. Promotion of Alternative Packaging Products</b></p>	<p>Paper bags, as an alternative to plastics, are not sustainable in the long run because of the amount of trees cut down for production</p> <p>Limited testing centers/equipment for packaging materials to test the biodegradability of the packaging</p>	<p>-</p> <p>-</p>	<p>LGU's recognition to the available packaging alternatives</p> <p>Conduct of study that makes it easier to see the potential drawbacks of each packaging product</p> <p>-</p>	<p>The government and private sectors shall promote Innovative actions such as "bring your own bags" and "bring your own container" (e.g., promote bringing your own shopping bags when doing marketing and grocery; promote using and bringing your own water bottle instead of buying water in plastic bottles).</p> <p>Residents shall help through simple acts of minimizing carbon footprint which will create a big impact on the environment.</p> <p>The facilities should have deep knowledge on the recycling of alternative packaging products.</p> <p>Producers should embrace alternate packaging gradually, conduct additional research, and avoid working in a fast-paced setting.</p>

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	Alternative items may be unreasonably expensive for the majority of Iloilo City residents	A plastic bag producer in Iloilo City initiated the production of biodegradable plastics however, it is quite expensive compared to the conventional plastics that are found in the market	Study that can present the cost evaluation (cost-benefit analysis) of the alternatives.	Producers should make consumer-friendly, affordable, and accessible items.  Example: toothbrushes made from bamboo are usually too expensive to some consumers, thus they will not take the product
	Preferability to use plastics even though there are sustainable alternatives	Iloilo City's Provincial Ordinance No. 2019-193 that regulates the use of single-use plastics and expanded polystyrene for goods and commodities and promotes the use of native baskets and other biodegradable materials  Ordinance on plastic was proposed by a youth group, but a public hearing regarding it was not received	Promotion of "No plastic zone"  Potential investors that may promote sustainable options	Organizations shall propose how to develop/promote less plastics, encourage packaging investors, and implement "no plastic zone".  LGU should consider the youth's proposal for plastic regulation.
	Sustainable supply of raw materials for the production of alternative packaging materials	-	-	-
	Confusion in segregating waste brought about by consumer-based attitude	-	-	LGU shall provide a guide for segregating waste and conduct an IEC campaign regarding it.
<b>5. Public Awareness Raising on SWM</b>	The mindset of the consumers who are intact in buying sachets because of convenience and price preferability  <i>When it comes to tingi vs. bulk products, don't expect a 400-peso account to purchase 200 pesos worth of product.</i>	-	-	LGU shall increase the IEC campaign to raise awareness of the advantages in buying in bulk to reduce the tingi culture. Residents shall acknowledge paradigm shift and change in community practice.  The Department of Education (DepEd) shall include SWM concepts and frameworks in school curriculum.
	Lack of extensive understanding of SWM Plan and RA 9003 on barangay level  <i>The barangay cannot rely on LGU to address all issues on SWM.</i>	Trash to cashback program  NGO-led campaigns	Change the behavior of people in managing waste through incentivizing segregation at source like what trash to cash back program	LGU and private sectors shall promote waste depository schemes such as trash to cash back programs and raise awareness in SWM through IEC campaigns.
	Lack of SWM knowledge in some communities and personnel	DENR and DepEd's ongoing partnership for the circulation of	-	The behavior of the people is part of the problem in addressing the waste

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	from the LGUs	the IEC campaign for SWM awareness		pollution. One department in the government sector should involve or invite people who specialize in the behavior problem and address this with a long-term approach.
	Waste segregation at source not practiced  <i>There are still a few barangays that do not practice waste segregation at source.</i>	Distribution of IEC materials in all barangays by the municipal government	Bacolod City LGU encouraging every barangay to implement segregation at source within their vicinity	LGU shall create a roadmap for best practices in SWM at the barangay level that can be followed by other barangays. The goal of engaging at least 50% of the population should be addressed at the barangay level to participate in SWM.

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