



**EXTENDED PRODUCER
RESPONSIBILITY (EPR)
SCHEME ASSESSMENT FOR
PLASTIC PACKAGING WASTE
IN THE PHILIPPINES**

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TABLE OF CONTENTS

I.	INTRODUCTION	4
	A. Background of the Study	
	B. Objectives of the Study	
II.	TEAM COMPOSITION	7
III.	METHODOLOGY	7
	A. Preliminary Review	
	B. Stakeholder Consultations	
	C. Preparation of Draft EPR Model and Roadmap	
	D. Peer Review	
	E. Review of EPR Model and Roadmap	
	F. Email validation	
	G. Finalization of EPR Report	
IV.	PRELIMINARY REVIEW	11
	A. Summary of WWF EPR Study in 2020	
	B. Philippine Legislation on EPR	
	1. Definition of Obligated Companies	
	2. Waste Material Covered	
	3. The Producer Responsibility Organization (PRO)	
	4. Registration of EPR Programs and Compliance Reports	
	5. Penalties and Incentives	
V.	PROPOSED EPR MODEL FOR IMPLEMENTATION IN THE PHILIPPINES	24
	A. Proposed EPR Model	
	B. PRO Model	
	C. The Informal Waste Sector in the EPR Scheme	
	D. Roles of Stakeholders	
	1. National Government	
	2. Local Government Units	
	3. Government Agencies	
	4. Obligated Companies	
	5. Recyclers and Consolidators	
	6. Waste Collectors	
	7. Schools and Universities	
	8. Civil Society	
	9. Consumers	
	E. Roadmap towards a functional EPR scheme in the Philippines	
	1. Consumers	
	2. National and Local Government	
	3. Businesses	
VI.	CONCLUSIONS AND RECOMMENDATIONS	57
	A. Implementation of a Holistic EPR Scheme	
	B. Investment in Recycling Infrastructure	
	C. Incentives-based Participation in the EPR Scheme	
	D. Inclusion of the Informal Sector	
	E. Support of the PRO to the MRF	
	REFERENCES	60

LIST OF FIGURES

Figure 1.	Flow of plastic materials in the Philippines in 2019	4
Figure 2.	Basic EPR Framework	5
Figure 3.	Supply chain of packaged goods	6
Figure 4.	Composition of Project Team	7
Figure 5.	Flowchart of the Study	10
Figure 6.	Build Foundation for EPR with focus on Capacity Building	11
Figure 7.	Stimulate Holistic and Basic Waste Management	12
Figure 8.	Recommendations for Developing a Customized EPR Scheme for the Philippines	13
Figure 9.	Proposed EPR Scheme for the Philippines	25
Figure 10.	Implementation of the Proposed EPR Scheme for the Philippines in the Local Setting	26
Figure 11.	Organizational Structure of the PRO	30
Figure 12.	Hierarchy of the Plastic Recovery Chain	31
Figure 13.	Projects of Some Multinational Companies in the Philippines to Address Plastic Problem	35
Figure 14.	Five (5) steps producers may take in preparation for EPR implementation	49
Figure 15.	Diagram of a Reverse Logistics	50
Figure 16.	The Register within an EPR Scheme	56

LIST OF TABLES

Table 1.	Key Elements and Recommendations for the EPR Scheme in the Philippines	14
Table 2.	Senate and House Bills Related to Plastic Waste Management	17
Table 3.	Sources of Revenue of the Proposed EPR Scheme	51
Table 4.	Capital and Operational Expenses of the Proposed EPR Scheme	52
Table 5.	Factors in Computing EPR Fees	53
Table 6.	Government Incentives and Responsible Organizations	55

I. INTRODUCTION

Plastic pollution is a global transboundary problem that has reached gigantic dimensions worldwide which requires a systematic and holistic response for all stages of the life cycle of plastics. Approximately 4.8 to 12.7 million tonnes of plastics are entering the ocean yearly. This has been attributed to continuous plastic production and the lack of sound waste management, especially in low- and middle-income countries, such as the Philippines – considered as one of the top countries in the world for plastic leakage in the ocean (Jambeck, et al., 2015) (Law, et al., 2020).

In 2019 the amount of plastic items consumed by Filipinos was 2.15 million tonnes per annum. Thirty-five percent (35%) of the consumed plastics leak into the open environment while 33% are disposed of in sanitary landfills and open dumpsites, with only 9% recycled because of our lack of capacity to recycle both high and low value plastics (Figure 1).

WWF has thus identified the Extended Producer Responsibility (EPR) scheme as a critical policy tool that holds producers accountable for the full life cycle of their products and packaging. EPR is an environmental policy approach that emerged in the 1990s and is now increasingly recognized globally as a useful tool for accelerating the transition to sustainable waste management and a circular economy. This scheme encourages waste reduction through the elimination of unnecessary packaging of products and the development of more environmentally friendly packaging design. EPR works alongside and complements general waste management systems typically run by the government and its citizens.

The basic approach of EPR is based on obliging businesses (i.e., manufacturers, importers, and sellers) to assume full responsibility for the products they offer to the public not just during consumption but

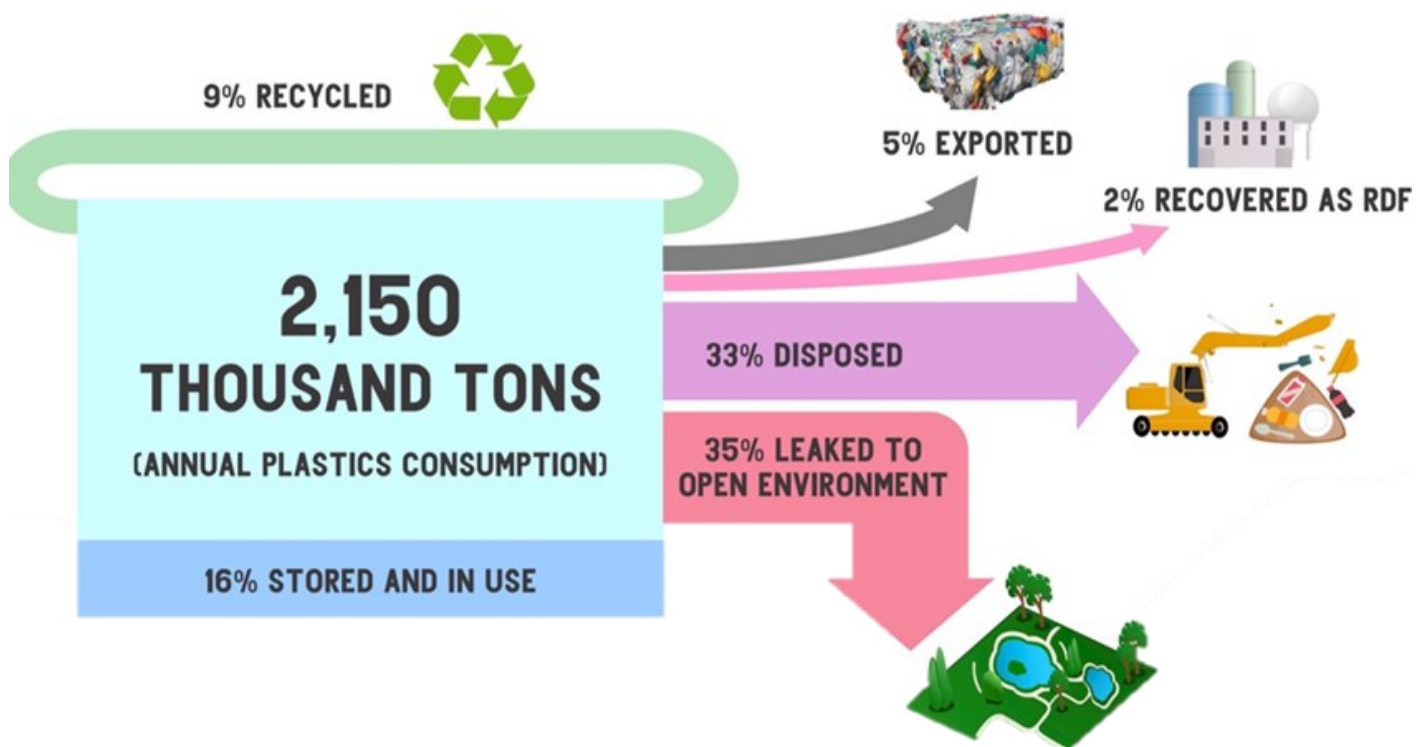


Figure 1. Flow of plastic materials in the Philippines in 2019 (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)

also during product conceptualization and the end-of-life phase or once their products have become waste (Figure 2). Obligated companies usually fulfill their responsibilities by paying EPR contribution fees, thus the financing of the packaging waste management does not need to be covered by the public funds. The fee is used to improve collection, recycling, and proper disposal by waste management operators and support other costs arising from maintaining the system. Because the participation of consumers play a large role in the overall effectiveness of the EPR scheme, the PRO may also conduct information, education, and communication (IEC) campaigns to better inform consumers of their role.

The Producer Responsibility Organization (PRO) is a central organization in the EPR scheme that represents and acts on behalf of the producer and importer. As a collective, the organization holds the take-back responsibility of all member company's post-consumer packaging and coordinates with other stakeholders to fully implement

the EPR scheme. The PRO enables the obliged companies to assume responsibility by combining their efforts and jointly managing the ensuing wastes (Figure 3).

WWF-Philippines has been advocating for the EPR scheme in both the House of Representatives and the Senate. In October 2020, WWF released the results of an EPR study wherein the applicability of EPR in the Philippine context was proposed based on the national material flow analysis of plastic wastes.

The House of Representatives Committee on Ecology and the Committee on Ways and Means of 18th Congress have submitted for plenary discussion House Bill No. 9147 known as "Single-Use Plastic Products Regulation Act" as the proposed substitute bill for plastics that includes an introductory provision for EPR. Meanwhile, the Office of Senator Cynthia Villar authored Senate Bill No. 1331, EPR bill that is being discussed in the Senate Committee on Ecology.

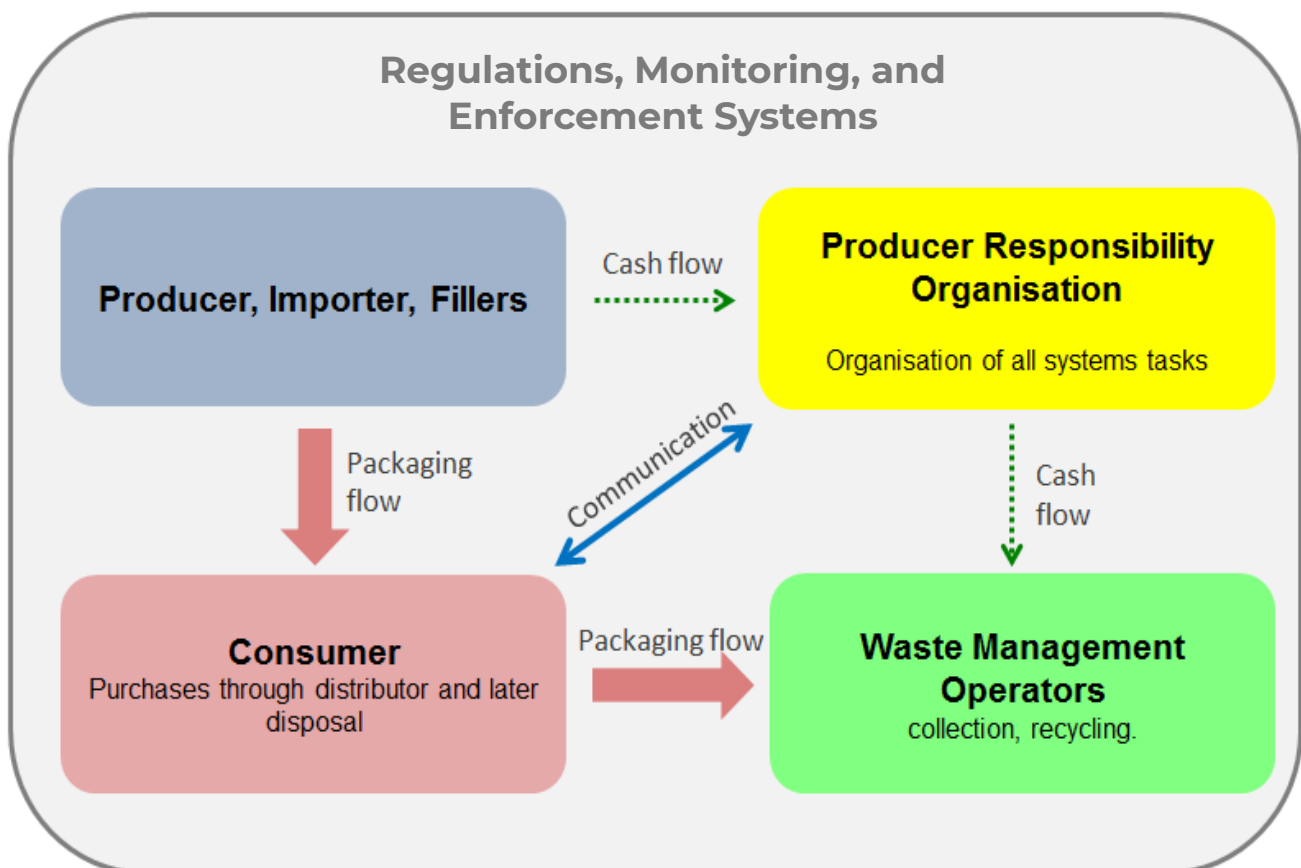


Figure 2. Basic EPR Framework (WWF Germany, cyclos GmbH, 2019)

These milestones on EPR advocacy have motivated WWF to work on a follow-up study to provide a detailed framework and roadmap for establishing an EPR scheme in the Philippines. It looks at the alignment of the proposed bills, previously proposed EPR

characteristics, and stakeholders' perspectives. The end goal of this study is to create a detailed EPR model customized for the Philippines that can serve as a guide for major stakeholders if a national law on EPR is passed.



Figure 3. Supply chain of packaged goods (WWF Germany, cyclos GmbH, 2019)

The overall objective of the study is to develop a detailed EPR scheme model for plastic packaging that is customized for the Philippines and provide a roadmap and recommendations for its full implementation that policymakers and stakeholders can use as reference for the EPR bill.

The specific objectives of this study are the following:

1) Review the currently proposed pending bills EPR framework in the Philippine Congress and Senate, and assess their alignment with WWF's EPR study and gather stakeholders' feedback regarding a localized EPR model in the Philippines;

- 2) Develop a working EPR model for the Philippines, and assess its strengths and barriers for its full implementation;
- 3) Develop a roadmap with stakeholders' role in adopting and implementing the proposed EPR model; and
- 4) Work with WWF in communicating results of the study and getting buy-in for the recommendations.

II. TEAM COMPOSITION

The AMH team is led by Dr. Maria Antonia N. Tanchuling, who serves as the Project Manager and Lead Technical Expert for this project (Figure 4). She is joined by Engr. Ma. Brida Lea D. Diola, MSc, the team's Solid Waste Management Expert, Atty. Mary Eloise L. Uychiat-Tirol, the team's Legal and Policy Expert, and Dr. Mili-Ann M. Tamayao, the team's Senior Industrial Engineer. They are supported by Engr. Benedict A. Requejo, MSc as Project Lead, Engr. Maria Deandra C. Andal as Project Designate, and five AMH Technical Staff.

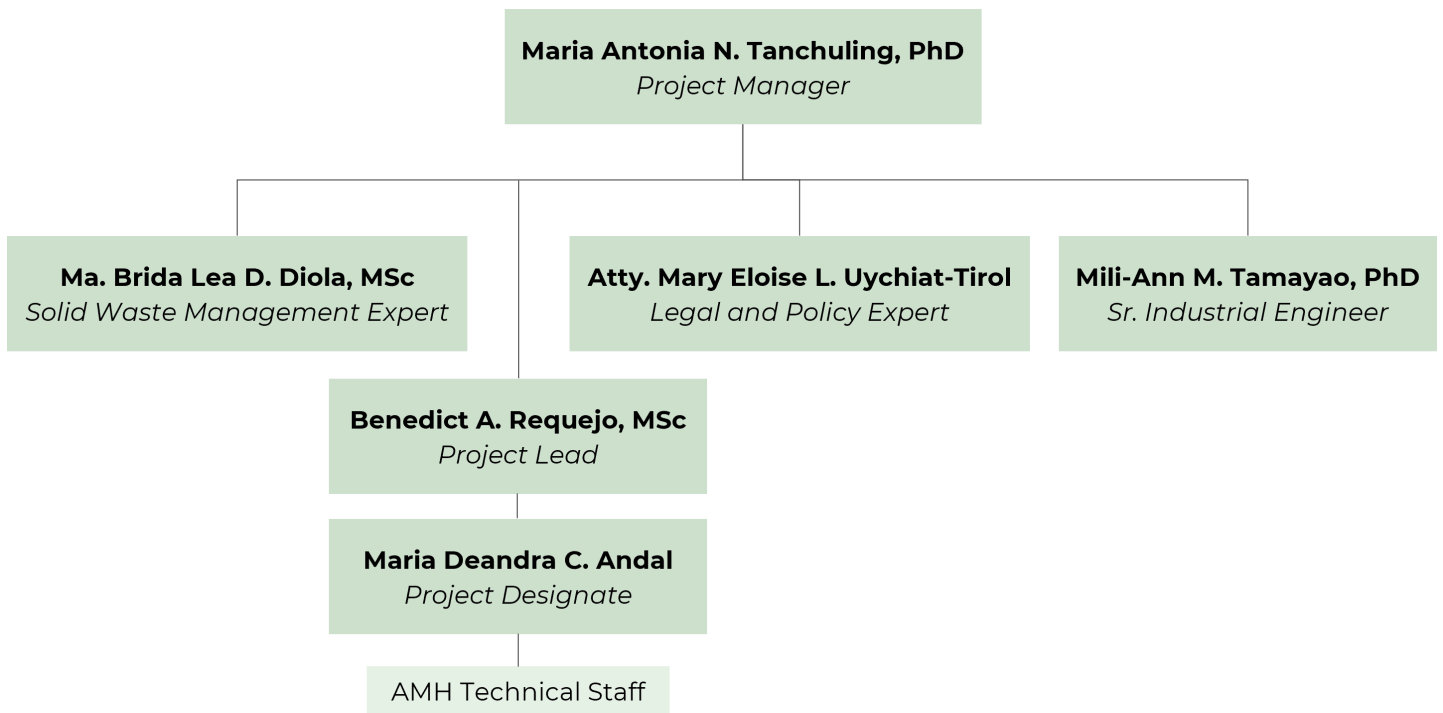


Figure 4. Composition of Project Team

III. METHODOLOGY



PRELIMINARY REVIEW

AMH conducted secondary research, with desk research and literature review as primary tools, to collect existing available information and data related to the study. Specifically, AMH conducted a quick review of the plastic problem in the Philippines and the summary of the EPR Scheme Assessment for Plastic Packaging Waste in the Philippines published by WWF-Philippines last October 2020. AMH also reviewed current legislation in place and recent developments from the government to address packaging waste in the current Philippine landscape.



STAKEHOLDER CONSULTATIONS

The remaining gaps in information and data from the preliminary reviews were addressed by engaging relevant key stakeholders through stakeholder consultations for information gathering, verification, and clarification.

The following key stakeholders were organized into groups with similar interests and functions and scheduled for separate stakeholder consultations.

- 1) Government Sector
- 2) Industry Sector
- 3) Social Enterprises
- 4) Hospitality Industry Sector
- 5) Non-Government Organizations (NGOs), Consumer Groups, and Academe
- 6) Waste Management Operators

The objective of the stakeholders' consultation was to introduce and discuss the WWF EPR Follow-up Study, gather information and feedback in relation to the proposed EPR implementation in the Philippines and SUP bill, and align on next steps. The stakeholder groups identified were consulted via online meetings. Each stakeholders' consultation contained the following activities:

- 1) Introduction of WWF Philippines and AMH Philippines, Inc.
- 2) Project Overview
- 3) Presentation of initial EPR models and roles of the invited stakeholder
- 4) Guided Question-and-Answer (Q&A) and Open Forum
- 5) Recap and next steps

Apart from the stakeholder consultation sessions, data gathering was also done through interviews and online surveys to specific stakeholders. Personal interviews with junk shop operators and informal waste pickers were done with WWF-Philippines' Plastic Smart Cities project partners. Meanwhile, survey questions for consumers were also posted online and through the assistance of EcoShift.



PREPARATION OF DRAFT EPR MODEL AND ROADMAP

AMH consolidated and analyzed the main findings in the stakeholder interviews to develop a specific EPR model and accompanying model EPR law customized for the Philippines including:

- Pros and cons of proposed EPR models;
- Integration of the informal waste sector;
- Review of existing waste management systems and potential scale-up;
- PRO model;
- Analysis of economic, environmental, and social impacts; and
- Incorporation of recommended position papers for EPR, biodegradable plastics, and waste management

A proposed roadmap towards full implementation of the EPR system with recommendations was also devised. This includes the following:

- Roles of businesses, producers, and manufacturers;
- Role of the Government during and after the implementation of EPR; and
- Role of Consumers



PEER REVIEW

The Draft EPR Model and Roadmap were sent to identified experts in law and policy, plastics industry, and waste management for peer reviews. Feedback from the peer reviews were used to improve the EPR Model and Roadmap before presenting to stakeholders for another round of stakeholder consultations.



REVIEW OF EPR MODEL AND ROADMAP

A second round of stakeholder interviews was conducted on October 25-29, 2021 with identified stakeholders to present the initial EPR model and roadmap that were developed and gather their inputs to further refine for its streamlined implementation.



EMAIL VALIDATION

A brief EPR report was shared with stakeholders via email to address feedback and gaps in the EPR Model and Roadmap that were raised during the conduct of the second round of stakeholder consultations and further solicit feedback. Stakeholders were given November 22, 2021 to December 3, 2021 to give their feedback.



FINALIZATION OF EPR REPORT

AMH prepared a comprehensive final EPR Report, which contains the revised EPR Model and Roadmap.



Figure 5. Flowchart of the Study

IV. PRELIMINARY REVIEW

There is currently no EPR system in place in the Philippines. Hence, an EPR scheme assessment report for plastic packaging waste was published by WWF Philippines in October 2020 to serve as baseline and reference for the proposed elements and components of an EPR scheme suitable for the country. This includes the comprehensive flow analysis of plastic packaging waste at a national level as well as the short- and medium-term actions required for the establishment and implementation of an EPR system.

EPR is defined as a policy approach wherein the producers shoulder a significant responsibility for the treatment or disposal of post-consumer products. With this, incentives are provided to minimize waste at the source, product design for the environment are promoted, and achievement of public recycling and waste management goals are supported (OECD, 2016).

It was discussed that the first approach for the implementation plan for the proposed EPR scheme in the Philippines requires two main steps. First is to build a foundation for EPR with focus on capacity building wherein a medium-term system changes by introducing the concept shall be prepared based on an aligned understanding by all stakeholders (Figure 6). Second is to stimulate a holistic and basic waste management which can be reorganized according to the EPR scheme upon implementation (Figure 7).

It is recommended for the EPR scheme to be mandatory but with a transition phase at the onset where obliged companies can comply on a voluntary basis. This transition phase will serve as an opportunity for all producers to minimize non-essential plastics in their business value chain. Voluntary compliance will be allowed for pilot projects during the transition phase to gather practical knowledge on waste management measures

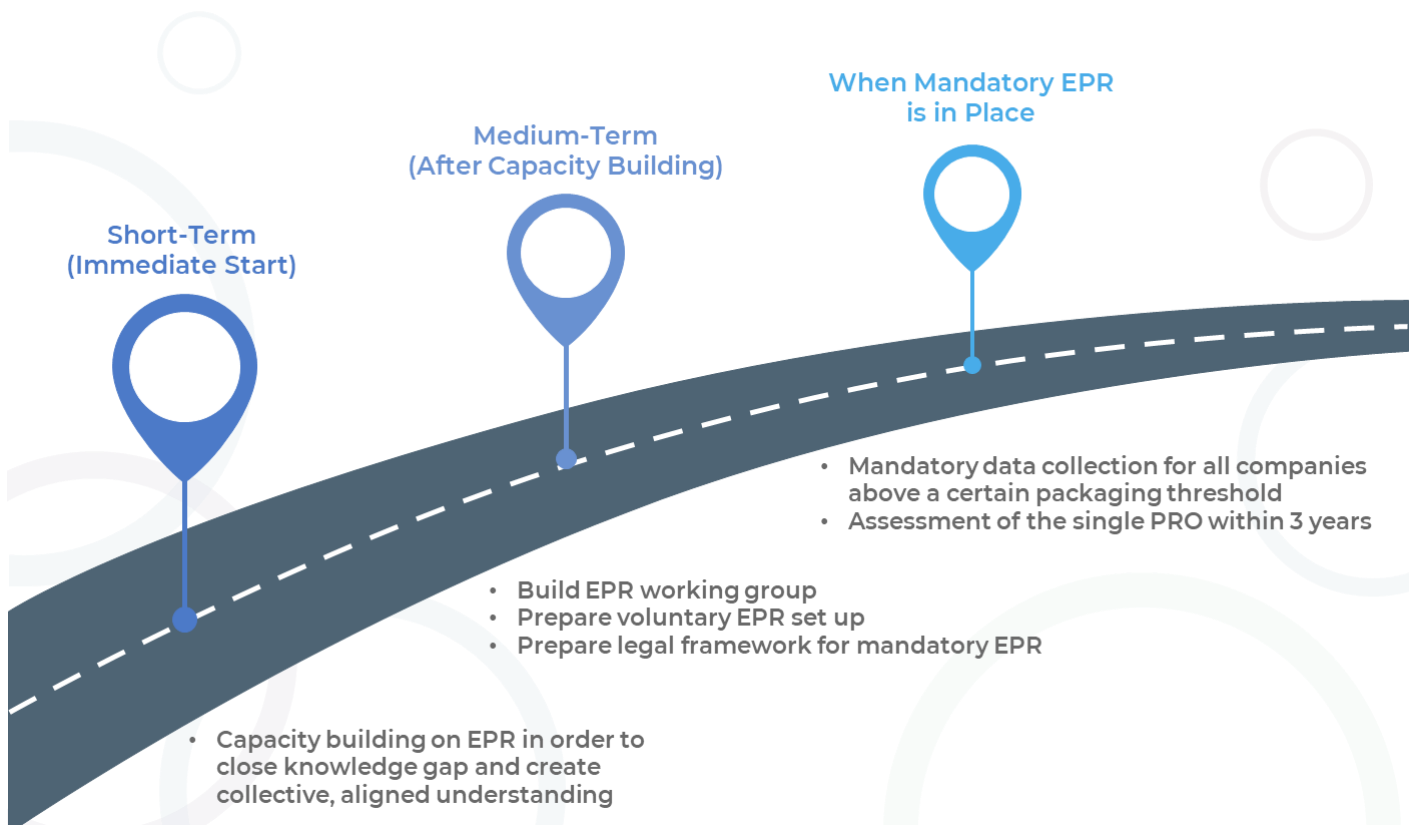


Figure 6. Build Foundation for EPR with focus on Capacity Building (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)

during collection, sorting, and recycling as well as data collection, and system relevant mechanisms (e.g., register of obliged companies). Compliance of all producers to the EPR scheme shall be mandatory after the transition phase has passed. Legislation should include provisions for a voluntary transition phase, suggested to run for a period of three years, followed by mandatory compliance.

The EPR scheme should be applied not just for consumer packaging materials but also for non-packaging plastic products like Single-Use Plastic (SUP). Examples of SUPs are drinking straws, plastic bottle caps, sand bags, grocery bags, among others. The coverage of the scheme should focus primarily on all household packaging of any material, service packaging and specific single-use plastic items to steer clear of undesired substitution effects in packaging design. The materials shall create the basis for the financial and operational aspects of the PRO, the central organization.

One non-profit industry-led system PRO is recommended to ensure holistic, reliable, and fair waste management in which the responsibility is collectively assumed. The PRO should constitute representatives from a wide range of stakeholders such as local and MNC producers and importers, waste management operators, government agencies, academe, and consumer associations.

Strict monitoring and control systems are also recommended upon implementing an EPR scheme to avoid fraud. Government is tasked to carry out the controls and penalties in ensuring that all actors in the EPR scheme including the PRO are compliant. The monitoring and control systems are essential as they keep the level playing field among obliged private industry and guarantee transparency of the system.

Lastly, to overcome the current bottleneck of insufficient recycling capacity, the financial flows of the EPR system are recommended to be utilized towards measures on improving

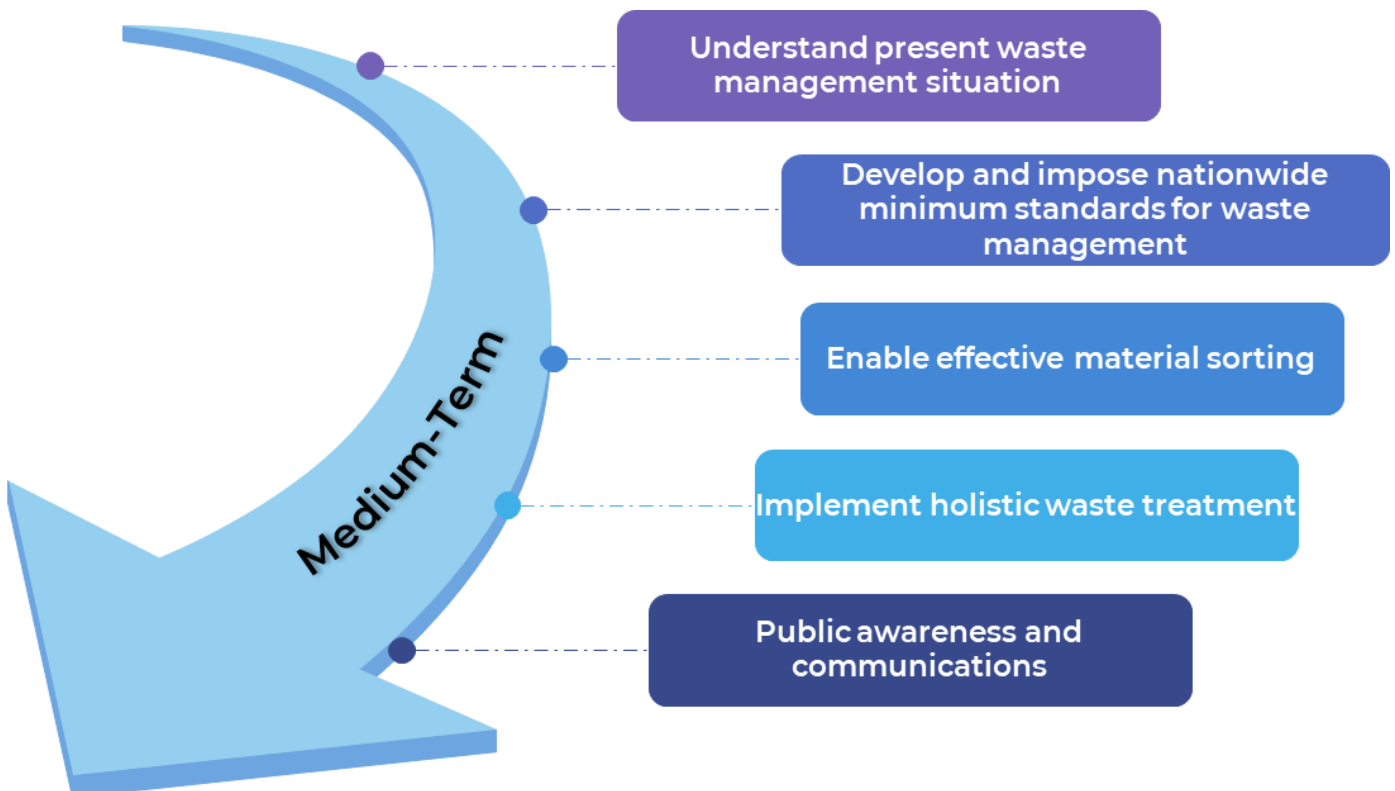


Figure 7. Stimulate Holistic and Basic Waste Management
(WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)

the quality and quantity of the recycled plastics to achieve closed-loop recycling.

Integrating the principles of EPR schemes with potential legal framework and the roles and responsibilities of the relevant stakeholders, the following key elements to consider are presented in the following table (Table 1).

The findings of the study show that the Philippines is at the early stages of sustainable waste management and that the current recycling infrastructure is limited (WWF Philippines, Inc., cyclos GmbH, & AMH

Philippines, Inc., 2020). Hence, the recyclables especially plastics may end up on disposal sites or leak to the open environment. There is also no sound database available, and uniformity in the implementation of national regulations, and responsibilities are dispersed among all government levels resulting in inefficiencies and weak accountability. Therefore, the focus must be on building the foundation for EPR with emphasis on capacity building and stimulating a holistic, basic waste management with the goal to establish a mandatory EPR framework and related organizations within the next 3 years.

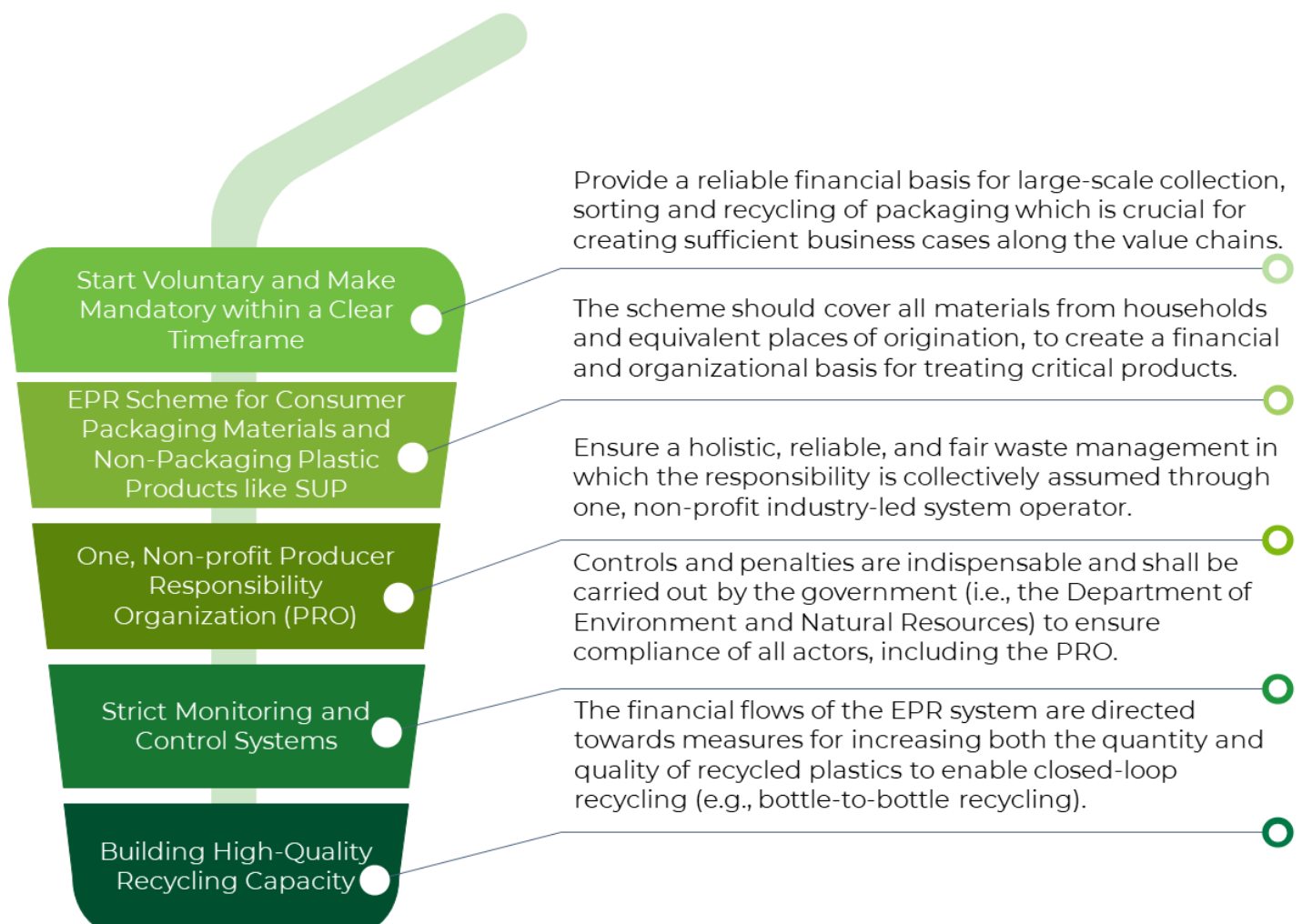


Figure 8. Recommendations for Developing a Customized EPR Scheme for the Philippines (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)

Table 1. Key Elements and Recommendations for the EPR Scheme in the Philippines
(WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)

Key Element	Description	Note and Variations	Recommendations for the Philippines
Mandatory vs. Voluntary	EPR systems can be either voluntary, where companies participate based on their choice or mandatory, in which participation is obligatory for certain companies	Voluntary systems can be used as a preliminary EPR system to gain first experiences while the legal basis for a mandatory system is prepared. When the law enters into force, the EPR systems become mandatory	Start voluntary, make mandatory over time
EPR scope	All packaging or specific packaging; products need to be clearly identifiable and assignable to their original 'producer' to oblige them to pay, usually done by a register where all have to sign up and report regular amounts put onto the market	Typical products covered under an EPR scheme: different kind of packaging, specific non-packaging items (like straws, cigarette buds). Industrial and commercial packaging (ICP) is often excluded as companies usually manage their waste collection and recycling following to market mechanisms	All household packaging (of any material), service packaging and specific single-use plastic items. Optional for ICP if adequate treatment is not proven
PRO	Organization that collectively takes on the responsibility of all of its members, thereby becomes responsible for operating the system. Different setup possibilities	Decision for PRO setup should be based on the effectiveness and efficiency as well as the possibility to control the system	Single, industry-led PRO set up as a non-profit organization. PRO includes a wide range of stakeholders representing obliged members (local and MNC producer and importer), other members (plastic value chain incl. waste management operators), government representatives from all levels, academia, and representatives of the consumers

Key Element	Description	Note and Variations	Recommendations for the Philippines
Producers and Importers	Equal treatment of domestic producers and importers (i.e., companies putting the packaged products on the Philippine market for local consumption) to ensure level playing field	Possibility to define thresholds of packaging put on the market and company size to account for bureaucratic efforts and avoid competitive disadvantages for smaller companies.	Emphasize and ensure system transparency for mutual control, and avoid corruption, emphasize first mover advantages for a voluntary scheme at the beginning
Waste Management Operators	Closing the loop through collecting, sorting, and recycling the packaging waste especially for material with so far negative market value. Receive funds to treat all material.	Operations remain with the public authority or organizationally and financially both in hands of the PRO or a hybrid model	A hybrid model with shared responsibility and joint development of individual waste management concepts for Barangays (PRO+LGUs, legislated and concepts approved by national government)
Government / Defining Targets and Responsibilities	Needs to be defined in law (in case of mandatory system). Needs to be clear and unambiguous. Targets should also consider technical and economic feasibility, existing/needed infrastructure, geographic and demographic characteristics, and the overall state of the waste management system	Different types of targets (recycling/recovery quotas, access rate to system, specific waste management measures); appropriateness of targets depending on state of art of waste management system	Enact mandatory law and regulation on EPR Transparent system, rigid enforcement mechanisms

PHILIPPINE LEGISLATION

There are currently no laws in the country that require EPR or explicitly mandate Product Stewardship (PS). However, there are developments both in the lower house and upper house of the Philippine Congress to legislate EPR. It is also highlighted that the Ecological Solid Waste Management Act of 2000 or R.A. 9003, which was approved two decades ago, can be considered a foundational policy to EPR adoption in the Philippines.

R.A. 9003 is the national law governing the implementation of a systematic, comprehensive, and ecological solid waste management plan down to the barangay level (Republic Act No. 9003, 2001). The National Solid Waste Management Commission (NSWMC), meanwhile, is the government entity in-charge of properly implementing the rules and regulations of the Act. R.A. 9003 implements solid waste management from the national level to the local barangay level by outlining the responsibility at each level. Levels include solid waste management boards at both the provincial and city/municipal levels and the barangay officials. Barangays are required to handle waste collection, establish Materials Recovery Facilities (MRFs), and conduct educational campaigns and seminars. Meanwhile, city or municipalities are expected to prepare, implement, and monitor municipal solid waste management plan (MSWMP). The provincial governments review MSWMPs, prepare their own Provincial Solid Waste Management Plan (PSWMP), and encourage coordination between LGUs where possible. (Republic Act No. 9003, 2001).

As R.A. 9003 tries to encompass all aspects of the solid waste management of the country, some sections lead to the concept of equal responsibility among all actors involved in the waste cycle. There are, however, limitations to R.A. 9003 in supporting the whole concept of EPR, wherein businesses and manufacturers

are supposed to be responsible for each product they produce up to its end-of-life phase (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020). The act does not explicitly require design and management responsibility by producers over plastic and other packaging waste.

To fully understand the status of the EPR legislation in the Philippines, we must look at the current plastic regulation bills that relate to the EPR concept. Listed below are respective senate bills and house bills, all of which are in the proposal stage, that deal with plastic waste management in the country (Table 2).



As of the date of this Report, the foregoing senate bills, i.e., SB 1331, SB 40, SB 114, SB 156, SB 333, SB 557, SB 811, SB 880, SB 954, SB 2285, have been substituted by SB 2425 with the short title “The Extended Producer Responsibility Act of 2021” while HB 9147 remains pending with the House of Representatives. The substitution of the several senate bills dealing with various kinds of plastic waste into one integrated legislation signifies the intent of the senate to combine their efforts and focus on a more comprehensive and cohesive policy framework in the form of the EPR System to address the plastic packaging waste problem of the country. The sponsorship speech of Senator Cynthia Villar, in recommending the approval of the substitution of SB 2425 in lieu of the aforesaid senate bills, gives insight into this intent as well as expressed the recognition that the current legislations, particularly R.A. 9003 were ineffective in terms of their implementation and enforcement.

**Table 2. Senate and House Bills Related to Plastic Waste Management
(WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)**

Bill No.	Bill Name	Filed By	Main Provision
SB 333	Single-Use Plastic Product Regulation Bill	Senator Cynthia A. Villar	<p>All single-use plastics should be banned after a year of the bill's passage.</p> <p>Collection, recycling, and disposal by producers of single-use plastics manufactured and/or in circulation in the general market.</p> <p>For each piece of single-use plastics already manufactured, in circulation, and for use in transaction, retailers shall charge the consumer a minimum levy of (Php 5.00)</p>
SB 40	Single-Use Plastics Regulation and Management Bill	Senator Francis N. Pangilinan	Ban on single-use plastics food establishments, stores, markets and retailers after a year of the bill's passage
SB 114	Regulating the Use of Plastic Bags	Senator Maria Lourdes Nancy S. Binay	Ban on single-use plastic carry-out bags in stores and promotion of biodegradable bags instead
SB 557	Single-Use Plastics Ban Bill	Senator Emmanuel D. Pacquiao	<p>All single-use plastics in food establishments, stores, markets and retailers should be banned after a year of this bill's passage.</p> <p>For single-use plastic materials which cannot be avoided business enterprises have the responsibility to recycle them.</p>
SB 811	Plastic Straw and Stirrer Ban Bill	Senator Risa N. Hontiveros	Ban on plastic straw and stirrers at food service or other service establishments that serve beverages, except for senior citizen and persons with medical conditions.
SB 880	Plastic Products Regulation Bill	Senator Manuel M. Lapid	<p>Phase-out of plastic products</p> <p>Use of biodegradable plastic bags and in-store recovery program for plastics</p>
SB 954	Straw Regulation Bill	Senator Juan Edgardo M. Angara	Mandatory plastic straw fee of Php 2.00, except for senior citizens and persons with medical conditions
SB 156	Beverage Container Disposal Bill	Senator Emmanuel Joel J. Villanueva	<p>Brand owners shall implement an effective redemption, transportation, processing, marketing, and reporting system for the reuse and recycling of used beverage containers of the brand owner.</p> <p>Required labelling of refund value on the beverage container</p>

Bill No.	Bill Name	Filed By	Main Provision
SB 1331	An Act Institutionalizing the Practice of Extended Producer Responsibility on Plastic Packaging Waste, Amending for this purpose Republic Act No. 9003, otherwise known as the "Ecological Solid Waste Management Act of 2000."	Senator Cynthia Villar	Introduced the concept of EPR including, among others, the voluntary organization of a PRO, mandatory implementation and registration of EPR programs by obliged companies and compliance period for recovery and recycling of packaging materials.
SB 2285	An Act Institutionalizing the Practice of Extended Producer Responsibility in Waste Management, Amending for this Purpose Republic Act No. 9003, otherwise known as the Ecological Solid Waste Management Act of 2000"	Senator Ramon Revilla Jr.	
SB 2425	An Act Institutionalizing the Practice of Extended Producer Responsibility on Plastic Packaging Waste, Amending for this purpose Republic Act No. 9003, otherwise known as the "Ecological Solid Waste Management Act of 2000."	Senator Cynthia Villar	In substitution of Senate Bill Nos. 1331 and 2285, taking into consideration Senate Bill Nos. 40, 114, 156, 333, 557, 811, 880, and 954
HB 9147	Single-Use Plastic Products Regulation Act	Rep. Lord Allan Jay Velasco et.al	Regulating the production, importation, sale, distribution, provision, use recovery, collection, recycling and disposal of SUPs through, among others (i) phase out of SUPs, (ii) mandatory organization of producers and importers to implement an EPR scheme, and (iii) defining the responsibility of the commercial establishments, government agencies and LGUs.

It may be inferred that SB 2425, which is not an entirely a new legislation but constitutes proposed amendments to R.A. 9003, is intended to provide the mechanism to ensure effective and impactful implementation of the country's solid waste management goals with particular application to the packaging wastes. In this case, the senate's choice mechanism is the EPR system with the underlying purpose of, among others, shifting the burden of the execution and achievement of the policy goals of waste reduction, segregation, and management from the local government to the producers of packaging products. It is also worth noting that critical intervention at the design stage of packaging products was expressed as one of the goals of SB 2425.

We will discuss briefly below our assessment of the key components of the EPR system as envisioned by SB 2425.

The current challenge for both SB 2425 and HB 9147 is that the 18th Congress of the Philippines is set to adjourn in June 30, 2022 and if these bills do not pass into law before then, they will be considered terminated and will be archived unless they will be reintroduced in the 19th Congress.



DEFINITION OF OBLIGED COMPANIES

The wording of SB 2425 lends to an interpretation that the enumeration of companies required to participate in the EPR program is not mutually exclusive. The bill states that the "Obligated Companies shall refer to companies that are required to take part in an EPR Program including, but not limited, to producers, manufacturers, and importers, and those who offer any product or good for consumption or use, whether for sale or for free of the general public". The non-exclusivity of the definition is welcome to account for possible developments in the EPR system as it evolves in the Philippine setting.

The bill also expressly exempts micro enterprises (i.e., enterprises with total assets not exceeding three million Philippine pesos) and small enterprises (i.e., enterprises with total assets not exceeding fifteen Philippine pesos) (Republic Act No. 9501, 2007) from the mandatory compliance of the bill. However, there appears to be an exception to this exception as the bill goes on to state after the exception that "But shall include suppliers of branded and unbranded plastics as defined in the next paragraph and used in online deliveries food service as well as in micro and small enterprises." Perhaps there is a need to further clarify the wording of the bill in this regard. This clarification is significant if we consider that the low value plastics such as sachets and plastic bags are generally produced or used by small and micro enterprises.



WASTE MATERIAL COVERED

One of SB 2425's policy statement reads "Institutionalize the extended producer responsibility (EPR) mechanism as a practical approach on efficient waste management, waste reduction and development of environmentally-friendly packaging products." Based on this policy statement, it appears that the EPR is intended to be applied to all packaging wastes with no distinction as to the materials used. This interpretation finds support in the Definition of Terms where it states that EPR "shall refer to the environmental policy and practice in which obliged companies have the responsibility for the proper and effective recovery, treatment, recycling or disposal of their products after they have been sold and used by consumer with the objectives of reducing packaging waste generation and of improving recyclability or reusability of packaging wastes." However, in Article 8 of the bill that discusses EPR as to scope, the materials covered and the mechanisms for implementation, states that Obligated Companies shall "adopt mechanisms and strategies for the effective and proper recovery and management of plastic packaging wastes generated after the use or consumption of the products that have been produced, imported, distributed, retailed or sold, as the case may be, through the institution of a comprehensive EPR Program, which necessarily include reuse and recycling methods that will result to the reduction of plastic packaging wastes."

There now appears to be an ambiguity between the intent of the contemplated legislation and in its details. This ambiguity is further spelled out in the mandatory elements which Obligated Companies must include in their EPR Programs. While one of the elements speaks of "packaging" in the unqualified sense (please see Section 44-E, item (III)), another requirement is the "collection system, collection center mechanism, and specific collection targets, which includes, at the minimum, end-of-life or residual plastics, paying particular attention to coastal communities and islands.". Further, the bill mandates that the EPR Program's sorting, recycling, and recovery targets may be "harmonized with the targets mandated under this Act and linked and integrated with the targets of the MRF and the LGU solid waste management plan and improving and strengthening them" (please see Section 44-E, item (IV) and (V)).

This calls for another clarification in the wording of the bill for two reasons: One, any ambiguity in the bill particularly in its scope and coverage will dilute the significance of the policy sought to be implemented as this ambiguity becomes the proverbial "loophole" in the law, a potent source of excuses for strict compliance. Second, if the policy of the state envisions a comprehensive ecological solid waste management, then the bill should embrace future-proof language that will avoid limitations in the application of the law to plastic wastes. The bill may consider a phased implementation of the EPR system where the coverage of the materials may be staggered across a certain duration. For example, the first years of the EPR System could focus on plastic packaging and thereafter optimize the same strategies to apply to paper packaging or other types of packaging the recovery of which has become compelling.



THE PRODUCER RESPONSIBILITY ORGANIZATION (PRO)

One of the distinctive and main features of prevailing EPR systems is the PRO. As recommended in the previous EPR report, the PRO for the Philippines is envisioned to be an industry-led, non-profit, single PRO to ensure a holistic, reliable, and fair waste management (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020). The current draft of SB 2425 makes the organization of a PRO voluntary among Obligated Companies rather than mandatory. Moreover, it appears from the wording of Section 44-D and Section 44-E of SB 2425, it is possible that there could be more than one PRO. This means that Obligated Companies may each have its own EPR program without having to form collectively as a PRO or, one or two groups of Obligated Companies may form a PRO for each group. These clauses appear to deviate from the stated policy to “adopt a systematic, comprehensive and ecological solid waste management program which shall: xxx (i) Institutionalize public participation in the development and implementation of national and local integrated, comprehensive and ecological waste management programs.” On the other hand, this structure may be more acceptable to the industry sector especially those that have begun to participate in recycling and recovery programs dealing with their plastic packaging.



REGISTRATION OF EPR PROGRAMS AND COMPLIANCE REPORTS

In order for the NSWMC to regulate and monitor compliance with the EPR Program in SB 2425, Obligated Companies are required to register their EPR Programs on their own or through their PRO. The approval of NSWMC of the submitted written EPR Programs is necessary to complete the registration. For purposes of whether Obligated Companies achieve their targets on recovery and recycling, they are obliged to submit annual compliance reports. SB2425 also set staggered targets depending on whether the Obligated Companies are classified as: (i) large enterprises (i.e., companies with total assets amounting to more than one hundred million), and (ii) micro, small or medium companies. In both cases, the Obligated Companies are required to reach an 80% recovery target on recovery and recycling of the volume of plastic packaging waste generated for their products, sold or distributed in the immediately preceding year, within five years from the initial approval of the EPR Program.

SB 2425 also requires Obligated Companies to perform audit on their EPR Programs and define their own audit criteria by themselves. It would have been ideal if the legislation or its implementing rules and regulations will: (i) provide parameters for audit criteria so that the assessment and evaluation of EPR Programs will be based on objective standards and (ii) the audit will be undertaken by independent auditors.

SB 2425 also recognizes the role of the informal waste sectors — including waste pickers- by allowing EPR programs involving the collaboration with the LGUs, communities, and these informal waste sectors.



PENALTIES AND INCENTIVES

SB 2425 provides for penalties and tax incentives as tools to implement the EPR System. Penalties are in the form of fines for failure to establish an annual EPR Program, for failing to meet targets for recovery and recycling, and under-declaration of packaging materials sold or over-declaration of plastic packaging waste collected. As incentives, Obligated Companies may avail of:

- A. tax and duty exemption imposed on capital equipment (including transportation) used for collection, transportation, segregation and recycling of solid wastes and other activities in the EPR Program. Notably, this tax and duty relief is only available to Obligated Companies which do not necessarily perform the actual recycling of the plastic waste. If the objective is to provide growth opportunities for the recycling industry, the same tax and duty incentives should also be offered to recycling companies so that they can invest in additional equipment and better technology to increase their production. This will also open business opportunities to those who may consider getting into the recycling business. As noted in the previous study, there are only a few recycling companies in the Philippines and since they are necessary participants in the EPR system, the pending legislation should also enable and support their advancement and development.
- B. tax deduction of EPR Expenses on the condition that Obligated Companies meet or exceed their targets, albeit the bill does not define what constitutes “EPR expenses”. For the same reason that tax and duty incentives should also be available to recycling companies, tax deduction incentives should also be offered to recycling companies to spur their growth.

The House of the Representatives counterpart bill is HB 9147 which squarely focuses on single use plastics with the end goal of completely phasing out SUPs using the EPR system. Questions are being raised regarding the harmonization of HB 9147 and SB 2425. It is indeed ideal to have a singular framework with seamless interfacing components, however, there is no indication at this point how both houses of Congress will treat these 2 bills. It is possible that both bills will be referred to a conference committee that will harmonize both bills, or, both bills may pass through the legislative process in parallel resulting to two legislations on EPR with one focusing solely on SUPs.

Some key differences between SB 2425 and HB 9147, apart from the fact that HB 9147 is centered on single-use plastics, are presented in the following page.

- HB 9147 advocates the phasing out of single-use plastics within a stated timeframe by prohibiting their production, importation, sale, distribution, provision and use.
 - The EPR system envisioned in HB 9147 requires that the producers and importers of single-use plastic products are required to organize into a single PRO that will implement EPR Programs that include, among others:
 - i) activities involving recovery schemes for plastic wastes,
 - ii) transportation of recovered plastic wastes to the appropriate recycling, composting, and other diversion or disposal sites,
 - iii) clean up of plastic wastes leaked into coastal areas, public roads and other sites, and
 - iv) establishment of recycling, composting, thermal treatment and other waste diversions or disposal facilities.
 - All producers, defined as any entity that manufactures or distributes single-use plastic products or goods, utilizing single-use plastic products, to any commercial establishment in the Philippines and importers of single-use plastic products, regardless of the size of their enterprise, are obliged to participate in the EPR system through mandatory membership in the PRO
 - Commercial Establishments (defined as establishment or clusters or establishments engaged in commerce or sales of goods and services including market stores, shopping mall outlets, supermarkets, department stores, online stores, grocery stores, drug stores, convenience stores, food chains, restaurants, cafes, bars, sari-sari stores, ambulant vendors with or without stalls, et. al.) are required to undertake the following activities:
 - i) Promote the use of highly reusable, recyclable and retrievable products in their establishments or make available for sale locally made products that are made of organic or compostable materials;
 - ii) Charge customers with a minimum fee of five pesos for every single-use plastic bag regardless of whether it is compostable or for disposal; and
 - iii) Establish in-store recovery program to facilitate return of used plastic products
 - While SB 2425 sets the recovery targets of Obligated Companies at 80%, HB 9147 advocates an eventual 100% recovery or offsetting within five years from the effectivity of the bill
 - As an enforcement mechanism, HB 9147 allows citizen's suit for violation of this law. This means that any citizen can file the appropriate criminal, civil or even administrative actions against any person who violates or fails to comply with the statutory requirements including any public officer who wilfully or grossly neglects to perform a duty specifically required thereunder. This tool appears to close the circuit in promoting EPR has it also gives ordinary citizens a certain level of authority to monitor compliance and thereby participate in ensuring the implementation of the EPR system.
- As may be gleaned from the brief discussion on the differences between SB 2425 and HB 9147, the latter bill, although covering only a portion of the packaging waste problem, appears to have a more defined structure and clearly established tools for implementation and enforcement owing perhaps to the mandatory nature of the proposed EPR scheme and a singular goal of phasing out single-use plastics

V. PROPOSED EPR MODEL

A proposed EPR model for the country was developed by taking into consideration the current solid waste management system in place, the recommendations from the 2020 EPR report, and the inputs of the various stakeholders that were interviewed through the consultations (Figure 9).

This proposed EPR scheme builds upon the already existing SWM infrastructure in place and sees to it that the principle of producer responsibility is applied to address the gaps in the current system rather than to propose measures that may cause major disruptions to already established value chains and end up being impractical to implement.

As recommended in the previous EPR study, the EPR scheme should be applied on all household packaging of any material and as much as possible, service packaging and specific single-use plastic items. For the purpose of the study focusing on plastic packaging, the obliged companies shall include the following entities:

- 1) Manufacturers of service plastic packaging or plastic products, which may include sando bags, labo bags, cling wrap, utensils, and other plastic commodities;
- 2) Manufacturers of products in plastic packaging; and
- 3) Importers of service plastic packaging, plastic products, and products in plastic packaging

It must be emphasized that fulfilment of EPR obligations does not equate to a producer's "license to pollute" but represents the producer's acknowledgement of the

“Fulfilment of EPR obligations does not equate to a producer's “license to pollute” but represents the producer's acknowledgement of the potential impacts that their products have to the environment”

potential impacts that their products have to the environment and serve as a temporary corrective measure until more environmentally-sound materials, design, and practices are incorporated to their products and operations. Producers are also highly encouraged to set reduction targets and redesign packaging in parallel with fulfilling their EPR obligations.

An important feature of the proposed scheme is giving producers, through the PRO, operational involvement in the EPR scheme. This operational responsibility is manifested by providing assistance in the organization and operation of MRFs (Figure 10). In this scheme, funds from the EPR fees collected from the producers are allocated to assist city and municipal LGUs in the establishment and operations of MRF. This gives each MRF an opportunity to be professionalized and establish standardized set-up and operations, a feature which it currently lacks given the current solid waste management system.

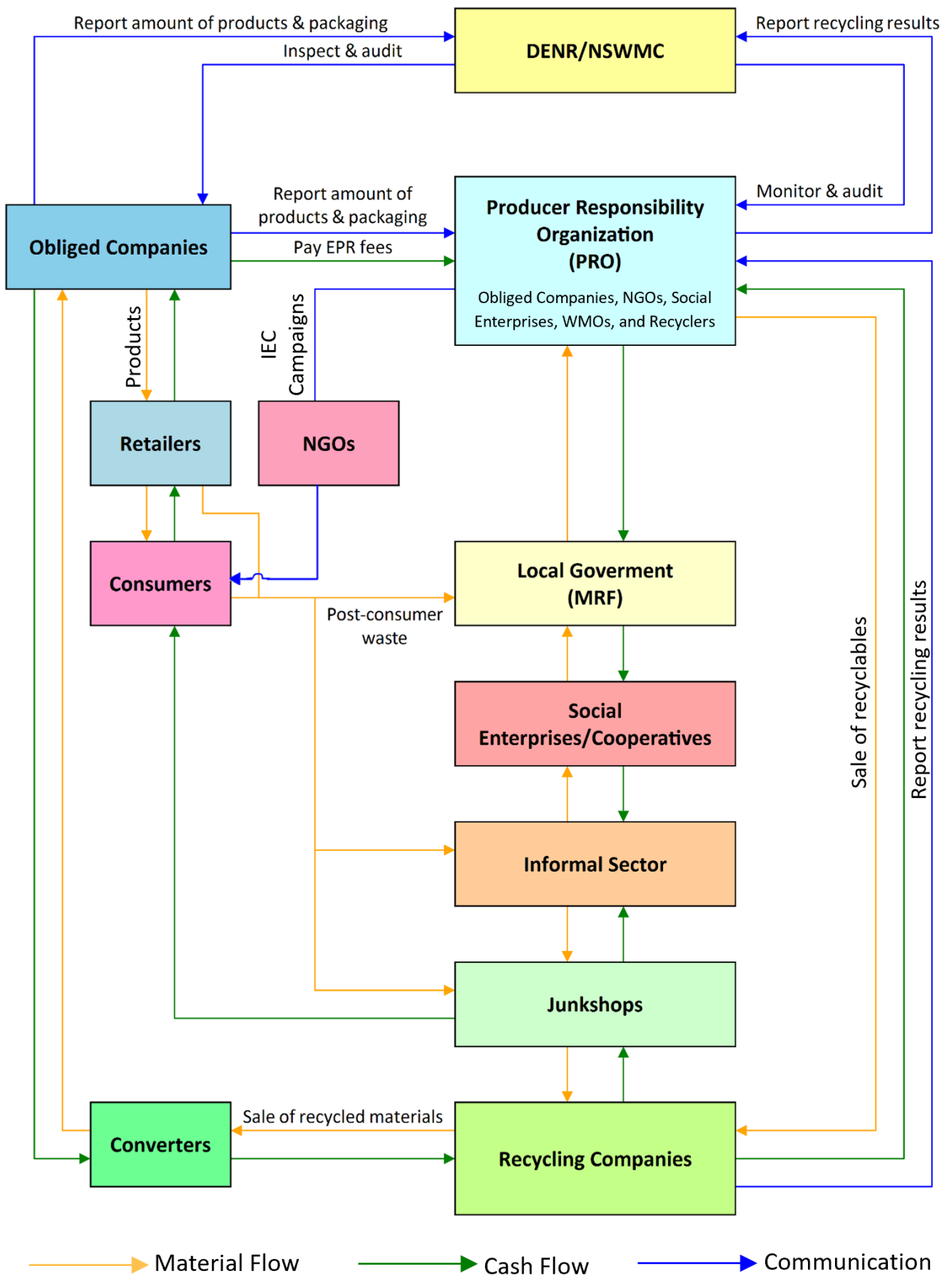


Figure 9. Proposed EPR Scheme for the Philippines

source must be emphasized to the consumers through IEC campaigns from the PRO and be strictly implemented by the LGU. On the other hand, commercial establishments and residential complexes, which may have their own waste collection schemes that are independent of the LGU, are encouraged also to dispose their wastes to the local MRF. As an alternative, they may retain existing agreements and opt instead to report the amount they sorted as well as the recyclates produced by their recycling partners.

The proposed EPR scheme also retains the ability of individuals, entities, and even waste collectors themselves, to sell valuable waste or used goods to junk shops, as they all play a significant role in the recovery of recyclable items. Junk shops are small shops that buy and consolidate valuable waste materials that can later be sold to larger consolidators or recyclers for a profit. In the current SWM system, the type of wastes that junk shops buy are usually recyclable plastics, dry cardboards, metal parts and glass, though the specific types of wastes are greatly dependent on what the larger consolidators and recyclers will buy and where the consolidators and recyclers are located. Junk shops may also opt to sell their recyclates directly to their preferred recycling companies. For those areas where there may be an abundance of recyclates but a lack of market for these items, the local MRF is also suggested to have the capacity to serve as a mini-consolidator that can buy recyclates from nearby junk shops and coordinate their inventory with the PRO. This allows the PRO to monitor sources and amounts of recyclates from across different regions in the country and to plan logistical needs for the transfer of the recyclates to recyclers and consolidators. The EPR scheme shall additionally incentivize the collection of low-value items to further improve their collection efforts and recovery along with high-value items. As a suggestion, the PRO may provide preferential rates for low-value packaging collected by waste pickers and other actors in the waste value chain.

The MRF is proposed to engage the informal sector through the contracting of waste pickers' cooperatives instead of employing waste pickers individually. The informal sector for their part may opt to join established cooperatives or to carry on with their individual waste-picking efforts and selling of recovered items to junk shops. The waste pickers can also form cooperatives with the assistance of social enterprises or LGUs. Waste pickers need to receive equitable income and with their health and safety also safeguarded.

The PRO shall possess ownership of the materials recovered through the MRFs and may sell the recyclates recovered to recycling companies as a means of added revenue. This may be beneficial to recycling companies as the PRO has the potential to meet their volume demand for recyclates, provided that transport of the recyclates from respective MRFs to the recycling companies is provided by the PRO. The processed materials that the recycling companies produce can be used by converters, who produce the packaging that the obliged companies use for their products.

The proposed EPR scheme also recognizes that some producers perform individual recycling themselves or avail plastic credits from entities that offer such arrangements. By doing so, the producers are ultimately responsible for meeting their individual take-back requirements and the processes that each producer take may vary. These plastic credits must be part of a larger strategy of the company to reduce plastic waste from the source to disposal. Furthermore, proper data reporting, documentation, and consolidation must also be ensured by the PRO for regulatory purposes. For the concept of plastic credits to coincide with the objective of EPR, development of upstream solutions, eco-design, and positive social impact rather than simply complying with the take-back requirement of the system must be the focus of conducting this scheme, and the collection of post-consumer waste especially low-value plastics must be the given priority (ValuCred, 2021).

PRO MODEL

The Producer Responsibility Organization (PRO) comprises all EPR stakeholders and holds the collective waste management responsibility. This responsibility is transferred by the obliged companies through paying a fee to the PRO. In doing so, the PRO becomes responsible to meet the take-back targets for the obliged company's packaging. On their behalf, the PRO organizes and finances all collection and treatment of the waste.

The PRO is responsible for the following tasks in the EPR scheme:

- Registration of all obliged companies (in cooperation with DENR)
- Determination and calculation of EPR fees to be paid by all obliged companies
- Collection and administration of the EPR fees while ensuring fair costs and therefore not harming the competitiveness of a participant
- Tendering and contracting recycling of packaging waste
- Documentation of collection, sorting and recycling of packaging waste
- Informing and educating all consumers about the importance of an environmentally sound waste management, alternative materials, waste segregation at-source
- Controlling and verifying all services that have been awarded to service providers, specifically services relating to the fulfilment of collection and recycling by waste management companies.
- Financing all tasks with funds provided by the obligated companies
- Documentation and verification to the supervisory authorities: The PRO must prove that it has completely fulfilled all its tasks and aims by using the paid fees of the obliged companies accordingly. This includes liability for failure to implement the EPR scheme according to the provisions of the legal EPR basis.
- Being open to audits initiated by the state or internally for financial, operational, and legal transparency
- Provision of reports to the general public especially on the volume of plastics produced by each of the obliged companies and efforts done to reduce and prevent waste beyond recycling for transparency and accountability
- Conduct of reviews with DENR to assess effectiveness of current EPR provisions and make necessary adjustments considering market conditions.

The Producer Responsibility Organization is the central and most important element for establishing and operating the EPR system.

The study maintains the recommended PRO setup, which is an **industry-led, non-profit, single PRO** for the Philippines, to ensure a holistic, reliable and fair waste management (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020). The PRO shall be composed of the following groups as listed below and shall follow the structure as shown (Figure 11):

OBLIGED COMPANIES

These are producers and importers who bring packed goods and products onto the Philippine market. These include manufacturers of service plastic packaging or plastic products, manufacturers of products in plastic packaging; and importers of service plastic packaging, plastic products, and products in plastic packaging. These members pay EPR fees proportionate to the type and amount of packaging or product they place in the market.

NGOS AND SOCIAL ENTERPRISES

These entities are specifically selected to be part of the PRO due to their existing initiatives that are aligned with the EPR scheme, such as those in collection and recycling or in mobilizing and ensuring effective involvement of the informal sector. Aside from being part of the Advisory Board, these entities shall be also involved in the operational aspect of the PRO.

WASTE MANAGEMENT ORGANIZATIONS

These companies are involved in the hauling of MSW from household and non-household sources and may also be operators of disposal sites. They are included in the PRO for coordinating the transport and movement of waste materials to and from MRFs.

RECYCLING COMPANIES

These companies are involved with the collection and recovery of materials from the waste stream that converters and other upstream entities can transform into new products that have market value. They are included in the PRO for the coordination of the recycling reports and potential sale of recyclates that are collected by the MRFs.

EXECUTIVE BOARD

The executive board directly manages the operative work of the EPR scheme, defines the financial spending and investments, and make important decisions. This management can consist of one or several persons who can be appointed by the advisory board. For the PRO to be industry-led, it is suggested that the executive board is headed by an industry representative.

ADVISORY BOARD

This includes representatives of the industry, national and local government, NGOs, the academe, and other authorities. These institutions and organizations provide guidance to the PRO as an advisory board and therefore need to be informed about recent developments and innovations as well as similar updates.

Due to the archipelagic nature of the country, establishment of local presence of the PRO in each region shall be considered initially. The PRO may set-up a national office, which shall be the center of all information and decision making, and regional branches that regularly assess implementation of EPR and oversee MRF operations in their respective areas. Large-scale manufacturers can register to the central PRO, while smaller manufacturers can register to the regional PRO representative.



Figure 11. Organizational Structure of the PRO

INFORMAL WASTE SECTOR

Recycling is defined by the United Nations Environment Programme (UNEP) as “any reprocessing of waste material in a production process that diverts it from the waste stream, except reuse as fuel. Both reprocessing as the same type of product, and for different purposes should be included” (UN Habitat, 2021). Recycling of materials done at the point of generation—within industrial areas—is not considered recycling. The recycling industry involves various actors who interact along several point of contact where purchases, processing, and trade of materials occur (Figure 12).

The end-of-chain recyclers, at the top of the plastic recovery chain, are formal establishments with business permits and licenses to operate. They receive materials from apex traders or from both formal and informal MSW collection systems. These establishments also have the capacity to process these into materials and products that have value in the economy either through recycling, incineration with energy recovery, or other recovery process.

Apex traders, meanwhile, are large-scale junkshops that receive materials from intermediate traders or smaller junkshops or

from both formal and informal recyclable collection systems (including waste pickers), store and prepare these materials for onward trading to end-of-chain recyclers. These are also establishments that have permits and are licensed to operate.

Intermediate traders are typically in the form of small neighborhood junkshops who receive materials from both formal and informal recyclable collection systems (including waste pickers), store and prepare these materials for onward trading to apex traders. These traders may or may not be formally registered with the LGU.

Waste pickers, who are at the bottom of the plastic recovery chain, extract recyclable materials from the waste stream to support their livelihood, selling materials into the recovery system. They are usually not formally organized and work individually or as families, although there are some associations in major cities, such as the Balugo-Candau-ay Scavengers Association (BaCaSA) and Balugo-Candau-ay Managinutay Association (BaCaMA) which are associations of waste pickers in Dumaguete City in the province of Negros Oriental.



Figure 12. Hierarchy of the Plastic Recovery Chain (UN Habitat, 2021)

The informal sector significantly contributes to efforts in plastic waste collection, sorting and recycling. Waste pickers are good waste diverters since they can recover a lot of recyclable wastes, at no cost to the government. They pick wastes from public areas, dumpsites and even rivers. Unfortunately, they are also the most vulnerable sector along the recovery chain as they have no power in dictating their selling price and the prices of recyclables are often volatile. In many areas, waste picking is not allowed in the streets and in dumpsites.

The recycling industry in the Philippines is greatly dependent on the international market for recyclable materials. Recycling companies sometimes even import wastes legally in form of sorted and specified material fractions, as locally-generated waste that are suitable for recycling is not available in sufficient and reliable quantities to support the recycling industry in the Philippines (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020). Fragmented and misaligned implementation of the legal framework and geography also affect the Philippine's recycling infrastructure.


From the interviews that were conducted with informal waste pickers and small junk shops from Payatas and Tondo, it was found that they have no trouble collecting high-value plastics such as PET, PP, and HDPE. However, they do not bother with sachets and other low-value plastics because recycling companies do not buy them or their prices are not worth the effort and time to gather and sort them, not to mention the challenge of transport cost of moving these materials. For example, LDPE is lightweight and difficult to collect in large quantities and are usually uneconomical to transport over long distances; thus, this material is basically not recycled at all. Flexible and lightweight plastics such as *labo* bags are usually used to contain food, and thus are contaminated and costly to clean.

It is the goal of the proposed EPR scheme to integrate or formalize these informal workers, who are already experienced and skilled in the sorting and characterizing various plastic waste, in waste management efforts while keeping their source of income. Thus, the proposed EPR schemes gives the informal sector choices in which they can retrieve

waste materials suitably and comfortably, either through continuing their individual waste picking activities or by being integrated by social enterprises or cooperatives. They are also given the opportunity to earn additional income by earning revenue from low-value plastics.

If economic incentives can also be made available to recycling companies and converters in order for them to invest in technology that can recycle or recover value from this low-value plastics, not only will this provide motivation to increase collection of

low-value plastics but the informal waste pickers and small junk shops who often come from low-income groups will have additional revenue. The government can further enable the waste pickers and junkshops by providing them with the necessary equipment, such as *karitons* and trucks for hauling, as well as by providing financial assistance that these waste collectors can use as capital. The government should also provide training to waste collectors for them to better understand the different types of plastic and how to segregate.



Junk shops and waste pickers that were interviewed expressed that the EPR scheme would be helpful for them since it would provide a market for low-value plastics.

With an EPR scheme in place, not only would junkshops and waste pickers have an additional viable source of income, they would also actively ensure that low-value plastics, along with high-value plastics, are collected and kept out of nature.



ROLES OF STAKEHOLDERS

The involvement of several key stakeholders is crucial to the success of any EPR scheme. Furthermore, roles of each stakeholder must be properly defined to enable collective effort towards the implementation of an appropriate and effective EPR system in the country.

NATIONAL GOVERNMENT

- Craft the legal EPR framework and ensure that all roles and obligations of involved stakeholders are well-defined and continuously achieved.
- Establish specific goals and targets along with mechanisms to monitor the compliance of obliged companies.
- Provide support for other involved stakeholders in the implementation of an EPR scheme. For instance, it should provide financial support and capacity building to the local government units (LGUs) and must assist them in providing adequate provisions for MRFs, and conducting training programs for SWM planning and operation, waste minimization and utilization, and plastic field surveys.



This also includes funding/investing in necessary infrastructure such as recycling facilities. Most recovered PET plastics are converted to pellets then exported to countries that have the appropriate recycling facilities. Investing in the necessary infrastructure would lessen, if not eliminate, the need to export plastics.

- Fund research and development for plastic waste utilization and encourage the expansion of the secondary materials market to supporting businesses

LOCAL GOVERNMENT UNITS

- LGUs shall oversee the implementation of the EPR system and compliance to wastes segregation, collection, recovery, transport, recycling, and disposal for plastic wastes, within their jurisdiction.
- All LGU and barangay officials should be responsible for continuously improving plastic waste management in their area through launching initiatives and projects, addressing gaps in the current infrastructure, and partnering up with other sectors such as the business sector and civil societies with similar goals.
- Encourage public participation and influence communities to act collectively for the successful implementation of an EPR.



GOVERNMENT AGENCIES



- The **DENR** shall primarily serve as the arm of the National Government to supervise and oversee the effective implementation of the EPR scheme with the support of other government agencies.
- The **DENR**, **NSWMC**, the **Provincial Government Municipal Environmental and Natural Resources Offices (PGENRO)**, and **local Municipal Environmental and Natural Resources Offices (MENROs)** serve as the extension of the national government in dealing with environmental concerns including plastic waste management.
- The **NSWMC**, being directly under the Office of the President and chaired by the DENR Secretary, and the **DENR** itself are expected to be the national authority in waste management, tasked to properly implement R.A. 9003 and all environmental laws. They are expected to assist in the creation of policies for an EPR scheme that are aligned with the current environmental regulations.
- The **DENR** shall be responsible for auditing and receiving required data from both obliged companies and recycling companies in the proposed EPR set-up.
- The **NSWMC** may formulate and update the list of non-environmentally acceptable products and packaging materials (NEAP) subject for banning and phase-out and assess more products to be considered in the phased implementation of the EPR scheme.
- The **PGENRO** per province and **MENRO** assigned per city or municipality have authority in waste management for their respective localities. A national law, however, has yet to be passed for the establishment of the office per LGU. Currently, there is no mandated MENRO designation and the tasks of the MENRO are usually assigned to the LGU's Disaster Risk Reduction and Management Office.

Other government agencies that are not directly involved in solid waste management may still also be involved for the holistic implementation of the EPR scheme.

- The **Department of Interior and Local Government (DILG)** for their part shall serve as advisory bodies to the LGUs for a proper integration to an EPR scheme.
- The **Department of Trade and Industry (DTI)** may promulgate standards on the proper labelling of products to assist consumers in determining the proper disposal of items. DTI is also expected to provide protection to consumers by stabilizing the prices of necessities and prime commodities and by prescribing measures against undue price increases that may result from the implementation of the EPR law.
- The **Department of Education (DepEd)**, **Commission on Higher Education (CHED)**, and the **Philippine Information Agency (PIA)** may also assist in IEC campaigns to further inform consumers, especially the youth, on how to actively participate in the EPR scheme.
- The **Bureau of Customs** can manage and address smuggled plastics.

OBLIGED COMPANIES



- Pay a contribution fee to the PRO or through individual recycling to manage their waste.
- Meet targets in accordance with the regulations and report quantities of products and packages they release to the market, to government authorities.
- Manufacturers or producers are urged to adopt strategies and invest in technologies that can reduce and eliminate harmful impacts of their products to the environment even as early as the design stage.
- Find means to improve the reuse and recyclability of their products to avoid placing burden on consumers and recyclers at product's end of life.

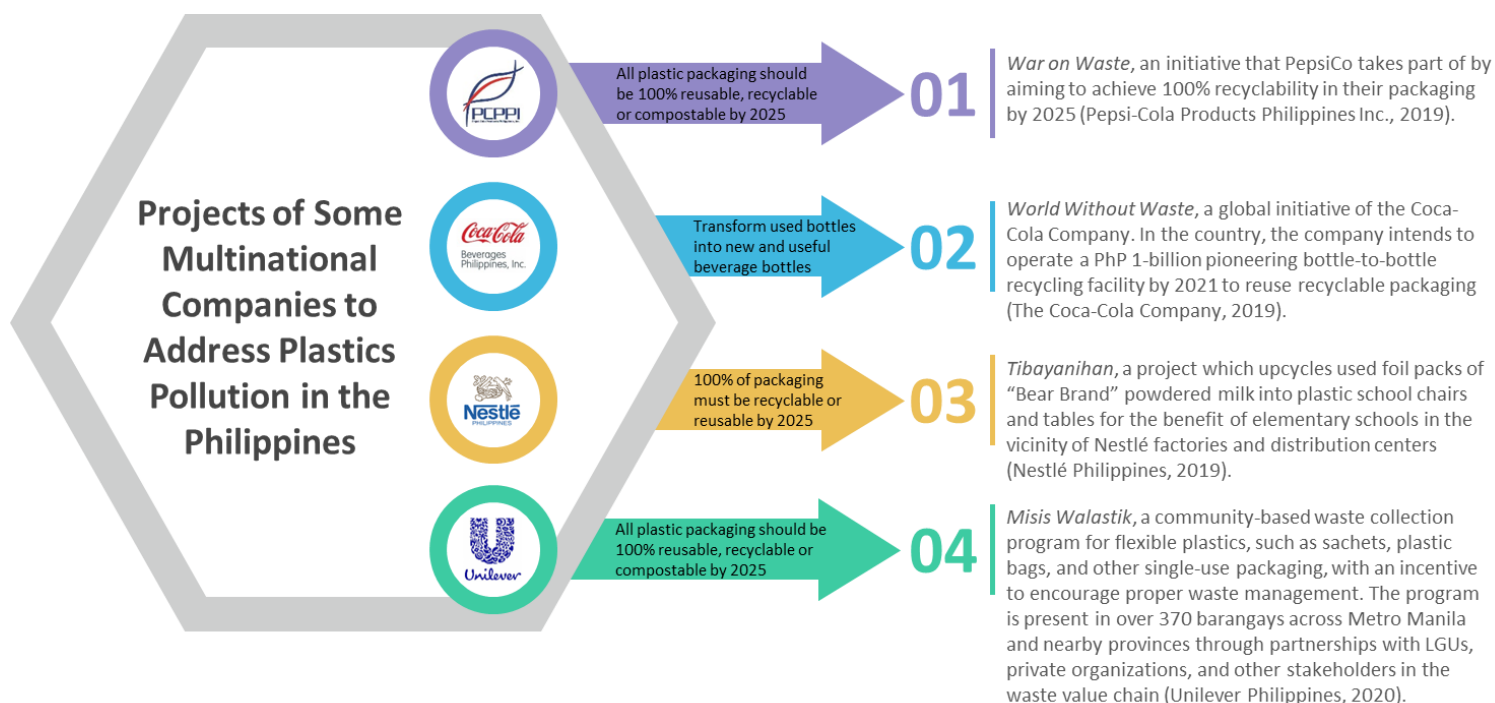


Figure 13. Projects of Some Multinational Companies in the Philippines to Address Plastic Problem (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)

RECYCLERS AND CONSOLIDATORS



- Recyclers and consolidators are responsible for collecting recyclables and recovered materials to be transformed into new products and raw materials helping in the diversion of waste from disposal sites or open environment.
- Partner with the PRO for providing aforementioned services, which should conform to the standards and guidelines set by government agencies and the PRO in order to ensure high quality recycling.

WASTE COLLECTORS



- Waste collectors, whether formal or informal, play a vital role in the success of an EPR scheme. They serve as the link between waste generators to waste disposal sites, recyclers and consolidators.
- Some cities and municipalities directly handle the collection of waste within their area of jurisdiction while others engage the services of a private third-party waste collector.
- Ensure that each component of the waste stream reaches its intended recipient and does not leak into the environment and cause pollution. This can be achieved by proper waste segregation. With the help and participation of waste generators, segregation of waste can be easier for the waste collectors.

There are instances where some collection crew fails to check if waste segregation is followed and may unintentionally mix them together at the collection site. Moreover, segregating the collected wastes is not part of their job description, hence some collectors may find the additional task burdensome. Segregation-at-source then is an important feature for EPR to work.

SCHOOLS AND UNIVERSITIES



- Educational institutions play a major role in the promotion of the EPR scheme as a means to achieve sustainability in our society. Schools and universities are some of the best outlets for promoting solid waste management education, raising awareness and educating the public about the impact of use and improper disposal of waste on the environment.
- By developing programs, workshops, seminars and other awareness-raising campaigns, children and youth can be educated and become future productive members of the society with the desired consumer values and good waste management practices.
- Universities and researchers specifically also play a key role in the continuous development of various scientific, social, and economic approaches to address plastic waste pollution through their research. Research geared toward these aspects should be given much attention, encouragement, and support from both the public and private sector.

CIVIL SOCIETY

- Many non-Governmental Organizations (NGOs) and social enterprises in the Philippines are quite active in the field of plastic waste management. They play an important role in supplementing the efforts of the national and local governments and providing perspectives to the PRO to address waste management concerns.
- Provide a wide variety of programs to support physical collection and recycling services especially in remote areas and advocate and create awareness to consumers.
- By conducting programs such as the “Aling Tindera” by PCX, “Basura Bangka” by Pure Oceans, “Waste Watchers” project of Save Philippine Seas, and “Bin Exchange” by Clean Our Oceans, people can be encouraged to proactively recycle and be responsible for the waste they generate and even be financially incentivized for their efforts. Such NGOs involved in environmental protection and mobilization of the informal sector shall be part of the PRO.
- The integration of informal sectors shall also be assigned to the civil society in the implementation of the EPR system.



CONSUMERS

- Consumers form the market's core and are therefore perceived as direct contributors to plastic waste leakage in the environment. However, proper implementation of policies, capacity building, and availability of waste management facilities play a bigger role in the participation and compliance of consumers to waste management laws such as [R.A. 9003 \(Ecological Solid Waste Management Act of 2000\)](#).
- Consumers are expected to actively participate in the EPR scheme and in established solid waste management systems and programs. Through this, individuals can be educated about strategies, correct practices and benefits of proper waste management, segregating, handling, collection and disposal of waste.
- They shall also be encouraged and motivated to practice waste minimization by opting for recyclable or unpackaged goods and products, as well as reusing and recycling packaging and products as often as possible in their homes and areas.
- Waste separation is critical because high-quality recycling of packaging materials requires that packaging waste be collected separately from residual waste; the better the fractional collection, the easier and less expensive the subsequent sorting. Hence, separation at source by consumers is highly important in transitioning to sustainable management of packaging waste.



- Consumers shall also be encouraged to participate in programs such as take-back programs, deposit-refund schemes, plastics in exchange for currency or commodity and biodegradable waste converted to either biomass energy or compost.
- Some short-term resistance is expected from the side of consumers due to changes in established consumer habits. Thus, IECs provided by the government and the PRO, as well as consumer groups such as the [Nationwide Association of Consumers, Inc. \(NACI\)](#), may further convince everyone to play a role in addressing plastic pollution and waste in general by participating in the EPR scheme

“Proper implementation of policies, capacity building, and availability of waste management facilities play a bigger role in the participation and compliance of consumers to waste management laws”

ROADMAP TOWARDS A FUNCTIONAL EPR SCHEME IN THE PHILIPPINES

To implement and establish a robust EPR system, it is essential to include all stakeholders in the supply chain and assign clear responsibilities to each of them, designate unambiguous rules to the obliged companies and guarantee a level playing field. Furthermore, capacity building is needed to create an aligned understanding of EPR. The implementation plan for an EPR scheme in the Philippines is to build the foundation for EPR with focus on capacity building. The idea is to prepare a medium-term system change on an aligned understanding, by first introducing the concept and form collaborations, then by focusing on capacity building, and stimulating a holistic and basic waste management which can be organized according to the EPR scheme. It should be the aim to establish an EPR legislation first, which provides a transition period leading toward a mandatory EPR framework within three years of enacting the legislation.

When the legislation for EPR framework is in place, capacity building on EPR should immediately be done to prepare a medium-term system change on an aligned understanding, by first introducing the concept and form collaborations among stakeholders.

After capacity building, forming working- and discussion groups incorporating all stakeholder groups should follow to draft and elaborate plans, strategies, and next steps while a voluntary EPR scheme is being set-up. Within the 3-year transition period, the legal framework, as an amendment to existing laws or under new legislation, should be developed to implement EPR as a mechanism to finance and organize plastic packaging waste collection, recovery, and disposal.

TIMELINE AND PROPOSED ACTIVITIES FOR EPR IMPLEMENTATION

-  **WITHIN 1 YEAR (IMMEDIATE START)**
 - Capacity building on EPR in order to close knowledge gap and create collective, aligned understanding
 - Determine unnecessary plastics in packaging and improve packaging design
 - Public awareness and communication
-  **WITHIN 2 YEARS**
 - Build EPR working group
 - Prepare voluntary EPR set-up
 - Implement data collection
 - Implement holistic waste management
 - Develop and impose nationwide minimum standards for plastic packaging waste management
 - Public awareness and communication
-  **WITHIN 3 YEARS**
 - Prepare legal framework for mandatory EPR (can start right after legislation)
 - Determine EPR Fee Structure
 - Start mandatory PRO
 - Public awareness and communication
-  **WHEN MANDATORY EPR IS IN PLACE**
 - Run mandatory PRO
 - Control and enforce mandatory EPR scheme
 - Assess and optimize mandatory PRO
 - Public awareness and communication

When mandatory EPR comes into force, the PRO should operate to enforce the mandatory scheme. Registration, data collection, and strict monitoring for all obliged and voluntary companies and PRO should be implemented by DENR in order to have reliable data as basis for system planning and evaluation. After 2 years of implementation, the EPR and PRO scheme should be assessed in terms of compliance to the legal framework and optimizing operations. DENR and other authorities can also decide whether one single non-profit PRO is suitable and working well for the Philippines or not in which case multiple PROs can be considered.

Obliged companies should start with determining unnecessary plastics in their packaging products for elimination and problematic packaging for switching to easy-to-recycle packaging. Within 2 years of transition period, holistic waste management should be developed and implemented in relation to the EPR scheme. This involves understanding present waste generation and management situation, and development and implementation of minimum standards

nationwide such as standards for packaging label materials, labeling system, recycled content targets and standards, waste diversion rates etc. Waste management infrastructure should also be improved by setting up sorting facilities with proper equipment, appropriate for the local context and according to developed standards. Incentivizing increase in recycling capacity for all resins (e.g. PP, PE, PET) should also be done to encourage investment in recycling facilities.

Increasing public awareness and communication activities by LGUs, community leaders and waste management operators should be done in parallel with all the above activities in order to crate behavioral changes and waste management improvement among the public sector.

The summary of objectives, activities, targets, and identified actors to facilitate the development of mandatory EPR in the Philippines are shown in the succeeding pages.



WITHIN **01** YEAR (IMMEDIATE START)

Determine unnecessary plastics in packaging & improve packaging design

- Identify unnecessary plastics – those that are not necessary for product integrity – and evaluate its elimination from the packaging.
- Design out problematic packaging by switching to easy-to-recycle packaging.
- Generate data of unnecessary plastics in product packaging and ways to design this out.

Public awareness and communications

- All measures below have to be pushed parallel, and simply and easily communicated to attract attention of the communities
 - Create awareness, root behaviour changes in daily routines
 - Actors: LGUs, community leaders, waste management operators



Capacity building on EPR in order to close knowledge gap and create collective, aligned understanding

- Present and discuss reports with relevant private sector stakeholders (e.g. local and international producer and importer, packaging user), government authorities of all levels (e.g. barangay, LGU, NGAs), waste management operators, and other civil society organizations
- Align understanding of an EPR scheme, PRO, especially its responsibilities, mechanisms and entities across all relevant parties involved
- Actors: Civil Society Organizations in collaboration with other partners



Implement data collection on waste management

- Develop, roll out and enforce holistic, comprehensive data collection system, especially in waste management sector, building on existing data management schemes and sources
- Acquire data for production, waste generation, collection, sorting, recycling, and final disposal
- Present situation needs to be clear, to identify weak points and develop an adequate EPR system upon given structures
- Actors: DENR in coordination with all stakeholders, especially LGUs and waste management operators



Build EPR working group

- Form working- and discussion groups incorporating all stakeholder groups
- Jointly draft and elaborate plans, strategies and next steps
- Actors: DENR with representatives from all stakeholder groups (e.g. LGUs, NSWMC, companies)

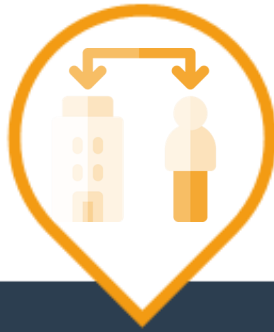
Implement holistic waste management

- Set up nationwide sorting facilities with proper equipment, appropriate for the local context and according to developed standards
- Meet sorting obligations, either through manual labor or simple technically supported labor, which is recommended for metropolitan areas with a high quantity of waste generation
- Actors: LGU, waste management operators, technically and financially supported by the government
- Elaborate and develop individual concepts for treatment, consider also alternative recovery technology on a very small scale, where recycling is yet to be introduced
- Incentivize increase in recycling capacity for all resins (e.g. PP, PE, PET) to encourage investment in recycling facilities
- Figure out best possible recycling, treatment according to barangay characteristics
- Actors: Local waste management operators, LGUs



WITHIN **02** YEARS (MEDIUM-TERM)

Prepare voluntary EPR set up



- Allocate first roles and corresponding responsibilities: DENR, LGUs, private sector coalition
- Clear roles and responsibilities within a voluntary EPR
- Actors: DENR in coordination with initiating private sector

Develop and impose nationwide minimum standards for plastic packaging waste management



- Present and discuss collected data and present waste management situation with government authorities and waste management operators
- Identify gaps and develop measures and standards
- Actors: DTI and DENR in coordination with all stakeholders, especially waste management operators
- Training to facilitate implementation of standards
- Build capacity and align waste management outcome e.g. basic separation targets for all materials
- Actors: LGU, waste management operators, technically and financially supported by the government

WITHIN **03** YEARS



Start mandatory PRO

- Register obliged companies to PRO
- Create a proper, well-prepared PRO to achieve aims of the EPR framework
- Actors: DENR in coordination with other stakeholders



Prepare legal framework for mandatory EPR (can start right after legislation)

- Develop the legal framework (as an amendment to existing laws or under new legislation) to implement EPR as a mechanism
- Finance and organize packaging waste collection, recovery and disposal
- Solve the first step for a specific EPR packaging waste framework based on the legal framework
- Determine the EPR fee structure
- Actors: Competent authority in discussion with private sector



CONSUMERS

Consumers are often perceived as the direct contributors to plastic consumption and plastic waste leakage to the environment. However, proper implementation of policies, capacity building, and availability of waste management facilities play a bigger role in the observance of consumers to the EPR scheme. Consumers, for their part, are expected to cooperate with local solid waste management programs, including practices of reduction of waste generated, proper waste segregation and disposal.



01 DUTIES WHILE LEGISLATION IS PENDING

Consumers may assess their household's current waste disposal methods, review their buying habits and determine how to improve their current practices. They shall network with neighbors/barangay about the existing solid waste management in their community and actively participate in discussions/forums regarding compliance with associated legislation.

02 DUTIES DURING THE TRANSITION PHASE

During the transition phase, consumers must already be familiar with durable, economic, and sustainable products to replace the disposable, non-eco-friendly products they are currently using to minimize the use of single-use plastic and reduce generation of non-recyclable waste.

Consumers should now be able to apply proper waste management practices and dispose waste according to the standards and regulations set by the government. 3Rs (Reduce, Reuse, and Recycle) shall be practiced within the household to maximize the useful life of packaging and products and minimize generation of waste. Individuals shall now be able to consistently and correctly sort waste prior to disposal.

Information about the proposed EPR scheme shall be available to the consumers and their responsibilities shall be clearly defined.

03 DUTIES WHEN THE LAW IS FULLY IMPLEMENTED

Upon implementation of the EPR Scheme, the consumers shall be fully informed and knowledgeable of the regulations and standards set by the government, as well as their responsibilities and role in the system. They shall comply and participate in the established solid waste management system and the programs developed by the national and local government.

NATIONAL GOVERNMENT

The government shall put into place the regulations of an EPR scheme. Corresponding roles and targets for the PRO (or system operator) and other involved stakeholders should be defined. Such roles and targets have to be communicated to involved stakeholders. Furthermore, targets must be specified and take into account the current situation of the country such as economic and technical feasibility, the geographic aspects and present state of the waste management infrastructure. For obliged companies, the government should allow and support a mandatory scheme with phased implementation (transition period) and/or a voluntary scheme during the transition to an EPR scheme (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020).

01 DUTIES WHILE LEGISLATION IS PENDING

The DENR together with representatives from stakeholder groups shall organize working groups involving all stakeholders to finalize plans, strategies and propose succeeding steps as well as gather insights and best practices for the EPR scheme development prior to its full implementation. Specific targets on recycling and waste collection across transition periods including types of packaging to be covered under the system and the fee rates to be paid for by producers to PRO can be discussed further and agreed on. Roles and responsibilities of a voluntary EPR set-up at this time may be defined further (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020).

Concurrently, the government bodies including DENR and the LGUs should recognize present gaps or issues in the waste management situation through development of a data collection system, identification of gaps and preparation of action plans to address those issues/gaps. A MENRO has to be set up per municipality or city who will be in charge of creating plans for local solid waste management and proposing waste handling infrastructure. A reliable waste management system for collection, sorting and recycling of plastic packaging on a large-scale basis is crucial to an EPR scheme. The government shall provide technical and financial support to waste management operators through legislating material sorting at source and by equipping communities with the necessary tools (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020).



At this stage, the appointment of the PRO and obliged companies should already be established in preparation for implementation.

The government should encourage the expansion of the secondary materials market by supporting businesses as well as R&D. This will address potential inventory cost of recyclates to the PRO and contribute to its financial sustainability.

02 DUTIES DURING THE TRANSITION PHASE

During the transition phase, the national government through the DENR and with the assistance of the Department of Science and Technology (DOST) should support pilot projects that will help develop a knowledge base on proper waste management practices and for developing data collection and system and relevant mechanisms such as a register of obliged companies (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020).

In collaboration with the industry sector, the national government through the Department of Finance may develop programs that incentivize obliged companies with their voluntary initiatives to improve the recyclability and reusability of their products and product packaging and to facilitate transition to a mandatory scheme.

03 DUTIES WHEN THE LAW IS FULLY IMPLEMENTED

Upon implementation of an EPR scheme, the government should continue to monitor compliance of obliged companies, PROs and other involved stakeholders to establish regulations and targets. The government should review the accomplishments and impact of the EPR framework and amend the laws as needed. In addition, it should continue to communicate the importance of EPR and create awareness to the public.



BUSINESSES

An EPR scheme is necessary to create a circular economy for packaging material. One of the most critical steps in implementing an EPR scheme is to identify the obliged companies, i.e., define the producers and importers. These industry players (that introduce packaging to the market) will fund the collection and processing of post-consumer packaging. Through an EPR policy, collection and processing can be scaled and effectively implemented throughout the country.

01 GUIDELINES FOR ALL KEY PLAYERS IN THE PACKAGING VALUE CHAIN



RAW MATERIAL SUPPLIERS, MANUFACTURERS, AND CONVERTERS OF PACKAGING MATERIAL

The EPR encourages manufacturers to conserve raw materials. The use of recyclates is critical to close the loop in a circular economy. The design of packaging will determine the reusability and recyclability of post-consumer packaging waste. Manufacturers can start introducing a minimum portion of recycled material in their products. Packaging should use less virgin material and more recyclates as much as possible.

**Use mono-material
as much as possible**

**Use less virgin material
and more recyclates**



PRODUCERS AND IMPORTERS OF PACKAGED GOODS /OBLIGED COMPANIES (USERS OF PACKAGING MATERIAL SUCH AS FMCGS)

Producers and importers should be responsible for the reduction of the environmental impact of their products. To ease the transition to a mandatory EPR scheme, producers and importers should devise strategies to gradually lessen their consumption of packaging material. Producers can initiate five (5) steps in preparation for the implementation of legislation (Figure 14).

First, producers may eliminate unnecessary packaging for their products. Second, producers should improve packaging design. Obligated companies can demand for improved packaging such that it is reusable, recyclable, or compostable.

Third, producers must improve product labels to help ensure that their packaging waste can be properly sorted and recycled. As an example, each component of a plastic bottle (PET bottle, PVC label, and PP bottle cap and neck ring) should have appropriate and legible labels. It is important for these different plastic types to be segregated prior to recycling. Domestic producers and importers (monitored by DTI and Bureau of Customs, respectively) should ensure that their products follow this standard. Product labels can also include information or a link to an online platform on how to recycle the packaging, i.e., where to bring recyclables, ways to upcycle certain materials, and how to segregate. Producers, through their product labels, can educate consumers on their role in a circular economy. Consumers should be made aware of how they can support/promote the circularity of material flow.

Next, certain industries such as FMCGs can eventually eliminate the need for packaging of certain products entirely by establishing refilling stations.

Lastly, since packaging for some products cannot completely be eliminated, obliged companies should manage post-consumer packaging to ensure that it is collected, sorted, and recycled (or disposed) appropriately. Under an EPR scheme, producers pay a fee to the PRO to manage the post-consumer packaging. Without legislation mandating EPR or during the



Figure 14. Five (5) steps producers may take in preparation for EPR implementation

transition period, they may opt to organize individual recycling systems/ individual producer responsibility systems. One option is through Reverse Logistics, which is the process of collecting goods or materials from the end-user/consumer or distributor/retailers for the purpose of capturing value or proper disposal (Figure 14). In this process, post-consumer packaging is treated as a resource instead of waste.

It must also be emphasized that producers are encouraged to continuously develop solutions and improve packaging designs and recyclability through research, gathering feedback from consumers, and keeping lines of communication between multiple stakeholders such as waste management organizations, social enterprises, NGOs, and recyclers open.

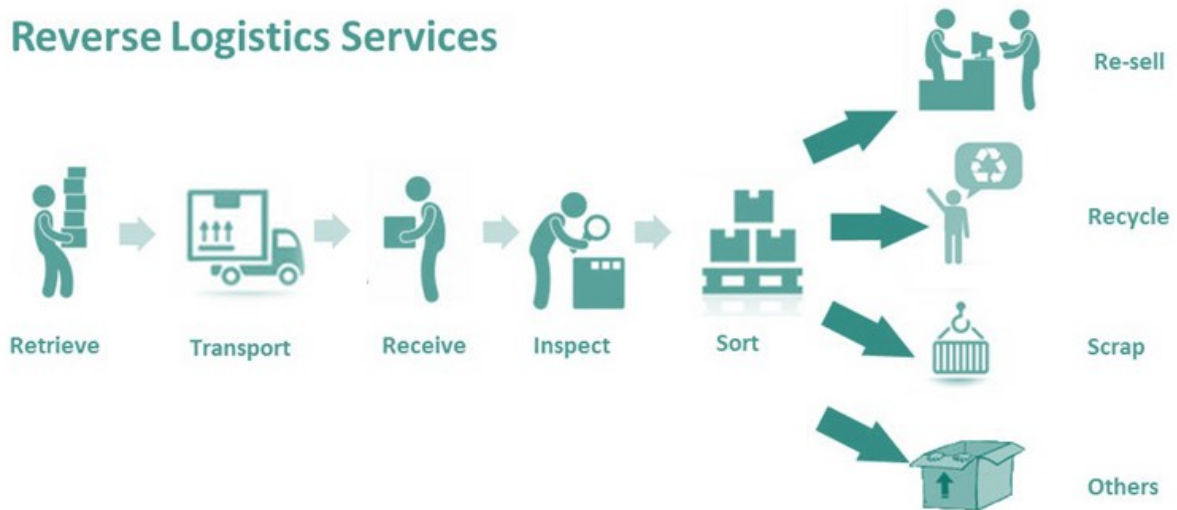


Figure 15. Diagram of a Reverse Logistics (Silicon Safe Pack, n.d.)

Obligated companies should also report data on production, waste generation, collection, sorting, recycling, and final disposal to the government so that legislators and concerned government agencies are guided on the present situation and be able to identify weak points and gaps in the current solid waste management system so that they can develop and implement an adequate EPR system later on.



DISTRIBUTORS AND RETAILERS OF PACKAGED GOODS

As the stakeholder that interfaces with the end consumer, distributors and retailers, in partnership with the PRO, may help in educating consumers on proper segregation/ solid waste management/ the different types of packaging materials. They may also serve as collection points for post-consumer waste that have been segregated at the source. Either they collect certain types of waste, or they provide separate bins for different materials such as glass, paper, and plastics.

Educate consumers on how to recycle & proper waste segregation

Manage post-consumer packaging (e.g., collection point)

Mechanisms have to be in place to make sure that it will be financially and operationally feasible for the PRO to take on this responsibility. This mechanism will include, but not limited to, carefully formulated pricing mechanism, meticulous monitoring and documentation of amount of sorted wastes, other safeguards against free riders, and providing additional revenue streams. Although the PRO's fee-based structure will support downstream solutions (e.g., increased collection, higher recycling rates), the EPR policy's objectives also include upstream solutions such as improved product design.

Sources of revenue identified for the proposed EPR scheme are mainly licensing fees and EPR fees from the obliged companies and sale of recyclates to recycling companies, although the PRO may also receive grants from external institutions (Table 3). In principle, the fees and other sources of revenues of the PRO should be enough to cover all the expenses incurred in implementing its duties as defined in the proposed EPR Scheme (Table 4).

Table 3. Sources of Revenue of the Proposed EPR Scheme

Sources of Revenue	Description
EPR Fees from Obligated Companies	These depend on the material and total weight of the packaging introduced to the market.
Sale of Recyclates	Revenue from sale of recyclates sourced from the MRFs to recyclers
Grants	Funding from the Government, Financial Institutions, and other funding entities



The EPR fees that obliged companies shall pay will also be **eco-modulated**, which means that the final amount that each company shall pay will depend on the recyclability of the packaging material. Packaging that is easy to recycle corresponds to reduced EPR fees or bonuses, while packaging that cannot be easily recycled can entail increased EPR fees or maluses (WWF International, 2020). The factors that may define EPR fees are presented (Table 5).

Table 4. Capital and Operational Expenses of the Proposed EPR Scheme

Expenses	Description
Capital Expenses	
Direct Cost	Costs of procurement and installation of process equipment, instrumentation and control measures, electrical equipment and materials, buildings, service facilities, and land-related expenses such as site development incurred in setting up MRFs
Indirect Cost	Costs of engineering and supervision, construction expenses, payment to contractors, and contingencies in setting up MRFs
Working Capital	Expenses incurred to commence operation of PRO and MRFs
Operational Expenses	
Transportation	Costs of moving recyclates from the LGU to the MRF and from the MRF to recycling companies
Payment to Social Enterprises and Cooperatives	Costs for the professionalization and compensation of informal sector workers engaged by social enterprises and cooperatives
Employee Salaries	Compensation for full-time and part-time workers employed directly under the PRO
Rent and Utilities	Payment for rent and use of electricity and water
IT Platform and Maintenance	Set-up of IT infrastructure and database/registry maintenance
Third-party Audit Expenses	Costs of contracting the services of a third-party auditor for
Miscellaneous Expenses	Other expenses deemed necessary by the PRO

The EPR fees shall be charged to obliged companies on a yearly basis depending on the tonnage of plastic products and packaging that each company have set out to the market per fiscal year. Sample EPR fee computation per item of packaging provided by Citeo, the PRO in France, is lifted from the previous EPR report to serve as a reference for the ranges of EPR fees to be paid by the obliged companies, although the actual EPR fees to be based on the EPR model to be implemented in the Philippines will definitely be different.

The criteria to determine eco-modulation as well as specific values for the basic fees, bonuses, and maluses can be set by the advisory board of the PRO and approved/monitored by DENR with the assistance of DTI. The EPR fees are ideally published and accessible to the public. These also need to be reviewed on a regular basis, perhaps every five years. As it is, eco-modulation is easier to implement with a single PRO, as compared to having several competing PROs. The level of sophistication and complexity of setting EPR fees may be determined through a more detailed study of its application in the Philippine setting.

Table 5. Factors in Computing EPR Fees

EPR Fee Component	Description
Basic Fee	These are solely based on weight and type of packaging material. Materials with higher recyclability shall be given lower basic fees than those with low recycling potential. For packaging that have various components, such as PET bottles which have PP caps and PVC labels, each component shall be assessed individually and shall be charged their corresponding basic fees.
Bonus	These are reduction in fees or discounts applied for packaging that have more recycled content and less virgin material in its formulation, use less material overall, have designs that further increases its viability for recycling, or have proof of compostability.
Malus	These are penalties applied for packaging that have properties that reduce its viability for recyclability, such as being multilayered or by containing additives such as colorants in the case of PET bottles.
Eco-modulated Total Fee	This corresponds to the total fee that is paid per material once all applicable bonuses and maluses are applied to the basic fee. Total Fee = Basic Fee × (100% - Bonus) × (100% + Malus)

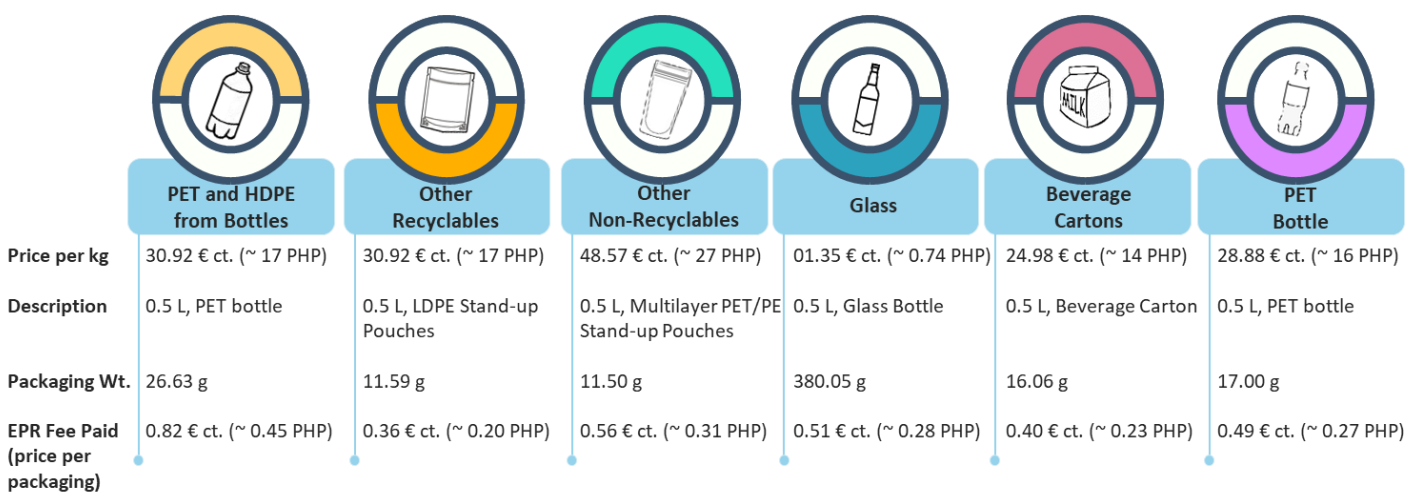


Figure 15. Example of EPR fees for different packaging types (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)

The EPR scheme highly encourages obliged companies to develop upstream solutions to reduce or even eliminate the use of plastics in their products. Doing so also gives them another means of minimizing EPR fees that are charged to them. Some practices that obliged companies may look further into are suggested in this section.



REFILLING STATIONS

The practice of refilling allows consumers to purchase household products at lower prices when they bring their own clean empty containers for refill. Several establishments, non-government organizations, local manufacturers, and even small sari-sari stores have already started practicing the refilling concept of product distribution. By allowing consumers to reuse their containers for refill, this also given the obliged companies a benefit to reduce the need of purchasing individual plastic packaging to contain their products and conversely provide lower EPR fees.



REPLACING SACHETS WITH BOTTLES AND MAKING IT RECYCLABLE

Bulk buying is seen as the obvious alternative to buying products in individual packaging. With products bought in bulk, less packaging is used which becomes plastic wastes. Personal care products, cleaning supplies, vitamins, office supplies, and food are among the items that can be bought in bulk (Davis, 2014). Consumers can get more of the products if they bought in bulk compared to buying in tingi while spending the same amount. This also results to increased savings since buying in bulk has lower prices of products per piece.

Bottle containers, especially those made from HDPE and PET, can also be sold to junk shops or recycling facilities. Buying in larger containers also lessens the inconvenience of the consumers in going to and from the stores just to buy the products.

However, products in plastic bottles are generally harder to transport compared to those in smaller plastic packaging. There is a need of secondary packaging such as plastic sando bags to lessen the burden of transporting the bottled products. The purchasing power of consumers to buy products in bulk is an important factor to consider, however. Buying in portions is still more viable for low-income considering their day-to-day living. Most low-income stakeholders also prefer to buy in sachet since it is mostly available in sari-sari stores which are easier to access. Bulkier products, on the other hand, can mostly be found in grocery stores, department stores, and malls, many of which are not readily accessible to the stakeholders living in far-flung areas.

At present, companies offer both options to consumers, who have the freedom to choose what suits their needs. Obligated companies may consider eventually replacing low-value plastic packaging with high-value plastic packaging and replacing multi-material packaging with mono-material packaging while keeping the purchasing power of their consumers in mind. By doing so allows them to attain lower EPR fees.

SUPPORT THAT THE GOVERNMENT MAY PROVIDE TO BUSINESSES DURING THE TRANSITION PERIOD

The National Government through relevant departments and agencies may offer economic incentives to encourage and ease the burden of private entities to modify their processes and operations that are compliant to an EPR scheme. The succeeding table shows some of the incentives available to the private sector to promote recycling (Table 6).

Republic Act No. 10771, or the [Philippine Green Jobs Act of 2016](#), also provides additional incentives for those engaged in waste reduction activities. Green jobs are defined as employment that contributes to preserving or restoring the quality of the environment, be it in the agriculture, industry or services sector. Specifically, but not exclusively, these include jobs that help to protect ecosystems and biodiversity, reduce energy, materials and water consumption through high efficiency strategies, decarbonize the economy, and minimize or altogether avoid generation of all forms of waste and pollution. Through this Act, obliged companies can avail of a special deduction from taxable income for skills training and research and development, and tax- and duty-free importation of capital equipment.

In the absence of a PRO during the transition to a mandatory EPR scheme or while legislation is pending, the DTI and Bureau of Customs can begin to establish a register of producers and importers that will later on be managed by the PRO.

Table 6. Government Incentives and Responsible Organizations
(Japan International Cooperation Agency, 2008)

Incentives	Name of incentive	Responsible Organization
Fiscal incentives	<ul style="list-style-type: none"> Income tax holiday Duty reduction on imported capital equipment, spare parts, and accessories Tax credit on raw materials and supplies 	Board of Investments, Department of Trade and Industry
Non-fiscal incentives	<ul style="list-style-type: none"> Simplification of customs procedures Unrestricted use of consigned equipment Employment of foreign nationals 	Board of Investments, Department of Trade and Industry
Financial assistance programs	<ul style="list-style-type: none"> Environmental lending program 	Development Bank of the Philippines

A register is necessary to identify and monitor the obliged companies (Figure 16). This will enable the PRO to determine appropriate fees that will cover the cost of funding of the local MRF and its other endeavors (e.g., IECs, development of alternative packaging material). The tasks, powers, committees, and supervision of the registry shall be clearly stated in the legal framework.

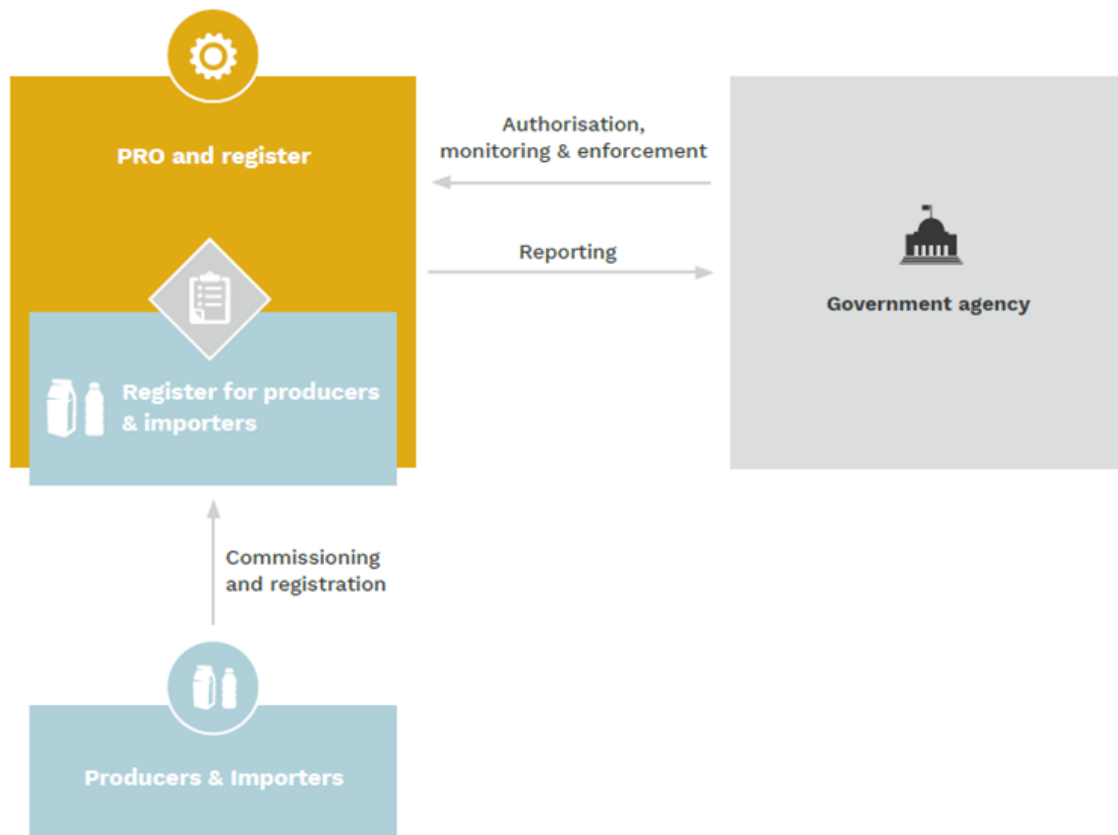


Figure 16. The Register within an EPR Scheme

The OECD's guidance on EPR mentions that the main purpose of a register to "provide PROs with the means to compile information needed to set fees and to identify free riders." (OECD, 2016). The Basel Convention's practical manual on EPR (2019) further states that "enforcement [bodies] should ensure a public register of producers is available and maintained in order to identify all producers including internet sellers and free-riders. All producers should be identified and required to take up their responsibility individually or through a PRO." (United Nations Environment Programme, 2019)

All producers and importers are required to provide the following data:

- The company's Taxpayer Identification Number (TIN)
- The company's name and address
- The company's staff members responsible for the registration, including contact details
- The brands or categories of the products the company introduces to the market (e.g., food, beverage, clothing, electronics)

The register contains confidential data belonging to competing companies in several industries. Hence, this must be protected accordingly. However, the PRO must also ensure data transparency and thus manage the information that may be disclosed publicly.

VI. CONCLUSIONS

& RECOMMENDATIONS

This study explains the design of a model EPR scheme and its roadmap to implementation. These were presented to and validated with various stakeholders so that the proposed EPR scheme considers the concerns of all affected sectors. The following are the findings of this study:



IMPLEMENTATION OF A HOLISTIC EPR SCHEME

The EPR scheme proposed in this report has been developed by consulting with various stakeholders and considering each of their inputs in its development. Thus, to ensure that a holistic EPR scheme is implemented, having a single non-profit PRO as the avenue for all stakeholders to interact and effectively unify all multi-sectoral efforts is an important feature in this proposed scheme. The proposed EPR scheme also defines the roles and responsibilities of each sector so that their participation in the EPR scheme and in solid waste management is institutionalized. This, in a way, achieves the purpose of S.B. 2425 in adopting a “systematic, comprehensive, and ecological solid waste management program which shall Institutionalize public participation in the development and implementation of national and local integrated, comprehensive and ecological waste management programs.”



INVESTMENT IN RECYCLING INFRASTRUCTURE

The study emphasizes the need for a well-established recycling infrastructure in the country before any mandatory EPR scheme takes effect to ensure that there is sufficient economic benefit in processing the materials that will be recovered through the EPR scheme. At present, the infrastructure for recycling in the country is still limited – there are only limited facilities that can process specific plastic items only and, even then, their locations are concentrated in very few major cities in the Philippines only. For the proposed EPR scheme to work, there should be a steady market for recyclates in the country to stimulate the recovery of all recyclates and prompt the establishment of additional recycling facilities for both high-value and low-value plastics around the country.



INCENTIVES-BASED PARTICIPATION IN THE EPR SCHEME

Economic incentives have been seen in this study as a tool that the government can legislate and use to encourage participation of various stakeholders in the EPR scheme.

Obligated companies, as the main sector that will be affected by the implementation of an EPR scheme, can be incentivized to improve the recyclability and reusability of their products and product packaging by being granted tax deductions to help them facilitate necessary adjustments as they transition to more EPR-compliant operations and through eco-modulation of EPR fees once a mandatory EPR scheme is in place. Obligated companies should invest in upstream solutions as a means for them to reduce their EPR fees.

Incentives can also be made available to recycling companies and converters in order for them to invest in technology that can recycle or recover value from low value plastics. This not only will provide motivation to increase collection of low value plastics but the informal waste pickers and small junk shops who often come from low-income groups will have additional revenue.



INCLUSION OF THE INFORMAL SECTOR

It is no doubt that the informal sector is skilled in plastic waste collection, sorting, and recycling but are also the most vulnerable sector along the waste recovery chain. The inclusion of waste pickers and junkshops in an EPR scheme is important as their contribution to recovery efforts are significant as long that there is economic motivation for them to do so.

Thus, the proposed EPR scheme gives the informal sector choices in which they can retrieve waste materials suitably and comfortably, either through continuing their individual waste picking activities or by being integrated by social enterprises or cooperatives. They are also given the opportunity to earn additional income by earning revenue not just from high-value plastics but also from low-value plastics. They may further be supported by providing them with the necessary equipment, such as *karitons* and trucks for hauling, as well as by providing financial assistance that junk shop operators can use as capital.



INSTITUTIONALIZE PRO SUPPORT TO THE MRF

The operational responsibility of the obliged companies through the PRO is manifested by providing assistance to LGUs in the organization and operation of MRFs. In this scheme, funds from the EPR fees collected from the producers are allocated to assist city and municipal LGUs in the establishment and operations of MRFs. This gives each MRF an opportunity to be professionalized and have standardized set-up and operations, a feature which it currently lacks given the current solid waste management system. In return, the PRO shall possess ownership of the materials recovered through the MRFs.



As a way forward, it is recommended to conduct further work on the economic feasibility of the proposed EPR scheme in this study to determine a more accurate estimate of EPR fees that is appropriate to the Philippine setting. It is also recommended to look into the legal aspects of the co-responsibility of the PRO and the LGU in financing and operating MRFs and determine possible arrangement that may help achieve the objectives and benefit the implementation of the proposed EPR scheme.

With the proper implementation of the proposed EPR scheme presented in this report, the aim to reduce plastic leakage in the environment can be met.

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