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EXPERTISE FRANCE



Rethinking Plastics

Circular Economy Solutions to Marine Litter

COMPARATIVE STUDY REPORT

of Existing International and
Local Standards, Policies, and
Best Practices related to
Sustainable Packaging

.....

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



ACKNOWLEDGEMENT AND DISCLAIMER

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LIST OF ABBREVIATIONS

BEST	Basic Environmental Systems & Technologies, Inc.
BFFP	Break Free From Plastic
BMZ	German Federal Ministry for Economic Cooperation and Development
CCC	Climate Change Commission
COVID-19	Coronavirus Disease
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DTI	Department of Trade and Industry
EPR	Extended Producers Responsibility
EPWMD	Environmental Protection and Waste Management Department
EU	European Union
GAIA	Global Alliance for Incinerator Alternatives
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HDPE	High Density Polyethylene
IEC	Information, Education and Communication
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
LGU	Local Government Unit
MMDA	Metro Manila Development Authority
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
MWRP	Municipal Waste Recycling Program
NCR	National Capital Region
NEA	National Environment Agency
NELP-GCP	National Ecolabelling Programme – Green Choice Philippines
PARMS	Philippine Alliance for Recycling and Materials Sustainability
PCEPSDI	Philippine Center for Environmental Protection and Sustainable Development, Inc.
PCEX	Plastic Credit Exchange
PE	Polyethylene
PP	Polypropylene
PRO	Producer Responsibility Organization
RA 9003	Ecological Solid Waste Management Act of 2000
SCP	Sustainable Consumption and Production
SUP	Single-use Plastics
USAID	US Agency for International Development
WWF	World Wide Fund for Nature



INTRODUCTION

1.1 Background of the Study

Packaging is the world's third-largest industry, outnumbering almost any other industry, including entertainment, manufacturing, and agriculture. Packaging affects all areas of the industry in some way, making it a significant part of the global economy. The broad scope of packaging is evident with the fact that everything people buy comes in a box, shipped in a package, and the package sometimes is even packed inside another packaging¹.

Packaging has been a great tool in providing convenience in every person's daily lives, in terms of hygiene, cost utilization, and utility among others. However, with the convenience of packaging, what is left is an alarming rate of environmental threat, especially in the marine ecosystem caused by poor packaging waste management. The United States is the world's biggest producer of plastic waste and the country's plastic waste inputs to the coastal environment are among the highest in the world due to illegal dumping, littering, and the export of waste to other countries where it is mismanaged, while Indonesia and India are ranked as the top two contributors to plastic waste entering the Ocean². The Philippines also contributes greatly in the worldwide plastic issue. Consumer products abound in their markets, most of which are wrapped in single-use disposable plastics ranging from sachets to shopping bags. According to Global Alliance for Incinerator Alternatives (GAIA), nearly 60 billion sachets, 17.5 billion shopping bags, and 16.5 billion *labo* bags are used by Filipinos each year³. These plastic residuals which cannot be composted or recycled build up in landfills or leak into water bodies, blocking streams and worsening flooding and marine pollution.

Packaging policies are the product of intersecting issues that economies all over the

world are facing. On one hand, population growth has resulted in increased consumption further resulting in increased per capita waste production. Packaging waste, especially plastic packaging waste, is becoming more prevalent in household waste. Moreover, the current urban waste management infrastructure is unable to keep up with the simple waste collection and is woefully unprepared to treat plastic packaging waste in a way that allows for material recovery via recycling. The majority of plastic packaging waste is disposed of in landfills or, much worse, leaks into the environment. To address the growing crisis of plastic leakage into the environment (especially the marine environment), packaging policies must address the intersecting challenges of packaging waste (particularly plastics), and the limitations of existing municipal waste management infrastructures⁴.

As packaging-related issues continue to rise, sustainable packaging becomes more recognized globally. To define, the Sustainable Packaging Coalition provided a set of criteria that may guide consumers and manufacturers in interpreting sustainable packaging⁵, as listed:

- Is beneficial, safe, and healthy for individuals and communities throughout its life cycle
- Meets market criteria for performance and cost
- Is sourced, manufactured, transported, and recycled using renewable energy
- Optimizes the use of renewable or recycled source materials
- Is manufactured using clean production technologies and best practices
- Is made from materials healthy throughout the life cycle
- Is physically designed to optimize materials and energy
- Is effectively recovered and utilized in biological and/or industrial closed-loop cycles

¹ Value Colleges. (2021). *How is Packaging the 3rd Largest Industry in the World?*. Retrieved from <https://www.valuecolleges.com/resources/faqs/global-packaging/>

² Ocean Unite. (2021). *Key Issues*. Retrieved from <https://www.oceanunite.org/issues/marine-plastic-pollution-2/>

³ Global Alliance for Incinerator Alternatives. (2020). *Regulating Single-Use Plastics in the Philippines: Opportunities to move forward*. Retrieved from: <https://www.no-burn.org/wp-content/uploads/Philippine-Policy-Brief-on-SUPs-Ban.pdf>

⁴ UN Environment Programme. (2019). *The role of packaging Regulations and Standards in driving the Circular Economy*. Retrieved from

<https://www.unep.org/resources/report/role-packaging-regulations-and-standards-driving-circular-economy>

⁵ Sustainable Packaging Coalition by GreenBlue. (2011). *Definition of Sustainable Packaging Version 2.0*. Retrieved from <https://sustainablepackaging.org/wp-content/uploads/2017/09/Definition-of-Sustainable-Packaging.pdf>

This study seeks to compare and analyze different existing standards, policies and initiatives on sustainable packaging to support the project *“Development of Voluntary Guidelines on Sustainable Packaging Towards Reduction of Marine Litter and Promoting Packaging from Alternative Materials Through Market-Based Approach”* implemented by the Philippine Center for Environmental Protection and Sustainable Development, Inc. (PCEPSDI), also dubbed as the “Sustainable Packaging towards Marine Litter Reduction” which aims to reduce marine litter by promoting packaging for reuse and from alternative materials using market-based instruments. This project is funded by the ‘Rethinking Plastics – Circular Economy Solutions to Marine Litter’ project of the European Union (EU) and the BMZ. ‘Rethinking Plastics’ is implemented by GIZ and Expertise France.

One of the market-based instruments carried out by the project is the development of ecolabelling criteria for packaging under the National Ecolabelling Programme – Green Choice Philippines (NELP-GCP) which promotes sustainable consumption and production (SCP) and extended producers responsibility (EPR). The criteria provides a basis to support the claims of the packaging product companies as sustainable.

In order to provide a well-rounded recommendation for the development of criteria, this comparative study covers extensive research on the existing international and local standards, policies, and best practices of countries that have produced implementation efforts on sustainable packaging. Data and information collected in this study will be utilized as a reference in creating the ecolabelling criteria applicable in the Philippine context to drive effective sustainability measures and strategies.

1.2 Objectives

The study generally aims to compare different standards and initiatives related to sustainable packaging to provide inputs for the development of the NELP-GCP criteria for packaging products. Specifically, it seeks to:

1. Determine trends and design of the existing international and local best practices, programmes, and policies related to circular economy of packaging and sustainable packaging;
2. Identify and differentiate the existing best practices, policies, and standards and their testing methods; and
3. Analyze the applicability of determined patterns in the Philippine context.

1.3 Scope and Limitations

The study is a secondary research covering both international and local sources on standards, policies, programmes, and best practices related to sustainable packaging. To determine the list of references, the study uses the following criteria in shortlisting all available resources gathered:

1. Relation to the project as guided by the conceptual framework
2. Relevance and applicability to the Philippines
3. Amount of significant information available

METHODOLOGY

2.1 Research Design and Data Collection

This study uses comparative analysis of available and accessible sources of information on both local and international standards and initiatives related to sustainable packaging. This is variable-oriented full desk research which uses a descriptive research method to identify trends and designs of standards, policies, and best practices to determine their applicability in the Philippines. The study focuses on review and analysis of secondary sources from the internet, the government partners, and private businesses.

The study is limited to existing local and international sustainable packaging references that are accessible on the internet and those provided by government partners. Nonetheless, the study covers:

- 15** local and international sustainable packaging-related standards
- 10** local and international sustainable packaging-related policies
- 11** local and international best practices and initiatives on sustainable packaging

2.2 Conceptual Framework

The study compares and analyzes existing standards and initiatives on sustainable packaging. It focuses on two major categories, namely, the circular economy of packaging and sustainable packaging. As the amount of packaging materials continues to increase because of rapid urbanization and continuous changes in consumption and production patterns, the circularity of these materials should be promoted and supported. The study adopts some components of the product life cycle from the studies of Reike, et al. (2018)⁶ and Campbell-Johnston, et al. (2020)⁷, as shown in **Figure 1**. For sustainable packaging, the study is focusing on the definitions and criteria, available packaging alternatives, and corporate social responsibility activities.

With the focus mentioned, the study looks at the trends and design of different standards and initiatives, determines their differences, and analyzes their applicability in the Philippine context. Since the study seeks to provide relevant inputs in the development of the ecolabelling criteria for sustainable packaging, this study will serve as a reference on how other countries implement their standards and policies, and how these can be adopted in the Philippines.

The study should be applicable for the project's focus points, specifically the marine environment, waste management, governance and community engagement, and development of sustainable packaging. The whole conceptual framework is shown in **Figure 1**. This information will feed the activities of the project, especially the criteria development and policy study.

⁶ Reike, et al. (2018). *The circular economy: New or Refurbished as CE 3.0? — Exploring Controversies in the Conceptualization of the Circular Economy through a Focus on History and Resource Value Retention Options*. *Resources, Conservation & Recycling*, 135. p. 258. DOI: <https://doi.org/10.1016/j.resconrec.2017.08.027>

⁷ Campbell-Johnston, et al. (2020). *The Circular Economy and Cascading: Towards a Framework*. *Resources, Conservation & Recycling: X*, 7, p. 8. DOI: <https://doi.org/10.1016/j.rcrx.2020.100038>

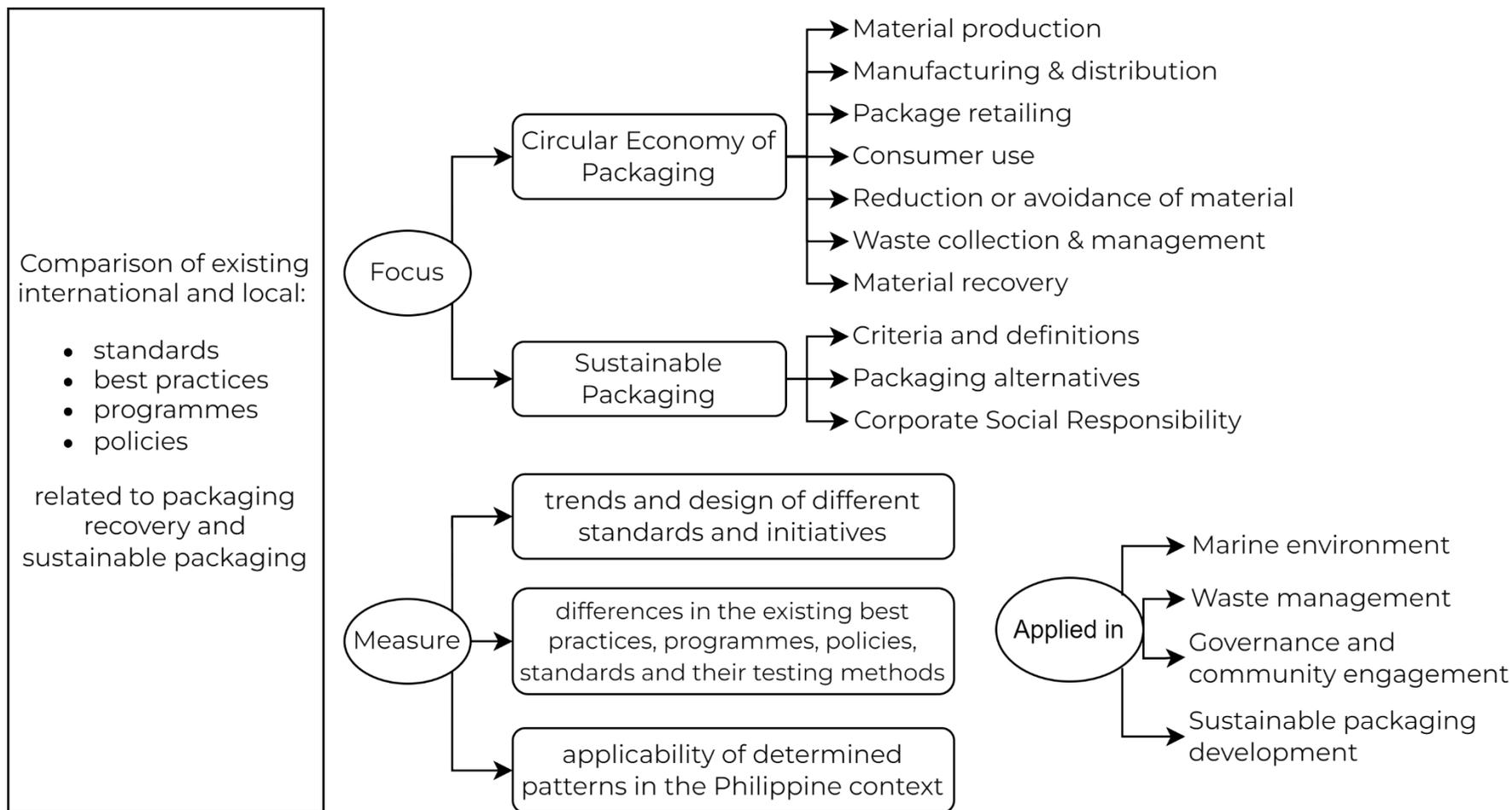


Figure 1. Conceptual Framework⁸

⁸ adopted from Huovila, Bosch & Airaksinen (2019). Comparative analysis of standardized indicators for Smart sustainable cities: What indicators and standards to use and when?. *Cities*, 89. DOI: <https://doi.org/10.1016/j.cities.2019.01.029>

ANALYSIS AND DISCUSSION

3.1 International and Local Standards

With the increasing consciousness on sustainability globally, standards are being developed by different standardization bodies all over the world. These standards and their criteria serve as a guide for consumers to have assurance in procuring safe, reliable, and good quality products and services; as well as help governments in developing and implementing well-grounded regulations⁹.

Specifically for packaging, this study looks into internationally-recognized standards available to determine commonalities and differences in their structure and contents. This section is subdivided into three: International Organization for Standardization (ISO) standards, Type 1 Ecolabels, and other ecolabels. **Annex 1** shows the standards and ecolabels covered in this study and their summary.

A. ISO Standards

3.1.1 ISO 18603:2013 - Packaging and the Environment - Reuse

ISO 18603:2013 provides the standards for packaging to be categorized as reusable, as well as the procedures for assessing compliance with the requirements and the associated systems. This contains protocols for application, as determined in the international standard.

Three types of system are provided within the terms of the standard namely: (1) the closed-loop system where packaging is reused by a company or a cooperating group of companies; (2) the open-loop system where packaging is reused by unspecified companies; and (3) hybrid system that is divided into two parts: the first where the packaging remains with the end-user with no design for redistribution leading to commercial filling; and the second where packaging is used as an auxiliary product for transporting contents to

the reusable packaging. The packer, filler, supplier, emptier, and other related units are the ones responsible in identifying the most appropriate system to use.

Applicability in the Philippines:

- Setting of criteria for closed-loop system
- Setting of criteria for open-loop system
- Setting of criteria for hybrid system

Packaging has always been part of everyone's lives. With the increasing trend to advance sustainability, private sectors, especially large companies, implement initiatives that help the environment. Unilever, a global company offering multiple consumer goods, has started innovating with their reuse-refill revolution, with the goal to make all its plastic packaging reusable, recyclable or compostable by 2025¹⁰. The need to address plastic pollution has become widely recognized, and many significant corporations, including Unilever, have pledged to create a circular economy for plastic. Recycling is vital, but it is recognized that reusable and refillable containers could be the game-changer the world needs.

Consumers, on the other hand, are increasingly demanding more environmentally preferable packaging. More advanced packaging, including higher quality and even personalized packaging, is also becoming more popular. Innovative reuse models can capitalize on these evolving tendencies by providing better-looking, more practical packaging with customizability, for example. As a result of these changes in the consumption patterns of packaging, business opportunities may also arise. The ISO 18603:2013 can be used as a guide by corporations wanting to shift to reusable packaging, such as Unilever.

3.1.2 ISO 18604:2013 - Packaging and the Environment - Material Recycling

ISO 18604:2013 specifies the requirements for packaging to be recoverable in the form of

⁹ International Organization for Standardization. (n.d.). Benefits of standards. Retrieved from <https://www.iso.org/benefits-of-standards.html>

¹⁰ Unilever. (2019 July 30). We're innovating for a reuse-refill revolution. Retrieved from <https://www.unilever.com.ph/news/news-and-features/2019/we-are-innovating-for-a-reuse-revolution.html>

material recycling, while taking into account the ongoing development of both packaging and recovery technologies. It also indicates the procedures for assessing compliance with the requirements. Under the procedures for assessing the recyclability criteria, the utilization criteria are divided into two parts, (1) criteria for emptying by end-user where the supplier must ensure that the design for the primary packaging would allow the common practices for emptying packaging possible; and (2) criteria for emptying by the end-user where packaging must allow end-user to carry out separation of multi-material packaging through normal and foreseeable circumstances. Information regarding any particular requirements of the expected and relevant collection and sorting processes are identified and considered in the design and construction of the packaging.

Applicability in the Philippines:

- Setting of utilization criteria
- Setting criteria for collection and/or sorting

Recycling in the Philippines is heavily reliant on the monetary worth of recyclable materials, making it a lucrative business for garbage collectors and recycling centers¹¹. Plastic products, in fact, have some of the greatest values among recyclable garbage. Existing plastic recycling facilities, on the other hand, only recycle a small portion of recyclable plastic garbage, with the majority of discarded plastic waste ending up in landfills or the ocean (Pepino, 2019).

A well-run recycling sector reduces the chances of recyclable garbage polluting water bodies or exceeding landfill capacity. By filling these gaps, there is now an incentive to properly classify and collect debris, especially in places where garbage trucks do not reach, and even low-value residuals that waste pickers typically leave behind. Improved quality and quantity of garbage collection are the results of an incentive workforce and a tight system, which ensures supplies for the recycling industry's activities (Pepino, 2019). To further improve recycling in the Philippines, ISO 18604:2013 may be used as a guide in determining the standard for material recycling.

3.1.3 ISO 18606:2013 - Packaging and the environment - Organic Recycling

The ISO 18606:2013 specifies procedures and requirements for packaging that are suitable for organic recycling. Packaging can be recovered through organic recycling if all its individual components fulfill the indicated requirements. The key factors to be considered for each component of this standard are characterization of packaging, ultimate biodegradation, disintegration, and no adverse effect on the ability of compost to support plant growth.

Applicability in the Philippines:

- Specifying criteria for materials that are suitable for organic recycling

According to Business Mirror¹² Personal Collection Direct Selling Inc. rolls out its flagship products that are all in biodegradable packaging. The switch to biodegradable packaging is in line with its commitment to environmental conservation and responsibility. Its new plastic packaging is expected to decompose within five to ten years in the landfills. Its expected decomposition is a hundred times faster than the standard plastic bottle which usually takes up to a thousand years. The initiative of the company to convert to the use of biodegradable plastic bottles is a big step in the local packaging industry that might lead to the promotion and market boost of packaging that can be considered organically recyclable in the country.

3.1.4 ISO 18602:2013 - Packaging and the Environment - Optimization of the packaging system

ISO 18602:2013 establishes the requirements and procedures for evaluating packaging to guarantee that the weight or volume of its material content is optimized in accordance with the packaging's purposes. This is one of several alternatives for lowering the environmental impact of packaging. The critical areas to look for when determining the achievable level of packaging optimization are protection of goods, packaging manufacturing process, packaging/filling process, logistics, presentation and marketing of goods, user/consumer acceptance, information, safety, legislation, and other issues.

Applicability in the Philippines:

- Minimization of the packaging material use that still meet its necessary requirements for it to function properly

¹¹ Pepino, V. (2019 August 27). An integrated recycling industry for sustainability. Thinking Beyond Politics. Retrieved from <https://www.bworldonline.com/an-integrated-recycling-industry-for-sustainability/>

¹² Business Mirror. (2021 September 16). Personal Collection Direct Selling Inc. launches biodegradable packaging on flagship products. Retrieved from <https://businessmirror.com.ph/2021/09/06/personal-collection-direct-selling-inc-launches-biodegradable-packaging-on-flagship-products/>

Nestlé, a multinational food and drink processing corporation, has joined the Ellen MacArthur Foundation's New Plastics Economy program as a partner to help encourage innovation and awareness of a circular economy for plastics¹³. This project brings together key stakeholders to rethink and reinvent plastic's future. Nestlé is on its way to being a zero-waste company as part of its commitment to sustainability.

According to their data, Nestlé's total packaging by weight is 88 percent recyclable or reusable in 2020 (87 percent in 2019), and 62 percent of its total plastic packaging is recyclable or reusable (66 percent in 2019). By 2020, recycled materials account for 35 percent of all packaging, with 4.2 percent recycled plastic in plastic packaging. The weight of reusable packaging is calculated by dividing the package's weight by the number of intended rotations into use over the package's lifetime. As a result, the package's reported weight is much less than the corresponding single-use packaging tonnage the company has offset.

Initiatives similar to this by multinational companies can greatly impact the country's production and consumption pattern as optimizing the use of materials can generate less waste output. With ISO 18602:2013, companies may innovate their packaging based on the international standard set, optimizing the packaging system in their operations. There is a great opportunity for large companies in the Philippines to optimize their packaging systems as part of their sustainability initiatives.

B. Type 1 Ecolabels

3.1.5 Germany: DE-UZ 2 Returnable Bottles and Glasses

Blue Angel¹⁴, the German Ecolabel, developed an ecolabel criteria for returnable bottles and glasses¹⁵ in 2011, with the most recent version dated 2020. The use of the ecolabel makes it easier for consumers to identify returnable bottles from a



¹³ Nestlé. (2021). Improving packaging performance. Retrieved from <https://www.nestle.com/csv/impact/environment/packaging>

¹⁴ Blue Angel Label. Retrieved from [https://www.wikiwand.com/en/Blue_Angel_\(certification\)](https://www.wikiwand.com/en/Blue_Angel_(certification))

¹⁵ Blue Angel. (2011 January). DE-UZ 2 Returnable Bottles and Glasses. 2011 Edition (Version 4). Retrieved from <https://produktinfo.blauer-engel.de/uploads/criteriafile/en/DE-UZ%20002-201101-en%20Criteria-2020-01-03.pdf>

beverage packaging that has a deposit on it in accordance with the German Packaging Ordinance. Returnable bottles frequently outperform all one-way packaging in terms of overall environmental impact, especially if transportation can be reduced. Furthermore, returnable packaging contributes to the goals of waste reduction and sustainable consumption.

The goal of this ecolabel is to encourage people to use returnable bottles and glasses. As a result, the following environmental and health benefits such as information on the regional refilling location and returnable statement are added on the ecolabel seal.

Applicability in the Philippines:

- Government and businesses to promote returnable bottles, in line with the local guidelines
- Consumers to distinguish and patronize the use of the returnable bottles from the one pass bottles

As stated by The Freeman¹⁶, the distinction between a one pass bottle and a returnable bottle is significant. Single-use bottles are those used in wines and other beverages where the bottles do not need to be returned after use. It is usually not labeled with the beverage's brand, but some may have paper labels, and it is made of considerably thinner glass, while some are truly built for full use recyclability. When the bottle is a returnable glass bottle, it can be used multiple times for the same purpose. This lowers the cost of production while also decreases its environmental impact.

3.1.6 Germany: DE-UZ 210 Reusable Cup Systems

In 2019, Blue Angel established an ecolabel criteria for reusable cup systems¹⁷ with the goal of reducing the number of disposable cups and strengthening environmentally beneficial reusable cup systems. This includes specifications for the cups themselves, as well as the calculation of their circulation figures and the encouragement to use reusable cups rather than throwaway cups.

Several inclusion in the technical requirements for the cups and lids include: (1) material requirements wherein the material must not

¹⁶ The Freeman. (2019 April 4). *RGB and the environment!*. Retrieved from

<https://www.philstar.com/the-freeman/cebu-business/2019/04/04/1907216/rgb-and-environment>

¹⁷ Blue Angel. (2019 January). DE-UZ 210 Reusable Cup Systems 2019 Edition (Version 2). Retrieved on <https://produktinfo.blauer-engel.de/uploads/criteriafile/en/DE-UZ%20210-201901-en-Criteria-V2.pdf>

contain polycarbonate or melamine; (2) fitness for use that states that cups and lids must be food-safe, tasteless, heat resistant, and must retain shape even when subjected to extreme temperatures; and (3) plastic requirements that states that cups must not be made of mixed material, and lids must not be combined with materials that will prevent recycling.

The ecolabel for reusable cup systems can be used to label reusable cup systems that distinguish themselves due to the following environmental and material properties:

- Avoidance of materials that are harmful to the environment and health;
- Avoidance of waste;
- Long service life of the reusable cups; and
- Widespread introduction of reusable lids.

As a result, having the label contributes to environmental and health benefits, specifically waste reduction and resources savings, as mentioned in the document.

Applicability in the Philippines:

- Specified technical requirements for reusable cups and lids
- Consideration for the environmental and material properties

The ABS-CBN News reported that the i-Price Group, a shopping website that offers a wide selection of products and brands, provided by different companies in Southeast Asia, undertook a study that assessed the potential savings of Filipinos for utilizing reusable products instead of disposables¹⁸. According to the price comparison platform, an average female may save up to PHP 4,603 and an average male may save PHP 2,542 annually by shifting completely to more environmentally-preferable products¹⁹. Specifically for packaging, the study finds a saving of PHP 769 per year investing in tote bags in replacement for plastic bags. The i-Price Group emphasizes the economic value of investing in things that replace disposables. Thus, the use of reusable containers like cups and lids do not just promote sustainability but savings as well.

¹⁸ Cerezo, A. G. (2020 October 3). Filipinos can save P2.5K to P4.6K if they switch to reusable products. Retrieved from <https://news.abs-cbn.com/life/10/03/20/filipinos-can-save-p25k-to-p46k-if-they-switch-to-reusable-products>

¹⁹ Romualdez, I. (2021). "You Could Afford an Expensive 5-Star Buffet Dinner if You Use These 5 Eco-Friendly Products for a Year". Retrieved from <https://iprice.ph/trends/insights/using-these-5-eco-friendly-products-could-save-you-php-46k/>

3.1.7 Japan: Eco Mark Product Category No. 121 Returnable Containers/Packaging Materials

Eco Mark²⁰ is Japan's only Type 1 environmental label. The Product Category No. 121 was established in 2007 with latest revisions for Version 2.3 dated 2019. It has a total of eight criteria for returnable containers and different packaging materials.



- A. Glass bottles, glass containers/ packaging materials²¹:** This criteria is applicable to glass bottles, glass containers and packaging materials that use glass with a weight not less than 70 percent of the whole product as a major material.
- B. Plastic containers and packaging materials²²:** This criteria is applicable to plastic containers and packaging materials that use plastic with a weight not less than 70 percent of the whole product as a major material.
- C. Paper containers and packaging materials²³:** This criteria is applicable to paper containers and packaging materials that use paper with a weight not less than 70 percent of the whole product as a major material.
- D. Wood or bamboo containers and packaging materials²⁴:** This criteria is applicable to wood or bamboo containers and packaging materials that use wood and bamboo with a weight not less than 70 percent of the whole product as a major material.
- E. Metal containers and packaging materials²⁵:** This criteria is applicable to metal containers and packaging materials that use metal with a weight not less than 70 percent of the whole product as a major material.
- F. Pottery and earthenware containers²⁶:** This criteria is applicable to pottery and

²⁰ Eco Mark Label. Retrieved from <https://www.ecomark.jp/english/ecomark.html>

²¹ Japan Environment Association. (2007). 121A V2 Criteria. Retrieved from https://www.ecomark.jp/nintei/pdf/e121V2_A_a.pdf

²² Japan Environment Association. (2007). 121B V2 Criteria. Retrieved from https://www.ecomark.jp/nintei/pdf/e121V2_B_a.pdf

²³ Japan Environment Association. (2007). 121C V2 Criteria. Retrieved from https://www.ecomark.jp/nintei/pdf/e121V2_C_a.pdf

²⁴ Japan Environment Association. (2007). 121D V2 Criteria. Retrieved from https://www.ecomark.jp/nintei/pdf/e121V2_D_a.pdf

²⁵ Japan Environment Association. (2007). 121E V2 Criteria. Retrieved from https://www.ecomark.jp/nintei/pdf/e121V2_E_a.pdf

²⁶ Japan Environment Association. (2007). 121F V2 Criteria. Retrieved from https://www.ecomark.jp/nintei/pdf/e121V2_F_a.pdf

earthenware containers that use pottery and earthenware with a weight not less than 70 percent of the whole product as a major material.

G. Fiber packaging materials²⁷: This criteria is applicable to fiber packaging materials that use fiber with a weight not less than 70 percent of the whole product as a major material.

H. Other containers and packaging materials²⁸: This criteria is applicable to containers and packaging materials other than those mentioned in A to G with a weight not less than 70 percent of the whole product as a major material.

Applicability in the Philippines:

- Creating criteria based on subcategories per packaging material
- Specifying minimum number of product reuse
- Requiring established product collection system through marking or information disclosure

As stated in the Business Mirror, the declaration, which covers the safe use of reusable bags, containers, and refill systems during the on-going coronavirus disease (COVID-19) crisis, was welcomed by health and environmental organizations affiliated with the Break Free From Plastic (BFFP) movement²⁹. According to the health experts, reusable and refill systems can still be used safely if basic and stringent cleanliness measures are followed. Geminn Louis C. Apostol, one of the signatories to the declaration, emphasized that reusables are more environmentally friendly packaging options that are easier to clean with soap and water or even basic household disinfectants; single-use plastics are not inherently safer than reusables; not only do they contribute to environmental degradation, but they have also been found to generate extra public health risks once they are discarded. He also mentioned the importance of advocating evidence-based and properly enforced waste management policies and practices. With the environmental and waste management concerns in the country, there are groups and companies that are advocating the use of reusable containers, but it is still limited due to several concerns such as cross-contamination. Criteria for reusable containers can greatly aid the wider promotion for environmentally-preferable products ecolabelling certification, guaranteeing that

²⁷ Japan Environment Association. (2007). 121G V2 Criteria. Retrieved from https://www.ecomark.jp/hintei/pdf/e121V2_G_a.pdf

²⁸ Japan Environment Association. (2007). 121H V2 Criteria. Retrieved from https://www.ecomark.jp/hintei/pdf/e121V2_H_a.pdf

²⁹ Mayuga, J.L. (2020 June 29). Anti-plastic pollution group welcomes adoption of reusable packaging system. Retrieved from <https://businessmirror.com.ph/2020/06/29/anti-plastic-pollution-group-welcomes-adoption-of-reusable-packaging-system/>

these products have lesser negative environmental impacts.

3.1.8 Japan: Eco Mark Product Category No. 140 Refill Containers and Resource Saving Containers

The Eco Mark Product Category No. 140³⁰ Version 1.13 is focused on plastic containers and packaging, efficient use of resources, and environmentally friendly materials. The product category has nine criteria under it.

A. Refill Container: This criteria is applicable for containers with refillable contents for the purpose of refilling the contents of the main body. The main container body is aimed to be used repeatedly.

B. Replacement container: This criteria is applicable to containers filled with replacement contents to be replaced with the main body container. A part of the main container (spray, pump, etc.) is aimed to be used repeatedly.

C. Resource-saving container (edible oil container): This criteria is applicable for cooking oil containers that consist of a plastic inner container (inner bag) and a paper outer container (outer box).

D. Aseptic packaging rice container: This criteria is applicable for aseptic packaging containers and packaging used for rice.

E. Polyethylene terephthalate (PET) bottle (container): This criteria is applicable for the government-designated PET bottles based on the "Act on promotion of Effective Utilization of Resources" and their preforms.

F. Plastic containers and packaging using recycled plastic: This criteria is applicable to plastic containers and packaging that functions to maintain the quality of its content.

G. Plastic containers and packaging using plant-derived plastic: This criteria is applicable to plastic containers and packaging that functions to maintain the quality of its content.

H. Multiple containers and packaging using plastic: This criteria is applicable to multiple containers and packaging with multiple parts that maintain the quality of its contents and use plastic containers

³⁰ Japan Environment Association.(n.d.) No.140 Containers and packaging for food and drink, cosmetics, household items, etc. Version 1.13. Retrieved from <https://www.ecomark.jp/hintei/140.html>

and packaging for one or more components.

- I. Plastic materials for containers and packaging:** This criteria is applicable for plastic materials and packaging, shrink films, stretch films, general-purpose containers (e.g., lunch containers, food trays, etc.), binding tapes, plastic cushioning materials, and other similar materials. In addition, this criteria is also applicable to plastic intermediate materials for containers and packaging that are premised on secondary processing, packaging films, label films, Amorphous-PET sheets, and other similar materials.

Applicability in the Philippines:

- Development of criteria for refillable containers
- Identification of applicable containers and packaging types for refilling system

According to Cosmo Films, the use of a returnable supply chain can significantly reduce a company's carbon footprint³¹. For companies that require continuous shipment of products between its manufacturing sites, the use of single-use corrugated packaging will result in waste material accumulation in the landfill. The application of reusable packaging in such situations can help minimize the use of raw materials, energy, and accumulation of waste. Returnable packaging cannot only lessen the consumption of raw materials but can also help minimize carbon dioxide emission through stacking facilitation and efficient space sizing during transportation.

3.1.9 Taiwan: Green Mark - Plastic Films for Food Packaging

The Green Mark Standard³² on plastic film for food packaging³³ is applicable to materials that meet the requirements of CNS 1048, also known as the general rule for plastic films for food packaging. The polymer materials for food packaging applications such as plastic films, bags, containers, and container structural materials, with less than 250 microns are covered by this standard.



³¹ Cosmo Films. (2020 December 14). Benefits Of Reusable Packaging. Retrieved from <https://www.cosmofilms.com/blog/benefits-of-reusable-packaging/>

³² Green Mark Label. Retrieved from [http://www.rpclab.com/en/taiwan_greenmark.php#:~:text=The%](http://www.rpclab.com/en/taiwan_greenmark.php#:~:text=The%33)

³³ Green Mark. Retrieved from <https://greenliving.epa.gov.tw/greenlife/uploadfiles/Criteria/73/eeel1297-69a0-463d-892a-3db749e8dbdb.pdf>

Applicability in the Philippines:

- Criteria for plastic materials under given specific thickness

As stated in the British Plastics Federation, food waste has a higher carbon footprint when compared to packaging waste³⁴. It mentioned that to prevent food from spoilage, plastic packaging is often used since it prolongs the shelf life of products and have different functional properties such as being safe for food, flexible, transparent, opaque, and chemical and heat resistant. Plastic has been identified as the ideal packaging material today, and it has paved the way of transporting and utilizing a wide range of products people use each day. The development of criteria for plastics under specific thickness would allow the optimum use of the material, creating savings for businesses and creating lesser impact to the environment.

3.1.10 Taiwan: Green Mark - Packaging Products Made from Recycled Paper

The Green Mark Standard for packaging products made from recycled paper³⁵ was created for products made from recycled paper that includes paper, paper bags, paper boards, corrugated boxes, paper pallets, and pulp molded pallets.

Applicability in the Philippines:

- Criteria for packaging made from recycled paper

Paper recycling has been done for a long time as stated in Treehugger. Paper recycling saves energy, conserves natural resources, reduces greenhouse gas (GHG) emissions, and minimizes waste in the landfill. Recycling a ton of paper has an equivalent savings of 17 trees, 380 gallons of oil, 3.3 cubic yards of landfill space, 7,000 gallons of water, and 4000 kilowatts of energy³⁶. While recycling paper saves resources and energy, the material itself also has drawbacks such as the breaking down of paper fiber every time it is recycled, thus creating a paper that is weaker compared to the ones produced using virgin fibers, and possible contamination from its after-use operations. Considering the properties and limitations of paper, especially when it is recycled, the development of criteria for

³⁴ British Plastics Federation. (2021). Why do we need plastic packaging?. Retrieved from <https://www.bpf.co.uk/packaging/why-do-we-need-plastic-packaging.aspx>

³⁵ Green Mark. Retrieved from <https://greenliving.epa.gov.tw/greenlife/uploadfiles/Criteria/5/2e65f55e-b4ab-40d4-9660-671d3af3803a.pdf>

³⁶ Treehugger. (2020 December 23). What Are the Benefits of Paper Recycling?. Retrieved from <https://www.treehugger.com/the-benefits-of-paper-recycling-1204139>

packaging made of recycled paper can assure its integrity as a packaging material.

3.1.11 Korea: Korean Eco-label Packaging Materials

The packaging materials criteria of the Korea Ecolabel³⁷ specifies methods for the primary and secondary packaging of items, mainly based on paper, cardboard, pulp, or synthetic resin.



Applicability in the Philippines:

- Criteria for packaging materials mainly based on paper, cardboard, pulp or synthetic resin specifically for primary and secondary applications

Nowadays, most companies are aiming to make their packaging green or eco-friendly. One of the benefits of using eco-friendly packaging is the fact that it is good for the environment, meaning, it is more sustainable, and it is producing better results as stated in Green Business Bureau. As the reproduction of traditional packaging materials such as plastic, paper, and cardboard are considered energy-intensive, the use of green packaging employs environmentally sensitive methods making it a better material option and the addition of a certification would give it a better position in the market³⁸.

3.1.12 Philippines: GCP Polyethylene and Polypropylene Packaging Materials

This NELP-GCP³⁹ criteria was established to be applicable for non-rigid, rigid, and semi-rigid polyethylene (PE) and polypropylene (PP) packaging used as primary, secondary, and tertiary packaging. The criteria includes having 100 percent recyclability and considers the international Plastic Coding System. The figure is the Green Choice Seal⁴⁰



³⁷ Korea Eco-Label. Retrieved from <https://index.impacter.com/korea-eco-label/>

³⁸ Green Business Bureau. (2021 February 1). Sustainable Packaging: Biodegradable and Eco friendly Options For Four Business. Retrieved from <https://greenbusinessbureau.com/green-practices/products/packaging/sustainable-packaging-biodegradable-and-eco-friendly-options-for-your-business/>

³⁹ Green Choice Philippines. Retrieved from <https://pcepsdi.org.ph/programme/green-choice-philippines/>

⁴⁰ Photo retrieved from <https://globalecolabelling.net/assets/Logos/green-choice-philippines2.jpg>

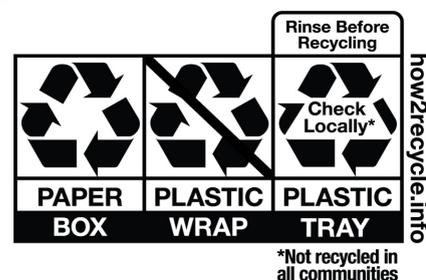
that is being awarded to the products that meet the set criteria by NELP-GCP.

Plastics, specifically PE and PP, are two of the most versatile and cost-effective materials for a wide range of applications. Many conventional materials, particularly in packaging applications, are being replaced by these plastics. Article 4 of Section 27 of the Philippine Ecological Solid Waste Management Act of 2000 (RA 9003) mandates the Department of Trade and Industry (DTI) to establish and implement a coding system for packaging materials and goods to allow waste recycling and reuse. The government shall provide guidelines as aligned to this law which the packaging industry may follow to have a greener operation. To support this, a labeling scheme becomes essential for successful plastic recovery and recycling, guaranteeing that plastic containers and packaging materials can be identified and collected, sorted, and recycled correctly. This also ensures the validity of the claims of these products. With the available criteria for PE and PP, the plastic industry may apply to communicate that their products are environmentally-preferable compared to others.

C. Other Ecolabels

3.1.13 North America: How2Recycle

How2Recycle is a standardized labeling system that communicates recycling instructions to the general public in a straightforward and concise manner⁴¹. It involves a partnership of forward-thinking firms that wish to recycle their packaging, and empowers customers through smart packaging labels. Recycling is difficult due to a variety of recycling systems, imprecise labeling, and false recyclability promises. The How2Recycle label is intended to assist consumers in North America with standardized and visible on-package recycling information. The figure is an example of a Multi-Component Labels⁴².



⁴¹ GreenBlue. (2021). How2Recycle. Retrieved from <https://how2recycle.info/>

⁴² Photo retrieved from <https://how2recycle.info/assets/uploads/content/PaperBoxPlasticWrapPlasticTray.jpg>

Applicability in the Philippines:

- Application of universal on-package recycling information throughout the country
- Promotion of recycling using proper package labelling

According to the Federal Trade Commission's Guides for the Use of Environmental Marketing Claims (Green Guides), a package cannot be called recyclable unless the majority of the consumers can recycle it⁴³. There are risks connected with false claims, and there are also benefits from accurate recycling and composting claims. It can assist in recovering products and packages which will then contribute to the circular economy. With the difficulties related to recycling products in the Philippines, implementing universal on-package recycling information backed by consumer education and recycling programs can greatly improve recycling in the country.

3.1.14 United Kingdom: On-Pack Recycling Label

The On-Pack Recycling Label⁴⁴ is a UK-Wide simple and consistent recycling message for use of the retailer and brand packaging that help consumers reuse and recycle materials correctly. This label gives clear information for every packaging component. The recycling label adopted an ISO 14021 compliant approach and is taking into account the entire recycling process from the in-store collection until sorting at the materials recovery facilities (MRFs).



Two labels are used for this namely 'Recycle' and 'Don't Recycle'. About 75 percent of packaging with 'Recycle' labels are being collected by the UK local authorities and are then efficiently sorted, processed or sold as recyclate to be used as new packaging or products. Fewer than 50 percent of packaging with 'Don't Recycle' label are being collected by the UK local authorities and are not efficiently sorted, processed, or sold as recyclate as new packaging products.

⁴³ Edington, J. (2018 August 13). The importance of accurate end-of-life labeling. Retrieved from <https://www.packagingdigest.com/sustainability/importance-accurate-end-life-labeling>

⁴⁴ The On-Pack Recycling Label. Retrieved from <https://www.oprl.org.uk/>



Applicability in the Philippines:

- Use of a simple and well-understood recycling label

As stated in the Adobo Magazine, a bold 'Recycle Me' message on Coca-Cola's packaging all over its brands and products in the ASEAN is being rolled out for the consumers to remember to recycle the bottles after enjoying the drink⁴⁵. The initiative is a holistic approach of Coca-Cola across Southeast Asia as a response to the issue of packaging waste. Consumer engagement on the value of packaging collection and recycling is a major part of Coca-Cola's vision in creating a 'World Without Waste'. Simple recycling labels from organizations or from the companies producing products can greatly influence the consumers to become more responsible and can aid the government in its sustainable programs.

3.1.15 Philippines: The Plastic Pollution Reduction Standard

The Plastic Pollution Reduction Standard is a guide for achieving plastic neutrality used as a basis for the recognition of Plastic Neutral Certifications granted by Plastic Credit Exchange (PCEX)⁴⁶.



The standard lays out a framework for putting in place a reliable and verifiable plastic offsetting and plastic crediting scheme. PCEX provides a system for physically collecting, treating, and processing plastic trash through its network of aggregators and processors, effectively removing it from the environment. PCEX converts the weight of plastic offsets into equivalent plastic credits using a thoroughly

⁴⁵ Adobo Magazine (2021 August 3). Brand & Business: Coca-Cola rolls out a "Recycle Me" message on its package labels across ASEAN to encourage consumers to help recycle. Retrieved from <https://adobomagazine.com/sustainability/brand-business-coca-cola-rolls-out-recycle-me-message-on-its-package-labels-across-asean-to-encourage-consumers-to-help-recycle/>

⁴⁶ Plastic Credit Exchange. (2020). Plastic Pollution Reduction Standard. Retrieved from <https://www.plasticcreditexchange.com/certification>

audited procedure. Plastic credits can be purchased by anyone, an individual or company, as a way to take responsibility for accomplishing their sustainability goals.

To define, plastics credits are credits that businesses can purchase to offset their plastic usage⁴⁷. For example, a plastic credit organization can collect a ton of rubbish plastic and exchange it for a set number of plastic credits that can be applied to a company's plastic footprint. It is seen as one of possible solutions for businesses to offset the waste produced by their products whose plastic footprints cannot be reduced any longer. The money raised from a corporation's purchase of plastic credits can subsequently be used to fund more clean-up initiatives and other sustainability projects.

SUMMARY:

The gathered standards and ecolabels from different countries showed similarities and differences, and their details can be found in **Annex 1**.

The common inclusions are:

- Specifying requirements for product reuse
- Requiring on-label markings for recycling and collection

The specific inclusions are:

- Specifying utilization criteria
- Specifying sorting criteria
- Specifying material requirements
- Optimizing the use of material
- Specifying criteria for materials with recycled content
- Specifying requirements for the system provider
- Use of plastic offsetting
- Specifying criteria for materials suitable for organic recycling
- Specifying criteria for material recycling

⁴⁷ Gonzalez, G. (2021 June 15). PH plastic credit non-profit utilizes Microsoft-made blockchain registry. Retrieved from <https://www.rappler.com/technology/plastic-credit-exchange-microsoft-blockchain-registry>

3.2 International and Local Policies

The number of policies on packaging continues to increase as governments see the need to regulate packaging products especially in addressing marine litter. Being one of the major contributors of marine debris, packaging should have corresponding guidelines such as for waste management or waste recovery, that can be followed by both private and public sectors in order to stop them from reaching water bodies. The study compiles policies from different countries to provide information on how these countries address marine litter and implement their policies on packaging. The gathered information is also analyzed and compared based on their applicability to the Philippine setting. Relevant information from these policies are presented in **Annex 2**.

3.2.1 European Union: Directive 94/62/EC on packaging and packaging waste

This Directive aims to harmonize national measures related to managing packaging and packaging waste, and to improve the quality of the environment through the prevention and reduction of packaging and packaging waste. The Directive is designed to prevent packaging waste generation and promote the reuse, recycling, and other forms of packaging waste recovery other than disposal to contribute to the transition to a circular economy.

Applicability in the Philippines:

- Essential requirements for packaging placed in the market
- Packaging recovery systems
- Establishment of producer responsibility schemes
- Information systems and reporting

An intensive beach clean-up program throughout sections of a small sample of local beaches was conducted in the Philippines⁴⁸. The program's goal is to determine the kinds of materials most common in beaches to design local initiatives addressing the issues. The majority of the materials observed scattered across the beaches in the Philippines was plastic, with a large portion of that being soft plastics that cannot be recycled such as plastic bags, sweet and crisp packets, and single-use soap and detergent sachets. However, there were significant differences, wherein at one

⁴⁸ Slack, A. (2018 March 2). Packet loss: litter and packaging in the Philippines. Retrieved from <https://www.isonomia.co.uk/packet-loss-litter-and-packaging-in-the-philippines/>

beach, an incredible amount of expanded polystyrene was scooped. With the massive amount of litter collected during clean-up drives, implementing a variety of measures to reduce the environmental impact of certain materials can greatly benefit the country. Directive 94/62/EC may be used as a guide to strengthening coastal clean-ups and other recovery systems in the Philippines.

3.2.2 European Union: Directive 2019/904 on the reduction of the impact of certain plastic products on the environment (Single-use plastics ban)

This Directive's⁴⁹ goal is to prevent and reduce the environmental impact of certain plastic products, as well as to promote the transition to a circular economy, by implementing a variety of measures tailored to the products covered by the Directive, such as an EU-wide ban on single-use plastic products when alternatives are available. The Directive implements the EU's plastic policy, which is an essential part of the EU's transition to a circular economy.

Applicability in the Philippines:

- Market restrictions (bans)
- Consumption reductions
- Separate collection and design requirements for plastic bottles
- Compulsory marking
- EPR
- Awareness raising

According to the Philippine News Agency, Commissioner Rachel Anne Herrera of the Climate Change Commission (CCC) sees the need to harmonize guidelines for banning single-use plastics (SUPs) across the country in order to better manage pollution caused by these disposables⁵⁰. She mentioned that 489 cities, municipalities, and provinces around the country have already enacted SUP-related legislation. Such ordinances may encompass a variety of SUPs, so what is prohibited in one location may not be prohibited in another. This makes it difficult to handle pollution, especially when SUPs may end up in waterways that travel between local government units (LGU), potentially conveying prohibited materials.

⁴⁹ Official Journal of the European Union. (2019 July 12). *Directive 2019/904*. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0904>

⁵⁰ Philippine News Agency. (2021, March 15). *Banning single-use plastics to solve PH pollution problem*. Retrieved from <https://www.pna.gov.ph/articles/1133624>

3.2.3 Chile: Chao Bolsas Plásticas/ Prohibit The Delivery of Plastic Commerce Bags in the Whole National Territory

This Bill⁵¹ seeks to ban the delivery of plastic bags in commerce throughout Chile and is complementary to the implementation process of the EPR law. It considers the decree that will set collection and recovery goals for containers and packaging, and will take charge of other materials (not just plastics) that are commonly used by citizens, but mostly not valued.

Applicability in the Philippines:

- Prohibition of the use of plastic bags in commerce
- Plastics used for hygienic purposes, for avoiding food waste, and for direct food contact is allowed
- Promotion of Bring Your Own Bag

GAIA stated that cities and towns, businesses, and the general public in the Philippines have all recognized the detrimental consequences of over-reliance on plastic bags and are now more accepting of initiatives to regulate their use⁵². At least 20 cities and provinces in the Philippines currently have some kind of policy governing the usage of plastic bags. Furthermore, many businesses around the country are allowing or offering non-plastic alternatives such as customer-owned reusable bags, discarded carton boxes, or paper bags. Plastic bag laws currently in place range from plastic bag levies to outright bans.

GAIA also mentioned that policies on banning certain plastic types had been around for quite some time, but its successful implementation is always an issue in the Philippines. It is mostly identified that strict and continuous implementation of law backed by campaigns and participation of private sectors and consumers are the prerequisites for the success of the policy.

3.2.4 Japan: Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging

The Act establishes a recycling framework and mechanisms to promote waste reduction, primarily for EPR-eligible items⁵³. The Act is

⁵¹ Government of Chile. Law No. 21100: Prohibit The Delivery of Plastic Commerce bags in the Whole National Territory. Retrieved from <https://www.bcn.cl/leychile/navegar/imprimir?idNorma=1121380&idVersion=2019-02-03>

⁵² GAIA. (n.d.). Plastic Bag Bans in the Philippines. Retrieved from <https://www.no-burn.org/bagbanph/>

⁵³ Yamakawa, H. (n.d.). The Packaging Recycling Act: The Application of EPR to Packaging Policies in Japan. Retrieved from

enacted due to the increasing volume of municipal solid waste (MSW) and expanding waste-related issues, such as the limited space in MSW dump sites. The Act recognizes and specifies the role of each stakeholder involved in the system. Each stakeholder's basic responsibilities are as follows: (1) customers for source sorting, (2) municipalities for sorted collection, and (3) producers for recycling. In their positions, each stakeholder bears both physical and financial responsibilities. The Japanese government is expected to make educational and public awareness efforts to increase public knowledge on waste management. The act requires designated producers to recycle a certain quantity of properly sorted packaging waste using specific parameters.

Applicability in the Philippines:

- Consumers are responsible for source sorting; municipalities are responsible for sorted collection; designated producers are responsible for recycling packaging which meets specific sorting criteria from municipalities; and the national government is responsible for public awareness through education and publicity activities
- Setting of specific target quantity of packaging that must be recycled
- Inclusion of specific methods for recycling

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 project⁵⁴. EPR is a key and effective policy instrument in making manufacturers accountable for the end-of-life implications of their plastic products and packaging, according to this paper co-authored by cyclos GmbH and AMH Philippines Inc.

EPR as a policy tool also promotes the business sector to adopt holistic eco-design. It proposes an obligatory EPR plan for all product packaging, with a three-year transition period for enterprises that are required to rethink their packaging and remove unneeded plastics. The report emphasizes that in order 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

https://www.oecd.org/environment/waste/EPR_Japan_packagingFinal%20corrected0502.pdf

⁵⁴ WWF Philippines. (2020). No Plastics in Nature. Retrieved from <https://wwf.org.ph/what-we-do/plastics/epr-launch/>

monitoring and control systems. As the implementation of EPR is seen as necessary to the country, it will be helpful if courses of action such as recognizing roles of different stakeholders, setting specific targets for recycling, and specifying the methods of recycling for several packaging types will be observed. This law implemented in Japan can be used by the Philippine Government as a basis in creating a nationwide recycling law giving each stakeholder an important role to play.



Snapshot from a recycling facility in Quezon City, taken in February 2020⁵⁵

3.2.5 Japan: The Basic Act for Establishing a Sound Material-Cycle Society

The Act⁵⁶ promotes comprehensive and systematic policies for the establishment of a sound material-cycle society to ensure healthy and cultured living for both present and future generations in Japan. It emphasizes the roles of the state, local governments, businesses, and individuals, as well as outlines key issues for developing policies for the construction of the said society. To define, a sound material-cycle society is a society where natural resources are conserved and the environmental burden is reduced to the greatest extent possible.

Applicability in the Philippines:

- Sharing of roles among the state, local governments, business operators, and citizens
- What can be reused must be reused; what cannot be reused must be reclaimed; what cannot be reclaimed must undergo recovery
- Increase of product durability
- Minimization of difficulties involved in the disposal of the products

- Improvement of container design and indicating their components
- The government to submit annually cyclical use and disposal of resources, and the policies implemented towards the establishment of a sound material-cycle society
- Construction of public facilities for cyclical use, disposal, collection, or transport of circulative resources

According to Meiji University Center for Polymer Science, emphasizing reduce, reuse, and recycle (3R), as well as proper waste processing are two crucial elements in establishing a sound material-cycle society⁵⁷. The Act established the following priorities for waste processing: (1) reduction, (2) reuse, (3) material and chemical recycling, (4) energy recovery, and (5) burn or dump. It necessitates adequate management and total evaluation using life cycle assessment (LCA), which includes minimal carbon dioxide discharge energy and efficient water use. With the depleting availability of natural resources used for packaging and the increasing demand by the consumers especially that the Philippines is in a sachet economy and has an increasing population, adopting this policy would be very beneficial to sustain the needs of the nation while conserving its environment.

3.2.6 Singapore: Resource Sustainability Act 2019

This Act⁵⁸ imposes the collection and treatment obligations for electrical and electronic waste and food waste, to compel reporting of packaging imported into or used in Singapore. It seeks to govern individuals operating producer responsibility schemes, and promote resource sustainability.

Applicability in the Philippines:

- Annual turnover of the quantity of the specified packaging used
- Submission of plan to reuse, reduce, or recycle packaging
- No operation unless authorized through licenses
- Producer's responsibility is mandatory to the agency
- Revocation of license if any information is false or misleading

Packaging waste and throwaway culture are frequently cited as significant sources of

⁵⁵ Photo retrieved from <https://www.f.org.ph/what-we-do/plastics/epr-launch/>
⁵⁶ The Basic Act for Establishing a Sound Material-Cycle Society. Retrieved from <https://www.env.go.jp/en/laws/recycle/12.pdf>

⁵⁷ Meiji University Center for Polymer Science. (2020). *Plastic and Sound Material-Cycle Society*. Retrieved from <http://www.isc.meiji.ac.jp/~polymer/english/topics/topic3.html>
⁵⁸ Republic of Singapore. (2019 October 4). *Resource Sustainability Act*. Retrieved from https://sso.agc.gov.sg/Acts-Supp/29-2019/Published/20191004?DocDate=20191004&ViewType=Pdf&_=20201127212455

pollution, especially as public awareness of the environment grows and a movement toward sustainable living emerges⁵⁹. With this in mind, businesses are looking into ways to reduce packaging's carbon footprint and turn it into a tool for sustainability. The Resource Sustainability Act of Singapore may be considered by the Philippine Government especially in terms of imposing great responsibility for producers in their operations' impacts.

3.2.7 South Korea: Act on the Promotion of Savings and Recycling of Resources

The Act contributes to the preservation of the environment, and the sound development of the national economy by means of encouraging the use of recycled resources, controlling generation of wastes, and facilitating recycling. For the effective implementation of the Act, it specifies the duties of (1) manufacturer, processor, importer, consumer of materials, products, etc. to control the generation of waste to their maximum capacity and mitigate any possible occurrence of harm; (2) the state to create policies to facilitate the recycling of resources; (3) the local government to be in charge of the implementation of the of policies and the facilitation of recycling while considering the condition of their areas of jurisdiction; (4) the people to facilitate the recycling of resources by discharging recyclable resources after separation, by prioritizing the purchase of recycled products, by preventing them from using disposable products, and by cooperating with the state.

Applicability in the Philippines:

- Passing into law Senate Bill 2425 also known as the "Extended Producers Responsibility Act"; and House Bill 9147 also known as the "Single-Use Plastic Products Regulation Act"
- Establishment and implementation of municipal and barangay solid waste management plan
- Establishment of local recycling facilities
- Collaboration among manufacturers and producers, government and junk shop owners in collection and recovery of recyclable wastes
- Putting into practice waste segregation-at-source

⁵⁹ Philippine Daily Inquirer. (2019 January 18). *Local packaging industry pushes for sustainability*. Retrieved from <https://business.inquirer.net/263728/goings-on-local-packaging-industry-pushes-for-sustainability>

Samsung Electronics Philippines⁶⁰ is engaged in efforts to focus on a circular economy to protect the environment in crisis and to use resources more efficiently. The company is ensuring that resources can be reused through recovering, reusing, and recycling after the lifespan of the product. Resources are limited through minimization of the material types used and optimization of the assembly method. Valuable materials are recovered through the collection of products that reached their end life. Through the use of the circular economy concept, Samsung has lowered the amount of resources required for its production, and has reduced GHG emissions and pollutants from waste incineration, and prevented soil and underground contamination of water through landfills. The implementation of a circular economy by big companies like Samsung can be a benchmark for other companies to engage in a circular economy realizing its benefit not just to the company itself, but to the environment as well.

3.2.8 Taiwan: Waste Disposal Act

The Act⁶¹ is formulated to promote effective clearance and disposal of waste, environmental sanitation, and maintenance improvement of public health in Taiwan. Under the act, (1) an enforcement authority must establish units dedicated in performing recycling, clearance, disposal, determining cost and collection fees, and waste investigation work, and, they must be responsible for the planning of land to be used for the mentioned activities; (2) for the articles, packaging, and containers that will produce general waste possessing characteristics that might pose serious concerns to the environment, its manufacturers and importers must be responsible for its recycling, clearance, and disposal; (3) the designated responsible enterprise must mark the articles or the packaging and containers with relevant recycling labels; and (4) the designated vendors of the articles or the packaging and containers must install resource recycling facilities and must have recycling works.

Applicability in the Philippines:

- Establishment of dedicated units by an enforcement authority to perform operations related to general waste
- Practice of EPR
- Designated enterprise marks packaging with relevant recycling label

⁶⁰ Samsung Electronics Philippines. *Resource Efficiency. Conserve, use longer, and reuse*. Retrieved from <https://www.samsung.com/ph/sustainability/environment/resource-efficiency/>

⁶¹ Waste Disposal Act. Retrieved from https://digital.library.unt.edu/ark:/67531/metadc25994/m2/1/high_res_d/Waste%20Disposal%20Act.pdf

- Competent authority shall dispatch personnel or commission professionals to enter enterprise premises for regular monitoring

According to a 2018 assessment on waste management methods among the Southeast Asian countries, the Philippines has one of the highest garbage collection rates, but most of this trash is not properly disposed of⁶². The limited number of recycling facilities in the country is owing to a lack of room to build them in populated locations. An MRF, which is a specialized operation that segregates materials for recycling and prepares them for marketing to end-user manufacturers, is also required by the local waste management system. Moreover, cities also face a financing shortage for recycling infrastructure, despite the government's desire for cluster sanitary landfills, in which local governments pool financial resources to build sanitary landfills. Although the Philippines only has five recycling firms, according to data gathered by Eco-Business, solid waste generation has progressively increased from 37,427 tonnes per day in 2012 to 40,087 tonnes in 2016. There is a need to invest in and strengthen the implementation of solid waste management in the country to limit the negative impacts to human health and the environment.

3.2.9 China: Marine Pollution Control Act

This Act⁶³ was established to control marine pollution, to protect marine environment, to maintain ecology, to safeguard public health, and to sustainably use marine resources of the Republic of China. Under the Act, the central competent authority (Environmental Protection Administration) considers marine conditions in determining marine environment categories and marine environment quality standards. The competent authority is responsible for the approval of use of the sea as the final disposal site of certain waste and the establishment of the collection of fees related to it. Marine dumping fees based on the category and quantity of the substance being dumped are collected upon the approval of the said authority.

Applicability in the Philippines:

- Specifying an agency in charge of strictly controlling and monitoring the disposal of litter into the marine water

⁶² Eco-Business (n.d.). *Why plastic-clogged Philippines must face up to dearth of waste disposal and recycling*. Retrieved from <https://www.eco-business.com/news/why-plastic-clogged-philippines-must-face-up-to-dearth-of-waste-disposal-and-recycling/>

⁶³ Ocean Affairs Council. (2014 June 4). *Marine Pollution Control Act*. Retrieved from <https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=O0040026>

As stated in Urban Links, the waste management-related national laws, especially the RA 9003 have been in place for years, but the implementation falls on the hand of the LGUs. The lack of financial resources, the limited enforcement capacity, and the low public awareness of people and environmental value of plastic pose challenges to the LGUs. Having an agency that is dedicated to working on issues related to controlling and monitoring the dumping of waste into the ocean would greatly benefit the country. It can minimize the country's contribution to marine litter resulting in better quality of marine ecosystems⁶⁴.

3.2.10 Philippines: Ordinances related to packaging in the Philippines

Managing waste remains a big challenge for many countries. Philippines' cities and municipalities are likewise in a struggle to address this crisis. As LGUs have the primary responsibility in the implementation and enforcement of RA 9003⁶⁵ within their respective jurisdictions; policymakers passed and enacted ordinances to promulgate objectives of the law. Some of the notable legislations are as follows:

A. Bacolod City Ordinance 562-2011⁶⁶

This ordinance prohibits the distribution of plastic straws and stirrers in the City of Bacolod, and regulates the use, sale, and provision of plastic bags as packing material in Bacolod City.

B. Boracay Municipal Ordinance No. 386, S-2018⁶⁷

This ordinance bans the use of single-use plastics such as toothbrushes, toothpaste containers, sachets, and bottled water in all accommodation establishments including hotels, resorts, and restaurants.

C. El Nido Ordinance No. 004, S-2013⁶⁸

This ordinance is established for the regulation of the use of cellophane, plastic bags, and expanded polystyrene as containers for products. It encourages

⁶⁴ Urban Links. (2020 July 21). *Turning the Tide on Ocean Plastic Pollution in the Philippines*. Retrieved from <https://urban-links.org/insight/turning-the-tide-on-ocean-plastic-pollution-in-the-philippines/>

⁶⁵ Official Gazette of the Republic of the Philippines. (2001). *Section 10: Role of LGUs in Solid Waste Management*. Retrieved from <https://www.officialgazette.gov.ph/2001/01/26/republic-act-no-9003>

⁶⁶ Bacolod City Government. *Ordinances and Resolutions*. Retrieved from <https://www.sunstar.com.ph/article/1778046/Bacolod/Local-News/Bacolod-council-amends-plastic-bag-regulation-ordinance>

⁶⁷ Berto. (4 September 2019). *Single-Use Plastics Now Banned In Boracay*. Retrieved from <https://thephilippinestoday.com/>

⁶⁸ Capacillo, J. (2018 Aug 30). *El Nido Bans Bringing Plastics on Boat Tours*. Retrieved from <https://www.spot.ph/newsfeatures/the-latest-news-features/74947/el-nido-plastic-ban-a00258-20180830>

the use of other materials that would not contribute to plastic wastes such as woven bags and reusable water bottles. In addition, it requires all business establishments to have educational materials to help disseminate knowledge regarding the ordinance.

D. Iloilo City Regulation Ordinance No. 2013-403⁶⁹

This "Non-Biodegradable Plastic Shopping Bag Regulation Ordinance of Iloilo City" states that the use of non-biodegradable plastic shopping bags used for wrapping and packaging must be controlled in the establishments in the city.

E. Makati City Ordinance No. 2003-095⁷⁰

This ordinance is called the "Solid Waste Management Code of the City of Makati". It demands establishments such as restaurants and supermarkets to use materials that are environment-friendly.

F. Muntinlupa City Ordinance No. 10-109⁷¹

This ordinance prohibits the use of plastic bags for dry goods and products while controlling its usage for wet goods and products. In addition, it totally bans the usage of any expanded polystyrene materials.

G. Quezon City Ordinance No. SP-2876, S-2019⁷²

This ordinance prohibits the distribution and/or use of single-use plastics/disposable materials including cutlery for dine-in purposes in all hotels and restaurants in Quezon City.

H. San Fernando, La Union City Ordinance No. 2014-03⁷³

This ordinance penalizes anyone who uses extra plastic when bagging wet goods. In addition, it prohibits the selling and use of plastic bags for dry goods; plastic straws; and plastic or Expanded Polystyrene plates, cups, and utensils (except for takeout items).

A commonality in these ordinances is their objective to regulate the use of unnecessary packaging and reduce the amount of unmanaged waste in their localities. Heightening the implementation of such ordinances can be a key to greatly contributing

to the reduction of marine litter in the country. Moreover, House Bill No. 9147 or the Bill to pass an Act regulating the production, importation, sale, distribution, provision, use, recovery, collection, recycling, and disposal of single-use plastic products is currently under a series of reviews. This Bill mandates both the public and private sector to act on eliminating unnecessary plastic products, including packaging, and invest in EPR. Through the Bill, these materials will be gradually banned with the goal to avoid them leaking to the environment.

SUMMARY:

To summarize, the gathered policies from different countries showed common trends especially on priorities for waste management and sustainable packaging, highlighting both recycling and waste recovery. **Annex 2** includes the scope and purpose of these policies.

The common inclusions in the policies are:

- Promotion or implementation of EPR
- Sharing of roles among the consumers, manufacturers/producers, local governments, and the state
- Prohibition of the use of certain packaging materials like single-use plastics
- Annual reporting of projects or proposals of plans related to sustainability
- Mandatory labelling requirements for certain packaging materials
- Allowing only the use of packaging materials that meet the country requirements and criteria
- Promotion and construction of public facilities for disposal and collection
- Putting up collection points on certain retail stores
- Awareness-raising campaigns
- Use of classification of packaging materials for collection

Specific inclusions on the policies of some countries are:

- Incorporation of methods of recycling on the label
- Requirement to "bring own bags" for consumers
- Minimization of the difficulties involved in product disposal
- Specifying agency in-charge of strictly controlling and monitoring the disposal of liters into the Marine Water
- Specification of target quantity of materials to be recycled based on certain parameters
- Incentivising
- Consideration of reuse, reclamation and recovery options for packaging wastes

⁶⁹ *Iloilo City Regulation Ordinance 2013-403*. Retrieved from <https://www.scribd.com/Iloilo-City-Regulation-Ordinance-2013-403>

⁷⁰ *IBP Makati Continuing Legal Education Ordinances*. Retrieved from <https://ibpmakatillegaleducation.wordpress.com/>

⁷¹ *Muntinlupa City Ordinance 10-109*. Retrieved from Muntinlupa City Ordinance 10-109 | Economic Sectors | Economics

⁷² *Ordinance. SP-2876, S-2019*. Retrieved from Quezon City Government Official Website

⁷³ De La Cruz, C.I. (2018 March 23). *Plastic-Free Wet Market? La Union Shows Us How It's Done*. Retrieved from <https://www.spot.ph/newsfeatures/sustainable-palengke-plastic-free-la-union>

3.3 International and Local Best Practices

Government, society, and business sectors, among others, have been working together in addressing the waste crisis. Countries around the world showcase various programmes, projects, and initiatives in the promotion of sustainable packaging that have been shared and replicated with the main purpose of doing as little harm to the environment as possible. Some notable practices are taken into consideration in this study, considering its adaptability in the Philippines, as tabulated in **Annex 3**. The following are significant practices applicable and/or are implemented in the Philippines.

3.3.1 Germany: 5-point plan to reduce plastic waste

A “No to the Throwaway Society” 5-point plan to reduce plastic waste in Germany includes using recycled and environmentally friendly products, as well as reduction of plastic in the packaging of products⁷⁴. This calls for both local and international commitments to reduce marine litter and patronization of more sustainable alternatives. The German Environment Ministry advocates the 5-point plan as summarized:

- **Avoiding unnecessary products and packaging:** Consumers will be encouraged to shift to biodegradable and other more sustainable packaging options.
- **Making packaging and other products more environmentally friendly:** Companies will be influenced through establishment of new licensing rules, putting higher costs to less sustainable packaging options.
- **More recycling, more recycling stations:** The government will be directed to invest in recycling with targets from 36 percent of total waste to 63 percent by 2022.
- **Preventing plastics from getting into organic waste:** People will be pushed to practice proper waste segregation.
- **International efforts to limit plastic waste at sea:** International commitments will be advocated, with hopes to clean up the 10 rivers that are recognized to account for 90 percent of the plastic waste in the world's seas.

⁷⁴ Deutsche Welle. (2018 November 26). *Germany unveils 5-point plan to reduce plastic waste*. Retrieved from <https://www.dw.com/en/germany-unveils-5-point-plan-to-reduce-plastic-waste/a-46455503>

Applicability in the Philippines:

- Avoidance of unnecessary packaging
- Identifying responsibility for consumers, companies, and the government
- Development of appropriate licensing rules, incurring higher fees for less environmentally friendly packaging products
- Proper handling of waste segregation from household level to waste facilities
- Advocacy for both local and international commitments for clean-ups and other environmental initiatives

In the advent of COVID-19 pandemic, eCommerce has been kicking in as almost everyone depends on online services. Unfortunately, the expanding eCommerce industry is one of the biggest culprits of plastic packaging waste due not only to its usage, but also to the unfortunate reality of ‘over-packaging.’ Environmental groups had been calling on large eCommerce businesses such as Lazada and Shopee to reduce their plastic packaging as part of their efforts to help save the environment. Companies like Garnier Philippines are committed to greener beauty by striving for 100 percent renewable ingredients sourced sustainably by 2022; targeting its products to be made out of 100 percent recycled plastic that is also 100 percent recyclable, refillable, or reusable (Garnier, 2019)⁷⁵. Lush Fresh Handmade Cosmetics leads the cosmetics industry to fight over-packaging by running public awareness campaigns, and developing products that can be sold ‘naked’ to the consumer without any packaging⁷⁶. EcoWaste Coalition, in preventing and reducing waste generation, presented the following recommendations to online shopping companies⁷⁷:

- Make public their plastic footprint (i.e., types and quantities of plastic packaging materials used annually);
- Adopt a plastic packaging waste prevention and reduction policy, including plastic-free packaging choice at checkout, returning used packages with reverse logistics and other schemes, and incentives for reduced packaging;

⁷⁵ Garnier. (2019). *Garnier commits to Greener Beauty*. Retrieved from <https://www.garnier.com.ph/green-beauty>

⁷⁶ Lush Philippines. (2021). *The Naked Truth: Packaging-Free Cosmetics*. Retrieved from <https://lush.com.ph/blogs/blog/the-naked-truth-packaging-free-cosmetics>

⁷⁷ Ecowaste Coalition. (2020 November 11). *Over 150 Groups Tell Lazada and Shopee: Reduce Plastic Use and Packaging Waste*. Retrieved from <https://ecowastecoalition.blogspot.com/>

- Transition to ecological and safe options for delivering goods, including appropriate product packaging, to reduce disposable and unnecessary plastic and packaging waste;
- Implement time-targeted and measurable phase-out plans for plastic packaging materials;
- Communicate such phase-out plans to manufacturers, wholesalers, retailers, and consumers;
- Create a merchants' section for those who sustainably package their products.



Volunteer conducts house to house EIC campaign on Waste Segregation at Barangay Apo Island, Dauin, Negros Oriental⁷⁸

On the other hand, the Sustainable Palengke campaign in San Fernando, La Union, resulted in the implementation of City Ordinance No. 2014-03, which penalizes anyone who uses extra plastic when bagging wet goods in public markets⁷⁹. Moreover, aspiring to protect the world-renowned Apo Island Protected Landscape and Seascape in Dauin, Negros Oriental, Barangay Apo Island partnered with the environmental group in implementing RA 9003, through the conduct of waste assessment and brand audits, house-to-house Information, Education and Communication (IEC) on proper waste segregation at source, and building decentralized MRFs⁸⁰.

In 2018, Iloilo City received the Galing Pook Award for its Iloilo Batiano River Development Project⁸¹. The river clean-up, worthy of replication by other LGUs, showcases a joint

collaboration among national agencies, non-government organizations, academe, and civil society to address siltation, water pollution, encroachment, illegal cutting of mangroves, and informal settlements along the Iloilo River. To continually raise environmental awareness, Iloilo Province launched “*Limpyo Iloilo*”⁸², a province-wide convergence clean-up drive, every third Saturday of the month, which aims to achieve a clean Iloilo for health, tourism, and progress and promote the culture and character of cleanliness and spirit of volunteerism among Ilonggos. *Limpyo Iloilo* also seeks to harmonize and strengthen local and national clean-up initiatives; employ solid waste reduction and management; and introduce strategies to reduce littering, throwing, and illegal dumping of wastes along roads, plazas, waterways, and other public places.

Similar initiative is done by SM Supermalls, as part of its commitment to promote care for the environment. The company conducts a quarterly Regular Bay Clean-up at the bay area of SM Mall of Asia participated by mall employees, tenants, security, and janitorial personnel. Likewise, SM By the Bay has been the regular partner and venue of the annual International Coastal Clean-Up Celebration. In 2019, many volunteers composed of students, employees, tenants, community partners, and government partners took part in the coastal clean-up with more than 34 tons of solid waste collected from the clean-up drive⁸³.

These advocacies and initiatives, if replicated all throughout the country, may help in waste reduction, better waste collection, and waste management in the Philippines.

3.3.2 Wales: Collections Blueprint-Newport flats communal recycling facilities

Newport City Council provides communal recycling facilities to tenants in order to provide a comprehensive recycling service to flats. Residents are given five distinct wheeled bins for paper, plastic, glass, cans, and cardboard, encouraging the practice of proper segregation of waste⁸⁴.

⁷⁸ Apo Island: Information dissemination about Zero Waste. Retrieved from <https://www.facebook.com/WOWBreakFreeFromPlasticNegrosOr/photos/pcb.2718281471742125/2718280908408848/>

⁷⁹ De La Cruz, C.I. (2018 March 23). *Plastic-Free Wet Market? La Union Shows Us How It's Done*. Retrieved from San Fernando, La Union Launches Sustainable Palengke

⁸⁰ GAIA. (n.d.). *Winning the War-on-Waste*. Retrieved from https://www.no-burn.org/zerowastecitiesupdate_wow/

⁸¹ Lena, P. (2018 October 13). *Iloilo City bags the Galing Pook Award for cleaning Iloilo River*. Retrieved from <https://www.pna.gov.ph/articles/1050955>

⁸² PICA0 (2020 Jan 15). *Capitol to Launch 'Limpyo Iloilo'*. Retrieved from <https://iloilo.gov.ph/environment-health-and-sanitation/>

⁸³ Environment. *Program Highlights*. Retrieved from <https://www.smpriime.com/environment>

⁸⁴ Collections Blueprint. (n.d.). *Case Study: Newport flats communal recycling facilities*. Retrieved from <https://collectionsblueprint.wales/content/newport-flats-communal-recycling-facilities>

Applicability in the Philippines:

- Provision of properly labelled wheeled bins per establishments or residential areas
- LGU to intensify waste segregation
- Labelling of MRF

Waste segregation helps decongest dumpsites and landfills as it diverts large amounts of waste from the dumpsite. Section 17 (c) of RA 9003, states that segregation and collection of solid waste shall be conducted at the barangay level. For pending collection, there shall be a separate container for each type of waste properly marked as "compostable", "non-recyclable", "recyclable" or "special waste", or any other classification, as stated in Section 22 (b) of RA 9003. Barangays Bantayan, Looc, and Piapi in Dumaguete City, Negros Oriental, lead in the campaign to intensify the segregation at source to reduce trash generated from the households and business stores⁸⁵.



Household waste collections sacks at Barangay Apo Island, Municipality of Dauin, Negros Oriental⁸⁶

The Island of Siquijor, as it aims to be a zero-waste island in Negros Oriental, has also erected MRF in several barangays⁸⁷. While the Municipality of Isabela in Negros Occidental received a check worth PHP 1.2 Million for the construction of the town's MRF Residual Containment Area and rehabilitation of its Vermi-composting Shed⁸⁸. The MRF, dubbed as the heart of RA 9003, shall receive segregated waste for final sorting, segregation, composting, and recycling. The resulting residual wastes shall be transferred to a long-term storage or disposal facility or sanitary landfill. The system helps in diverting

⁸⁵ For Zero Waste Dumaguete! Retrieved from <https://dumaguete.gov.ph/>

⁸⁶ Apo Island: Information dissemination about Zero Waste. Retrieved from <https://www.facebook.com/WOWBreakFreeFromPlasticNegrosOr/photos/pcb.2718281471742125/2718281268408812>

⁸⁷ Malaysia Sun. (2020 July 14). *Siquijor continues to gear for #ZeroWaste amid COVID-19*. Retrieved from <https://www.malaysiasun.com/news/265768975/siquijor-continues-to-gear-for-zero-waste-amid-covid-19>

⁸⁸ PIO. (20 November 2020) *Gov turns over check*. Retrieved from <https://www.negros-occ.gov.ph/news/gov-turns-over-check>

compostable and recyclable wastes from dumpsites and landfill, thus lowering emission of gaseous pollutants. This practice can be adopted as it may contribute greatly to the improvement of waste management in the Philippines.

3.3.3 Nordic Region: Guidelines to increased collection of plastic packaging waste from households

The goal of these guidelines is to provide inspiration and recommendations on how to collect plastic packaging trash and how to consider many aspects of plastic packaging collecting. The guidelines are based on Nordic experience to promote knowledge transfer and show how plastic packaging waste is collected in the Nordic region⁸⁹.

Applicability in the Philippines:

- Public drop-off points

One good example locally is what Bonifacio Global City (BGC) is doing. BGC is committed to align with the LGU's objective of decreasing its residuals by 2022. Thus, a joint action was initiated by the City Government of Taguig and Barangay Fort Bonifacio to lessen their residuals by diverting its solid waste from landfills to recycling facilities and household composting. BGC organized a weekly Clean and Dry Plastic Drop-off to encourage BGC citizens to segregate in their homes and drop-off plastics for recycling. BGC collects an average of 400 kilograms of plastic waste per month that could have otherwise ended up in Metro Manila's garbage landfills⁹⁰.

SM Supermalls, through SM Cares, its corporate social responsibility arm, has partnered with PCEX, together with Colgate-Palmolive Philippines, to make its Plastic Waste Collection program more accessible to the community⁹¹. Plastic wastes are collected every day from 10 AM to 5 PM at designated drop-off points within the mall vicinity. Communities are advised to bring their plastic wastes empty, clean, and dry. Plastic wastes accepted are PET and high-density polyethylene (HDPE) bottles; plastic bottles used for shampoo, soap, detergent, and other liquid chemicals; small tires used for vehicle classes 1, 2, and 3; plastic

⁸⁹ Nordic Council of Ministers. (2015). *Guidelines to increased collection of plastic packaging waste from households*. Retrieved from <http://norden.diva-portal.org/>

⁹⁰ The Manila Times. (2021 June 17). *BGC's sustainability initiatives lead to less CO2 emission, residual reduction and healthier city*. Retrieved from BGC's sustainability initiatives lead to less CO2 emission, residual reduction and healthier city

⁹¹ Gaddi, C. (9 Aug 2021). *SM Marikina, SM East Ortigas set collect plastic waste*. Retrieved from SM Marikina, SM East Ortigas set collect plastic waste

bags; food containers; bubble wrap; e-commerce pouches; plastic cups and lids; straws; eating utensils; snack packets, sachets, and expanded polystyrene. Presently, a total of six SM malls are carrying out this collection program. SM Cares plans to bring the program to other malls nationwide.

Aside from the SM Plastic Waste Collection program, the E-Waste Collection program is another initiative of SM Supermalls⁹² that encourages mall shoppers, communities, and individuals to bring their old gadgets and other e-waste for proper disposal by accredited hazardous waste collection partners. Old or broken mobile phones, mobile phone chargers, power cords, commercial batteries, earphones/earbuds, calculators, printer ink and toner cartridges, small gadgets, and computer wiring are among the acceptable electronic waste. Customers can bring their e-waste every day during mall hours. SM Supermalls' E-waste Collection is projected to be available in all SM malls nationwide beginning February 2021.

3.3.4 Denmark: Going trash free by recycling all waste Sound Policies and Education

The Danish Island of Bornholm is adopting a new system to green its island by shutting down its only waste incineration facility. Local leaders envisioned turning the island into one of the first garbage-free communities on the planet through garbage sorting, recycling, and minimizing waste⁹³.

Applicability in the Philippines:

- Educating children on waste, resources, the environment, and nature
- Sorting waste to seven fractions (metal, plastics, glass, paper, cardboard, fishing nets, and insulation materials)

Raising awareness amongst children by communicating and educating them with their role in taking care of the environment empowers them to change their behavior and take action in dealing with the waste crisis.

Apo Island, in partnership with War on Waste BFFP Negros Oriental, in its drive to becoming a Zero Waste island, conducted an IEC campaign to school children on waste segregation and management⁹⁴. The children

engaged in an actual waste segregation activity wherein they grouped different types of wastes into categories such as biodegradable, recyclable, residual, hazardous, and special wastes. They were also informed of the positive environmental impacts of waste segregation such as enriching the soil through composting and revenue from selling of recyclables and lesser waste is to be transported to mainland Dauin. Adding environmental consciousness to the basic curriculum for schools may benefit the country in the long run.



IEC campaign on Waste Segregation, Apo Elementary School, Dauin, Negros Oriental⁹⁵

Likewise, Bacolod City Council, through Resolution No. 638-2019, urges all educational institutions in the city, both private and public, to strictly implement City Ordinance No. 860⁹⁶, which prohibits the distribution of plastic straws and stirrers within the locality. School administrators, faculty, staff, and student leaders were strongly advised and encouraged to come up with strategies in compliance with the ordinance. This includes the use of environmentally-friendly tableware such as reusable mugs, bamboo cups, and non-plastic utensils for students and school personnel. Canteen operators and food merchants in school campuses should either use paper-based packaging or serve food in the reusable tableware brought by students. This call is in response to the rampant use and proliferation of single-use plastic, plastic straws, and stirrers to shift to sustainable alternatives.

3.3.5 Singapore: 3R Portfolio

Singapore's 3Rs, 'Reduce, Reuse, and Recycle' is part of the National Environment Agency's (NEA) strategies in promoting waste reduction and recycling practices in the country. This

⁹² SM Supermalls rolls out SM Electronic Waste Collection Program <https://www.smsupermalls.com/smcares/press-releases/sm-supermalls-rolls-out-sm-electronic-waste-collection-program>

⁹³ Gunn, K. (2019 April 22). *This island is going trash free—by recycling all of its waste*. Retrieved from

<https://www.nationalgeographic.com/environment/article/bornholm>

⁹⁴ Waste Segregation 101. Retrieved from

<https://www.facebook.com/WOWBreakFreeFromPlasticNegrosOr/photos/>

⁹⁵ Photo taken from

<https://www.facebook.com/WOWBreakFreeFromPlasticNegrosOr/photos/>

⁹⁶ *Bacolod schools urged to promote anti-plastic ordinance*. Retrieved from

<https://www.google.com/url?q=https://visayas.politics.com.ph/bacolod-schools-urged-to-promote-anti-plastic-ordinance/>

initiative directs the reduction of the amount of waste generated, reuse of items that could have a future purpose, and recycling of waste into useful products in schools, homes, offices, hotels, supermarkets, shopping malls, as well as industrial developments⁹⁷.

Applicability in the Philippines:

- Supporting infrastructure
- Recycling in schools
- Public awareness programs

The Philippines, ranked as the world's third-largest ocean polluter, disposes directly into the ocean approximately 20 percent of the 2.7 million metric tons of plastic waste generated annually⁹⁸. To help address in reducing land-based sources of marine plastics pollution, the US Agency for International Development (USAID) has funded initiatives such as the Municipal Waste Recycling Program (MWRP) through grants and technical assistance for promising solid waste management and waste recycling efforts in the country⁹⁹. Likewise, in Davao, Engineer Winchester Lemen of Winder Recycling Company constructed a recycling plant that converts plastic waste into furniture and building materials such as floor tiles, bricks, planks, and pavers and encourages people to recycle and sort household waste properly¹⁰⁰.

Recycling at schools is not new in the country. In fact, according to MacCathmhaoil, the LGU of Parañaque in partnership with Philippine Alliance for Recycling and Materials Sustainability (PARMS) started their project to build a residual plastic recycling facility using a clean technology that processes 150 metric tons of waste per year, to be converted into pallets, school chairs and eco-bricks or recycled building bricks used in turn to improve the schools' facilities. Dole Philippines, in partnership with Mother Earth Foundation and Gone Adventurin', launched a recycling initiative called "Sunshine Heroes", which aims to instill recycling habits in schoolchildren. The project included making MRFs where students can bring their household recyclable waste to be sold to local junk shops or recyclers. Schools later receive support from the money generated by the MRFs. May BALIK! Sa PLASTIK! (Returns from Plastic) Program, a Nestlé initiative together with the City Government of Valenzuela; the Department of Education (DepEd) Valenzuela; and Green Antz Builders,

⁹⁷ Ong, S.E. (n.d.). *Good Practices to Promote the 3R*. Retrieved from <https://www.env.go.jp/recycle/3r/>

⁹⁸ McKinsey & Company and Ocean Conservancy. (2015 September). *Stemming the Tide: Land-based strategies for a plastic-free ocean*. Retrieved from <https://www.mckinsey.com/>

⁹⁹ USAID. (2021 July 23). *Environment*. Retrieved from <https://www.usaid.gov/philippines/>

¹⁰⁰ MacCathmhaoil, A. (2021 July 22). *Recycling in Philippines: Waste Management in the Philippines in 2019*. Retrieved from <https://www.waster.com.au/recycling-in-philippines/>

Inc., also aims to reduce the amount of post-consumer laminates in landfills, including in seas, oceans, and waterways to address the current plastic waste disposal problem in the Philippines (MacCathmhaoil, 2021).

3.3.6 South Korea: Volume based Waste Fee System in Seoul

Seoul has invested in good implementation of its waste management and strict policy instruments which have made the capital have one of the best waste recycling initiatives. The Volume Based Waste Fee system has two main goals: (1) to impose waste treatment charges on each polluter based on the volume of waste generated, and (2) to provide free collection service for recyclable wastes, thus reducing trash generation at the source and boosting recyclable trash collection¹⁰¹. This system uses five different types of garbage bags to separate waste into five categories: home waste, food waste, commercial trash, public purposes, and construction debris. With the success of this system, the South Korean government has decided to expand its implementation country-wide.

Applicability in the Philippines:

- Volume-based waste fee system implementation starting from major and big cities in the country
- Free service for the collection of recyclables
- Residents to properly sort out their wastes based on guidelines provided by their municipalities
- The government to invest in good solid waste management and practice strict implementation of the laws, especially the RA 9003

Section 24 of RA 9003 requires the use of separate collection schedules and separate trucks or haulers for specific types of wastes. Otherwise, vehicles used for the collection and transport of solid wastes shall have the appropriate compartments to facilitate efficient storing of sorted wastes while in transit. Vehicles shall be designed to consider road size, condition, and capacity to ensure the safe and efficient collection and transport of solid wastes. To adhere to this, the office of the Department of Environment and Natural Resources - National Capital Region (DENR-NCR) has provided selected barangays in Quezon City with waste collection trikes to support waste collection program of these barangays and strengthen their compliance with RA 9003¹⁰².

¹⁰¹ Henam, S. & Sambyal, S. S. (2019 December 27). *Ten zero-waste cities: How Seoul came to be among the best in recycling*. <https://www.downtoearth.org.in/news/waste/ten-zero-waste-cities-how-seoul-came-to-be-among-the-best-in-recycling-68585>

¹⁰² DENR National Capital Region Gives Waste Collection Trikes to Barangays of Caloocan, Malabon and Navotas City. Retrieved from <http://ncr.denr.gov.ph/index.php/news-events/photo-releases/1513-denr-national-capital-region-gives-waste-collection-trikes>



Waste collection in Tacloban City¹⁰³

The local government of Tacloban is in strict implementation of its "No Segregation, No collection" garbage policy¹⁰⁴. To carry out its garbage collection program, tri-bikes are provided to waste workers in collecting and transporting segregated wastes from households. Tri-bikes are preferred over trucks to allow collectors easy access in narrow alleys and densely-packed neighborhoods.

In Barangay Potrero of Malabon City, "No segregation, no collection" of waste is implemented¹⁰⁵. Residents are taught and advised to properly segregate their trash into at least four categories, namely kitchen waste, garden waste, recyclable waste, and residual waste. The waste collectors are instructed to refrain from picking up bags with trash not properly segregated. To check compliance of households to waste segregation, they are constantly reminded by the monitoring officers accompanied by waste. Today, almost 90 percent of Barangay Potrero residents practice segregation at source. Likewise, Dagupan City is implementing Ordinance 1929-2009, commonly known as the Comprehensive Solid Waste Management in Dagupan City, where solid wastes shall be segregated into three categories: recyclable wastes which consist of plastics, bottles, and cartons; special wastes such as paint, batteries, home appliances, and hospital wastes; and residual wastes such as sanitary napkins and disposable diapers¹⁰⁶.

"Barangay Kapitolyo Solid Waste Management"¹⁰⁷ program, which covers solid waste management policies, namely (1) 5Rs

¹⁰³ GAIA. *This is how we roll: Waste Collection Vehicles in Asia*. Retrieved from <https://sway.office.com/>

¹⁰⁴ C. Merin/CIO. (2020 January 23). *Tacloban City Govt to strictly enforce waste segregation ordinance*. Retrieved from <https://www.tacloban.gov.ph/tacloban-city-govt-to-strictly-enforce-waste-segregation-ordinance/>

¹⁰⁵ Henam, S. & Sambyal, S.S. (2019 December 31). *Ten zero-waste cities: How Malabon in the Philippines took on the challenge of waste*. Retrieved from <https://www.downtoearth.org.in/news/waste/ten-zero-waste-cities>

¹⁰⁶ Pasion, A. (2019 September 4). *Dagupan enforces 'no segregation, no collection' policy*. Retrieved from <https://www.pna.gov.ph/articles/>

¹⁰⁷ PICA0, (2019 September 02). *Capitol Strictly Implements Solid Waste Mgmt*. Retrieved from <http://iloilo.gov.ph/environment/capitol>

Policy; (2) Collection System Policy; and (3) *Basura-Baylo- Baligya-Bangko* Strategy; is implemented in the premises of the Iloilo Provincial Capitol¹⁰⁸.

The 5Rs Policy includes the following:

- Use of low-density plastics and expanded polystyrene as food containers or wrappers shall not allowed except as first packaging
- Caterers, ambulant vendors and canteen stall holders must use paper, table napkins, banana leaves or other biodegradable/organic materials to wrap/package food items for sale
- Purchases for catering services shall be provided for refillable water containers instead of bottled mineral water; caterers are required to provide glass, paper or reusable cups for drinking purposes; use of expanded polystyrene, plastic straws, plastic stirrers, and individually packed items/sachets are strictly prohibited
- Employees shall bring their own metal, ceramic or other reusable food containers when buying "take out" food items from the canteen and/or ambulant vendors
- Employees must bring their own ceramic mug/reusable cup for drinking coffee and their beverages
- Offices and employees shall reuse paper in printing internal correspondence
- Strictly practice Trash-in-a-Bottle, an Alternative Recycling Technology on Plastics-ART on Plastics in all Offices
- Unusable paper shall be shredded and processed into briquette
- Food wastes (left-over foods) shall be secured in a separate container preferably with cover and strictly adopt a "Bring-at-Home" system

The Collection System Policy strictly imposes:

- "No Segregation, No Collection" policy
- Offices shall be responsible to bring uncollected wastes to the Ecological Solid Waste Management Center
- Offices shall maintain color coded waste bins with label and strictly practice proper segregation
- Individual employee waste can/bin is not allowed
- Bulk and electronic waste will be waste collectors will be provided with PPEs and strictly follow the collection route plan with push carts with compartments
- Collection of waste by the General Services Offices or janitorial services shall

¹⁰⁸ EO 341, Series of 2021. *EO Amending Waste Management Policies and Guidelines at Barangay Kapitolyo*

be between 4 PM to 5 PM, Monday to Friday

- Wastes collected shall be delivered directly to Brgy. Kapitolyo Eco-SWM Center for final processing and to be picked up by the Iloilo City collector for final disposal
- For the special/hazardous wastes (e.g., PPEs), disinfection should be done before collection, placed in a separate and sealed container for final processing and disposal

Basura-Baylo-Baligya-Bangko Strategy is a decluttering mechanism that requires all offices to undertake a 4Bs Day every last Friday of the month. Offices will be provided with a passbook for recording, exchanging, buying, and saving out of the waste.

3.3.7 Japan: Kamikatsu, Japan's Zero-Waste Miracle Town

The city encouraged residents to recycle and reuse their waste, not to purchase or use products that might end up as waste, and requested manufacturers to produce products that could easily and safely be disposed of¹⁰⁹.

Applicability in the Philippines:

- Zero waste accreditation system

As Malabon City endures the volume of waste generated by the residents as a densely populated highly-urbanized city, its largest and most populous barangay, Potrero took the challenge of embracing the Zero Waste system. The barangay generates about four tons of mixed waste daily, which all end up in landfills prior to implementing the Zero Waste program. Waste segregation and collection were introduced through house-to-house IEC education. It also convinced citizens to segregate their waste which was the first and most challenging. In compliance with RA 9003 and to decongest landfills and dumpsites, Barangay Potrero built its own MRF, to cater biodegradables for composting; and temporarily store recyclables until they are sold to junk shops and residuals prior collection by the city for proper disposal. This eventually diverted a large volume of waste from the dumpsite. The residents have learned to adopt the practice as of their daily lives upon seeing and experiencing its direct benefits.



Waste Warriors, (who call themselves Ladies' Brigade) collect segregated wastes in Barangay Potrero in Malabon¹¹⁰

In 2016, Barangay Potrero received a citation from the Metro Manila Development Authority (MMDA) for best solid waste management program. Its plight to become a zero-waste community has become the benchmark for other barangays and communities in the country. Inspired by Potrero's success, the City of Malabon decided to implement a city-wide Zero Waste program as well¹¹¹.

Another city aiming to become Zero Waste is Batangas. The city manages a centralized waste collection system subcontracted with a private company, which operates daily waste collection services for biodegradable, non-biodegradable, and residual wastes¹¹². Since many households are located in areas that are too far from the truck collection routes, many resorted to illegal dumping and trash burning. Thus, the Batangas City Environment and Natural Resources Office, through the USAID, sought technical assistance from Mother Earth Foundation to implement a zero-waste approach such as (1) decentralization of segregated waste collection, regulation of single-use plastic waste, and recovery of high-value recyclable materials; (2) building the capacity of the city's environment office to improve enforcement of the national RA 9003, developing solid waste management plans, and drafting local ordinances; and (3) training community organizations and leaders to monitor solid waste management activities during the project and after completion¹¹³. The project aims to recover at least 55 percent of waste through composting or recycling and to have 90 percent of households practice waste segregation at source. This is also an effort to

¹¹⁰ Photo retrieved from

<https://zerowasteworld.org/wp-content/uploads/Malabon.pdf>

¹¹¹ GAIA. (2019). *Route to Zero Waste: A Flood-Prone City Shows How It's Done*. Retrieved from

<https://zerowasteworld.org/wp-content/uploads/Malabon.pdf>

¹¹² USAID. (July 2019). *Introducing Zero Waste to Batangas City*. Retrieved from

<https://urban-links.org/wp-content/uploads/USAID-Mother-Earth-Fact-Sheet.pdf>

¹¹³ USAID. (2019 July). *Introducing Zero Waste to Batangas City*. Retrieved from INTRODUCING ZERO WASTE TO BATANGAS CITY

¹⁰⁹ Henam, S. & Sambyal, S.S. (2019 December 26). *Ten zero-waste cities: Kamikatsu, Japan's zero-waste miracle town*. Retrieved from <https://www.downtoearth.org.in/news/waste/ten-zero-waste-cities-kamikatsu-japan-s-zero-waste-miracle-town-68577>

divert untreated solid waste (including plastics) from polluting local water bodies, such as Batangas Bay, the Calumpang River, and the biologically-diverse Verde Island Passage.

Another promising community to embrace a zero-waste approach is the volcanic island barangay of Apo in Negros Oriental. The decades of bad practices: muro-ami, dynamite and cyanide fishing, and unregulated commercial fishing resulted in devastation of waters and destruction of coral reefs around Apo Island, which prompted the establishment of a Marine Protected Area in 1986¹¹⁴. Later recovered and became a coral reef fish sanctuary and breeding area, Apo Island is lauded as one of the best-managed reefs and diving destinations in the country. The island has since then attracted local and foreign tourists. However, the increasing population and tourism-related activities in the island have resulted in environmental problems, including solid waste collection and management. Determined to protect the island, its people, and its seas as the main source of food and livelihood, the island's leaders have signed a partnership with WOW Negros Oriental in bringing the Zero Waste Cities Project to realize a Zero Waste Apo Island in 2020¹¹⁵. Volunteers from the island were trained in doing waste assessment and brand audits; conducting house-to-house information and education campaigns on proper waste segregation at source; improving its in-place waste collection system; and building decentralized MRFs¹¹⁶. Adopting the Zero Waste system has helped the community manage its household wastes; reduce the amount of residual waste collected and transported to the mainland for disposal; and eliminate wastes from entering water streams and seas. Recently, Apo Island has been recognized by the GAIA Asia-Pacific as the first "zero-waste" island barangay in the Philippines¹¹⁷.

3.3.8 Philippines: 'Aling Tindera' Waste-to-Cash Program

"Aling Tindera" Waste-to-Cash program is an initiative of PCEx, together with the City of Manila, with the support of the PepsiCo Foundation¹¹⁸. It is an innovative approach to addressing the problem of plastic waste in the city. The program turns women-owned sari-sari

stores to become collecting hubs for post-consumer plastic garbage and builds the community infrastructure necessary for waste aggregation, storage, and efficient transport to partner processing facilities. The aim is to increase income opportunities for women, micro-entrepreneurs, and city residents; a more organized informal sector of waste collectors; cleaner environments, and improved health. Each *Aling Tindera's* women *sari-sari* (convenience) store owner is provided with one container to serve as an aggregation hub where any member of the community may sell post-consumer residual plastic by kilogram and later offset partners through PCEx purchase. The DENR is rooting for the *Aling Tindera* program, which incentivizes fishermen and their families through collection of used plastic sachets that end up in Manila Bay and sell them in exchange for cash at *Aling Tindera* collection points stationed in coastal areas.

3.3.9 Philippines: Trash to Cashback Program

The Trash to Cashback program, a rewards points system and recycling initiative in Metro Manila, is a tie-up initiative between waste management company Basic Environmental Systems & Technologies, Inc. (BEST) and cashback loyalty platform bXTRA Philippines¹¹⁹. The program allows the community to trade their clean recyclable wastes into 'environmental points', which in turn can be exchanged for basic commodities such as rice, eggs, and vegetables. The innovative folks at BEST and bXTRA have come up with a system that determines the cashback points one can get depending on the type of recyclable waste collected from residential homes or workplaces and the total weight of the recyclable trash dropped off, with a minimum of one kilogram. The same is being implemented in Quezon City, through its Environmental Protection and Waste Management Department (EPWMD). A *My Basurero* Eco-Community kiosk has been set up at the Quezon City Hall Risen Garden where employees can trade their recyclable waste. The program is also part of the city's campaign to promote the importance of recycling and proper waste segregation and reduction of plastic waste¹²⁰.

3.3.10 Philippines: "JuanBag" Upcycling Plastic Waste

"JuanBag", a social initiative aims to extend the life of plastic packaging by upcycling them into

¹¹⁴ Fonacier, K. Turning the Tide

¹¹⁵ Zero Waste Asia. (2021 January). Retrieved from Apo Island Goes Zero Waste!

¹¹⁶ GAIA. Ferrer, M. *Winning the War on Waste*. Retrieved from Winning the war on waste

¹¹⁷ Pedrajas, J. (September 2021). Retrieved from *Negros Oriental's Apo Island named as PH's 1st 'zero-waste' island barangay* <https://mb.com.ph/2021/09/17/negros-orientals-apo-island>

¹¹⁸ Agoncillo, M. (2020 July 16). *Plastic Credit Exchange Launches 'Aling Tindera' Waste-to-Cash Program with the City of Manila*. Retrieved from <https://www.plasticcreditexchange.com/>

¹¹⁹ Robillos, A. (2021). *Trash to Cashback: Exchange your recyclable waste for Groceries Here*. Retrieved from <https://www.tripzilla.ph/trash-to-cashback-program/>

¹²⁰ "Trash to Cash Back" Plastic Waste Trading Program. Retrieved from <https://www.google.com/url?q=https://quezoncity.gov.ph/>

reusable bags that support Filipino artisans. JuanBag accepts clean and dry plastic waste donations from courier packaging, bubble wraps, supermarket plastic bags, mailers, and small boxes and can be picked up for free in Metro Manila areas¹²¹. They then send these plastic wastes to vulnerable communities in Metro Manila, which weaves the plastic waste into reusable bags. JuanBag also plans to provide a rebate and reward system for the customers who choose JuanBag as their carry-on bag for their parcel to be in which they may receive once they return it via designated bins or pick up schedule.

3.3.11 Philippines: “Misis Walastik” Incentive-based Plastic Waste Collection Program

“*Misis Walastik*”, is a community-incentive-based waste collection program on proper waste management which encourages each household to segregate and collect flexible plastic packaging waste such as sachets, plastic bags, and other single-use packaging for a cash incentive¹²². Segregated wastes are collected by roving Eco Aides of the *Linis Ganda* network, the widest junk shop network in the country with a stronghold in Quezon City. These Eco Aides are traditional “*mag-kakariton*” (waste pickers) upskilled as Information and Education campaigners providing training and communication materials to engage households to participate in the program.

Launched by Unilever Philippines, the program applies the principle *KOLEK* (collect), *KILO* (weigh), and *KITA* (pay/earn); it has been running since 2012. Over 370 barangays across Metro Manila and nearby provinces have adapted the program through partnerships with local governments, private organizations, and other stakeholders in the waste value chain. Such collaboration has successfully collected 230 metric tons of plastic waste and provided incentives near PHP 2 Million, thus providing additional income for both the informal waste collector sector and participating households.

SUMMARY:

Around the world, waste generation rates are rising, mostly from packaging waste. Countries like Sweden, Germany, Japan, South Korea, and Wales are a few to have employed various but almost similar policies, approaches, campaigns, and ordinances on waste collection, disposal, and management; promotion of sustainable consumption and production; and use of alternatives in mitigation packaging waste.

Examples of best practices and initiatives are:

- Avoiding unnecessary packaging
- Licensing rules, with less environmentally friendly packaging incurring larger fees
- Preventing plastics from getting into organic waste through segregation of trash
- Supporting infrastructure
- Recycling in schools
- Public awareness programs
- Disallow the use of disposables for dine-in
- Providing sacks for bringing segregated wastes to MRF
- Labelling of MRF
- Free service for the collection of recyclables
- Residents to properly sort out their wastes
- Waste-to-Cash Program
- Upcycling plastic waste
- Educating children on waste, resources, the environment, and nature
- Sorting waste to 7 fractions (metal, plastics, glass, paper, cardboard, fishing nets, and insulation materials)
- Zero waste accreditation system
- Public drop-off points

¹²¹ Owen, C.J. (2021 May 29). *This Initiative Collects, Recycles Plastic Packaging From Your Online Shopping Deliveries*. Retrieved from <https://www.realliving.com.ph/lifestyle/wellness/juanbag-initiative>

¹²² Unilever, (2020 February 19). *Unilever and Linis Ganda renew ties for sachet collection program*. Retrieved from Unilever and Linis Ganda renew ties for sachet collection program | Unilever

CONCLUSIONS AND RECOMMENDATIONS

Packaging industry is one of the biggest sectors that run the world's economy. Evidently, as the COVID-19 pandemic continuously strikes forcing physical channels to lockdown, the eCommerce industry has become fourth on the list of biggest industries on overall global retail sales¹²³, thus making packaging waste becoming a bigger issue. Undeniably, packaging, which comes in all forms, produces the most waste of any sector, often dumped in the wrong places and ends up in the oceans. Having massively devastated the marine ecosystem, with which no one seems to take responsibility, countries around the world have crafted environment-related standards and policies; launched various campaigns and awareness-raising; and initiated measures and workarounds, benchmarked and duplicated by other countries to reduce, if not totally resolve, the waste crisis.

The Philippines, having a population of around 109 million people as of 2020¹²⁴, and the world's 13th most populous country¹²⁵ remains the third¹²⁶ among countries contributing to most waste being mismanaged littering the oceans. This being said, multi-sector initiatives have been continuously drawn to mitigate the growing problem of waste pollution. Thus, this comparative study is done to identify and assimilate international and local standards, policies and initiatives; analyze its applicability in the Philippines setting focusing on circular economy of packaging, sustainable packaging, and waste management that would contribute in the reduction of marine litter.

The analysis served as a tool for wider perspective and appreciation in understanding and crafting standards, policies, and initiatives that will serve as a guide as the country jump-starts towards a circular economy. It also laid out opportunities as to what, whom, and how to work in synergy towards aspired

sustainability goals. Currently, the country has limited available standards and criteria related to sustainable packaging. With rampant disinformation practice on environmentally responsible public images, preferred product, and services; the development of standards and criteria that will serve as a guide for consumers to have confidence in availing services and procuring safe, reliable, and good quality products is deemed significant.

Digging into the policies of other countries, it can be said that the Philippine government has yet to pass well-grounded packaging-related legislations and policies crucial to all stakeholders in regulating packaging products and its use; adherence to obligated sustainable practices, and ensuring that producer responsibility schemes are established for all packaging. The government also has to improve existing laws on solid waste collection and management; reduction of waste; and recovery systems in combating the waste crisis in general. RA 9003 has been the benchmark for all the localized policies related to waste management in the country. LGUs have varying ordinances mostly focused on waste collection and management, and banning and/or prohibition on the use or sale of single-use plastics. The pitfall, however, is the lenient enforcement of the law including the imposition of fines and penalties; and the political will of the government leaders in consistently prioritizing and implementing the mandate.

With the growing concern in environmental conservation, calls from various environmental groups have led the government, non-government and civic organizations, trade and industry, businesses, and the likes to come up with sustainable initiatives on packaging including but not limited to design; reducing, reusing, and recycling containers and packaging without compromising the product safety and hygiene; and packaging wastes and its recovery. Study shows that the Philippines is capable of adopting and replicating these initiatives in the country. In fact, many of these best practices have already been started by some pioneering cities and organizations. Undoubtedly, with more sincerity and decisiveness with various multi-sectoral

¹²³ McKinsey & Company (2021). The quickening. Retrieved from <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/five-fifty-the-quickening>

¹²⁴ Philippine Statistics Authority. (2020). 2020 Census of Population and Housing Population Counts Declared Official by the President

¹²⁵ Worldometers. Countries in the world by population (2021). Retrieved from <https://www.worldometers.info/world-population/population-by-country>

¹²⁶ CITI I/O. (2019). Top 10 Countries With The Largest Contribution Of Garbage In The Ocean. Retrieved from <https://citi.io/2019/06/17/top-10-countries-with-the-largest-contribution-of-garbage-in-the-ocean/>

initiatives, coupled with government fundings and support, this gleaming reality of the packaging waste crisis will be alleviated.

With the additional challenges brought about by the COVID-19 pandemic, the consumption of single-use materials have drastically increased in the country. Actions such as technological development, investment on machineries and infrastructures, effective government program/project implementations and IEC campaigns,

support for local sustainable initiatives, and collaboration among different stakeholders involved can minimize the accumulation of waste and prevent it from reaching the seas. Also, more studies on the international best sustainable initiatives should be conducted specifically from the neighboring countries or from the ones with similar topographical and economical conditions with the country for it to become more adaptive to the Philippine setting.

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