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

BRIEF
OCTOBER 2020

BACKGROUND

This study, commissioned by the World Wide Fund for Nature (WWF) Philippines, is the first comprehensive scientific assessment and material flow analysis of plastic packaging waste in the Philippines. The evaluation framework of the report is built on a thorough analysis of the country's waste reduction and management system, and recycling market for plastic waste. This serves as foundation for the proposed elements and components of an extended producer responsibility (EPR) scheme for the Philippines, including short- and medium- term actions that need to be taken to lay the foundations for EPR.

EPR IS AN ENVIRONMENTAL POLICY APPROACH THAT EMERGED IN THE 1990S

AND IS NOW INCREASINGLY RECOGNISED AROUND THE WORLD AS A USEFUL TOOL FOR ACCELERATING THE TRANSITION TO SUSTAINABLE WASTE MANAGEMENT AND A CIRCULAR ECONOMY

EPR is an environmental policy approach that emerged in the 1990s and is now increasingly recognised around the world as a useful tool for accelerating the transition to sustainable waste management and a circular economy. It also encourages waste reduction and the development of more environmentally friendly packaging design. 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 also during the end-of-life phase – or once their products have become waste. EPR works alongside and complements general waste management systems typically run by the government and its citizens.

Research and preparation of this report was undertaken by cyclos GmbH and AMH Philippines, Inc. cyclos GmbH, founded in 1993, is one of Germany's leading waste management and material flow consulting companies specializing in strategy and policy development, auditing, compliance assurance, and research. AMH Philippines is an academe-linked engineering consultancy company founded in 1999 that provides technical advisory services, feasibility studies, preliminary engineering and detailed design, construction management and special studies requiring modelling and research.

The study is part of WWF Philippines' No Plastic in Nature Initiative – a multi-pronged program that aims to stop the flow of plastics entering nature by 2030. This will be done through a combination of actions and activities that eliminate unnecessary plastic; double reuse, recycling, and recovery; and ensure that remaining plastic are sourced responsibly. WWF engages the government (national and local), the business sector, and the general public through various programs for this initiative.

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THE PLASTIC POLLUTION PROBLEM

Plastic pollution has reached gigantic dimensions worldwide and has caused serious consequences to marine life and the wellbeing of society. Approximately 4.8 to 12.7 million tonnes of plastics are entering the ocean yearly, of which the vast majority leaks into the Indian Ocean and Pacific. This has been attributed to continuous plastic production and the lack of a sound waste collection and treatment system. One major contributor to this problem is that low- and middle-income countries, such as the Philippines, often face budget shortfalls for waste management [Jambeck et al., 2015]. The Jambeck modelling study (2015) further identified the Philippines as the 3rd top plastic waste producing country based on the extent of coastlines, coastal population, and waste management capacity.

THE COUNTRY'S PLASTIC RECYCLING RATE IS LOW AT 9%

THE AVERAGE PLASTIC WASTE GENERATION IN THE PHILIPPINES HAS BEEN ESTIMATED AT 15.43 KG/CAP/YEAR

Plastic holds the third largest share in the overall generated waste in the Philippines, with residual waste – mostly composed of post-consumer non-recyclable plastic - as the second biggest component of this share. At the same time, the country's plastic recycling rate is low at 9%. The average plastic waste generation in the Philippines has been estimated at 15.43 kg/cap/year. Waste management is constantly challenged with increasing waste generation and the limited resources and infrastructures in place. While the collection of packaging waste is essential to building up reuse and recycling systems, the national collection rate is estimated to be 40%.

POLICY MAKERS, CORPORATIONS, AND CONSUMERS WORLDWIDE

SHOW AN INCREASING INTEREST IN TRANSITIONING FROM A LINEAR TO A CIRCULAR ECONOMY

Policy makers, corporations, and consumers worldwide show an increasing interest in transitioning from a linear to a circular economy to address plastic pollution. EPR schemes have proven to be an effective measure on this pathway. Results of the report are meant to inform policy makers and other stakeholders in addressing plastic pollution, particularly towards establishing and implementing a mandatory EPR scheme customized for the Philippines following a circular economy approach.

THE STUDY OUTLINE

The study begins by looking at the status quo of the Philippine waste management system, including the recycling market for plastic packaging waste, solid waste management legal framework, infrastructure and operationalisation, and materials recovery and trade. This is followed by an analysis on plastic waste flow, including types of plastics and its application, and the composition of plastic waste.

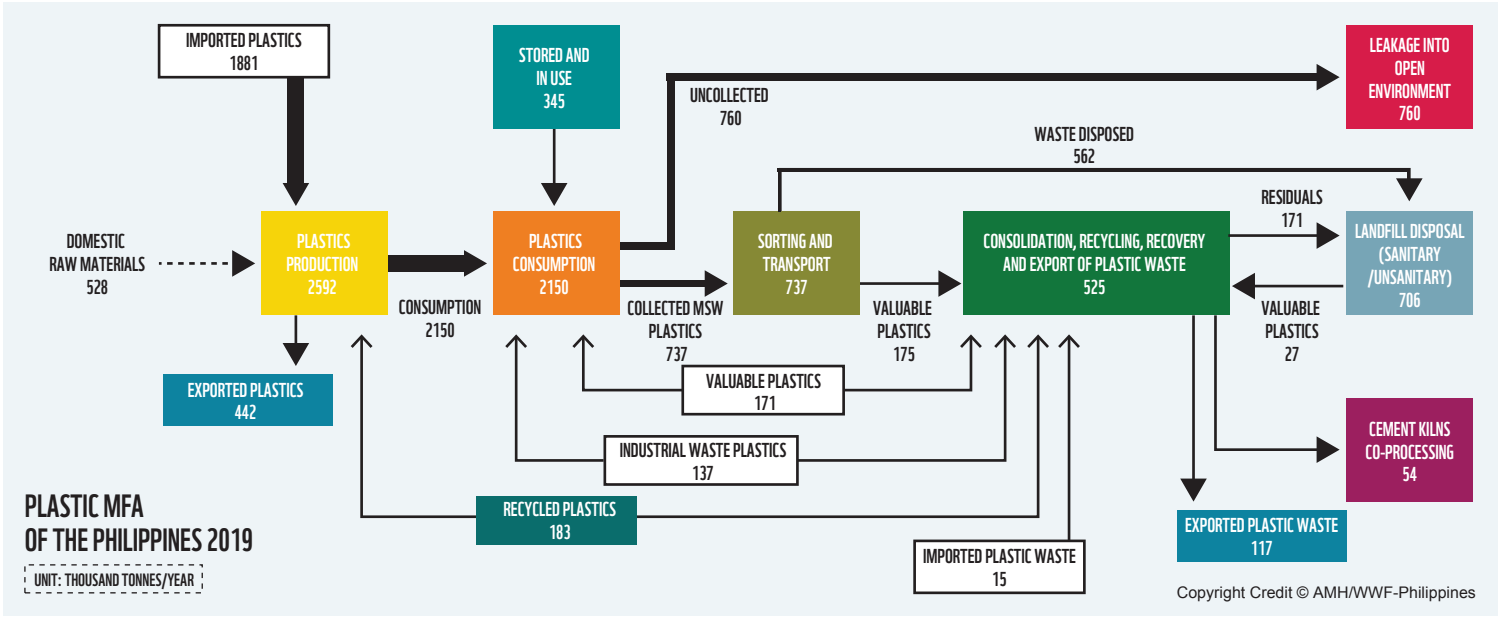
A customized EPR scheme is then presented. Global trends, concepts, and best practices are highlighted. This provides the groundwork and foundation for the proposed customized EPR scheme for the Philippines. Specific roles of various stakeholders (i.e., government; the Producer Responsibility Organization; producers and importers; consumers; and waste management operators) are discussed, including a summary of key elements of the EPR scheme. A proposed implementation plan to put in place the proposed EPR scheme, with short- and medium- term actions are also been presented.

THE STATUS QUO: WASTE MANAGEMENT SYSTEM AND RECYCLING MARKET FOR PLASTIC PACKAGING WASTE IN THE PHILIPPINES

The results of the extensive research, data gathering, and consultations of the Study show three significant characteristics that shape the current Philippine context and status quo:

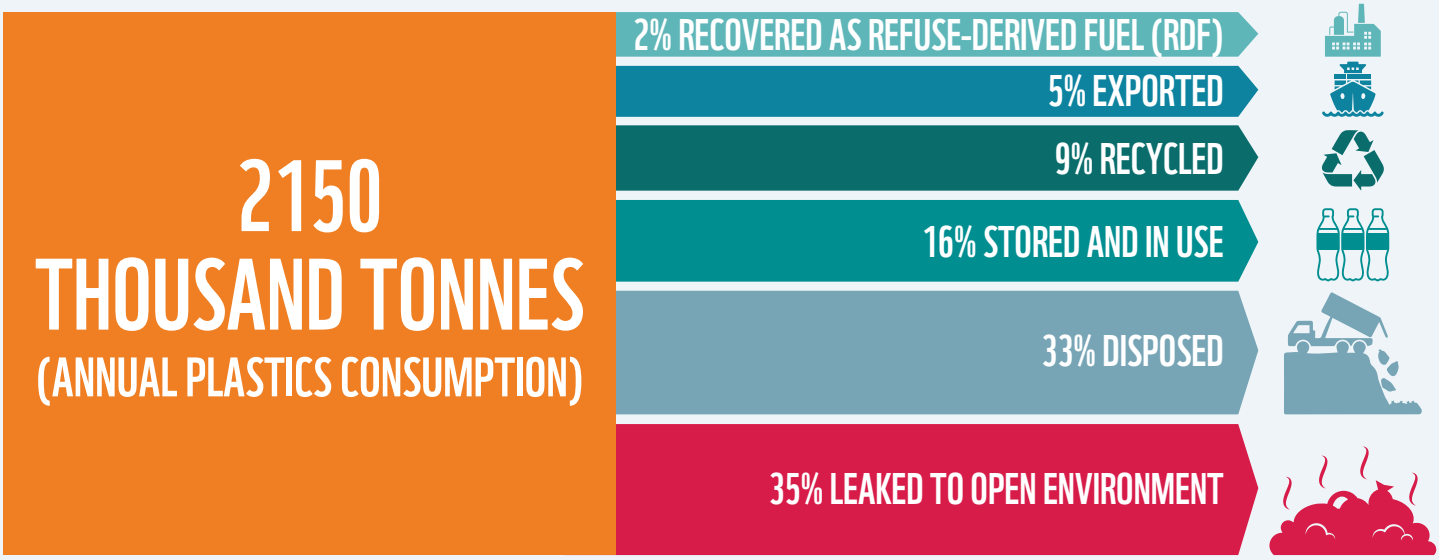
1. High-value recyclable packaging is already separated from household waste to a limited extent and transferred to recycling systems. This applies especially to rigid HDPE, PP and PET. Extraction is largely informal and the subsequent value chain is based on a functioning market. A sizeable volume of these high-value recyclable packaging still ends up in disposal sites or leaked to the environment.
2. The recycling capacities of the Philippines are insufficient for the mentioned, locally generated, and high-value recyclables. Yet, some recyclers and aggregators still import and process imported recyclables, occupying large capacities.
3. Low-value and non-recyclables (e.g. all kinds of flexibles like films, sachets, and composites) are mostly disposed of and collected together with other residual wastes. So far, there is no systematic separation and recycling of the low-value recyclables. Depending on the locally prevailing collection and disposal system, all of these end up in sanitary landfills, open dumpsites, or are littered in the environment. The capacity of suitable disposal options via sanitary landfills is not sufficiently available across the country.

These characteristics are the reality despite the prevailing waste management legal framework which mandates segregation, proper handling and storage, recycling, and disposal in sanitary landfills. Many factors contribute to the status quo – which adds basis and cadence to the growing call for solutions and tools such as an EPR scheme for the Philippines.



This study adopted the same framework of a macro-scale Material Flow Analysis (MFA) for recyclable materials including plastics as the Japan International Cooperation Agency (JICA) in the "Study on Recycling Industry Development in the Republic of the Philippines" [JICA, 2008]. Additional collection and recycling streams, detailed waste characterization data, and flows per types of plastics were incorporated. Data available from various government and private institutions, together with primary data, were used as starting points to generate key amounts and rates for plastics production, consumption, collection, recycling, recovery, disposal, and leakage. This study can be the basis of the current status of the Philippines' plastic waste stream, and can be a reference point for future interventions to decrease the amount of plastics leaked into the environment, improve recycling rates of plastics, and facilitate design innovation. A Plastic Materials Flow Analysis in the Philippines for 2019 is shown above.

The rates are based on the ratio of amount of plastics in a particular stream relative to the total amount of plastic consumption. Out of the 2,150k tonnes of plastic that are available for local consumption, 760k tonnes or 35% are leaked to the open environment while 706k tonnes or 33% are disposed to landfills and dumpsites. Approximately 345k tonnes or 16% are stored and in-use. Around 183k tonnes or 9% are considered recycled.



FLOW OF PLASTIC MATERIALS IN THE PHILIPPINES 2019

WHAT THE MFA DATA MEANS

The results of the MFA point to a fact which seems common sense but is now backed-up by data and science: that the Philippines has a serious plastic waste problem and we are not doing enough. Current laws and policies on waste management are not being adequately and properly implemented. There is also a lack of proactive and innovative approaches to dealing with waste either at its source (e.g., eco-design and reduction techniques), and at disposal.

THE PROPOSED EPR SCHEME

WILL FACILITATE DESIGN INNOVATION AND INCREASE RECYCLING RATE.

One such intervention is the adoption and implementation of a mandatory EPR in order to enhance both the design and management of plastics especially in terms of their end of life. Such EPR framework, customized for the Philippines, will contribute to decreasing the leakage of plastics amid other waste to the environment by facilitating design innovation, increasing recycling rates, and ensuring end of life management for residual plastic waste. This makes producers responsible for the management of plastics before they even reach the consumer market. It also shifts the use of public funds to other vital social services.

DEVELOPING A CUSTOMIZED EPR SCHEME FOR THE PHILIPPINES

On the way forward to implementing an EPR scheme, the following recommendations are crucial to consider:

MANDATORY EPR SCHEME WITHIN A CLEAR TIMEFRAME (WHILE ALLOWING FOR IMMEDIATE VOLUNTARY COMPLIANCE)

Provide a reliable financial basis for large-scale collection, sorting, and recycling of packaging which is crucial for creating sufficient business cases along the value chains. The EPR scheme will be mandatory from its effectivity. During the transition phase, voluntary compliance will be allowed for pilot projects to gather know-how on waste management measures (in collection, sorting, and recycling), data collection, and system relevant mechanisms (e.g. register of obliged companies). This transition phase is also an opportunity for Multinational Companies (MNC) and producers to reduce unnecessary plastics in their business value chain.

EPR SCHEME FOR CONSUMER PACKAGING MATERIALS AND NON-PACKAGING PLASTIC PRODUCTS LIKE SINGLE USE PLASTIC (SUP)

The scheme should cover all materials from households and equivalent places of origin (e.g. service packaging, offices, canteen, and restaurants) to create a financial and organizational basis for treating critical products and to avoid undesired substitution effects in packaging design.

ONE, NON-PROFIT PRODUCER RESPONSIBILITY ORGANIZATION (PRO)

Ensure a holistic, reliable, and fair waste management in which the responsibility is collectively assumed through one, non-profit industry-led system operator. The PRO includes a wide range of stakeholders representing obliged members (local and MNC producers and importers), other members (plastic value chain including waste management operators), and government representatives from all levels, academia and representatives of the consumers who constitute an Advisory Board..

STRICT MONITORING AND CONTROL SYSTEMS

To avoid fraud, strict and enforced monitoring, controls and penalties are indispensable and shall be carried out by the government (i.e., the Department of Environment and Natural Resources) to ensure compliance of all actors, including the PRO. Monitoring and control systems are also essential to keep a level playing field among obliged private industry, and to guarantee transparency of the system.

BUILDING HIGH-QUALITY RECYCLING CAPACITY

To overcome the current bottleneck of insufficient recycling capacity, the financial flows of the EPR system are directed towards measures for increasing both the quantity and quality of recycled plastics to enable closed-loop recycling (e.g. bottle-to-bottle recycling). This can also encourage eco-design and improved packaging materials using eco-friendly sources and/or for better recyclability.

Combining the roles and responsibilities of the relevant stakeholders, the principles of an EPR schemes, and the potential legal framework, the following key elements to consider are summarized below:

KEY ELEMENT	DESCRIPTION	NOTE / 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-hand experiences while the legal basis for a mandatory system is prepared. When the law enters into force, the EPR system becomes mandatory.	Mandatory with phased implementation (transition period); voluntary compliance allowed during transition
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 MNC producers and importers have to sign up and report regular amounts put onto the market.	Typical products covered under an EPR scheme: different kind of packaging and 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. During the transition phase, MNC producers and importers are encouraged to re-design their product packaging or eliminate unnecessary plastics in their packaging.
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 who constitute an Advisory Board
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 in order to account for bureaucratic efforts and avoid competitive disadvantages for smaller companies.	Emphasize and ensure system transparency for mutual control, to avoid corruption, and 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 model 'in between'	Model "in-between" 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, reduction measures); appropriateness of targets depending on state of the waste management system	Enact mandatory law and regulation on EPR Transparent system, rigid enforcement mechanisms

With the goal of having an established mandatory EPR framework in the next 3 years, the implementation plan for the proposed EPR scheme requires two main steps:

1. Build foundation for EPR with focus on capacity building: The idea is to prepare a medium-term system change based on an aligned understanding by all stakeholders, first by introducing the concept and then forming collaborations. It should aim to establish a mandatory EPR framework and related organizations (i.e., the PRO) in the next 3 years.
2. Stimulate a holistic, basic waste management: Basic waste management needs to be in place and improved, which can be re-organized according to the EPR scheme once the system is set for implementation.

CONCLUSIONS

An intensive research of the Philippine waste management system was undertaken, which focused on post-consumer plastic waste generation and management, revealing that EPR is a viable solution to deal with the plastic waste problem in the country. Therefore the first step is for policymakers to take a firm stand and mandate EPR for the Philippines. However, more needs to be done and set in place to help in the implementation of this mandatory EPR system. 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 organisations within the next 3 years. The findings of the study show that:

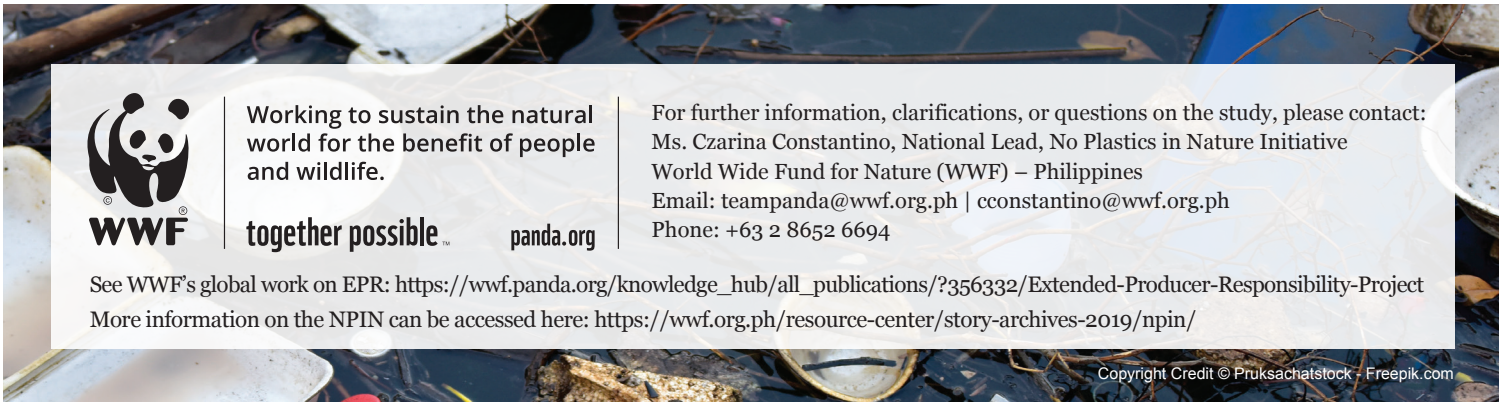
1. **The Philippines is at the early stages of sustainable waste management.** This is also due to its geographical structure, which requires the implementation of very specific and expensive waste management measures depending on the local conditions. While in the urban city and municipal areas waste management services are provided area-wide, however sufficiently, there is usually no centralized waste collection for other rural and island communities detached from the mainland.

2. **There is no uniformity in implementation of national regulations, and responsibilities are dispersed among all government levels**. This results in inefficiencies and weak accountability. Missing adequate technical and financial resources, lack of political will, weak willingness of stakeholders, and minimal awareness instead of a holistic approach are also present.

3. **Aligning the way forward and measuring progress are difficult as there is no sound database available**. This became especially evident in the creation of the material flow analysis.

4. **In the Philippines there is only little to no recycling infrastructure.** If collected, plastic is one of the common recyclable materials (besides metal and paper). However, only a small amount is actually recycled.

This study offers a science and evidence-based analysis for supporting the development and implementation of a future EPR system. For capacity building, the basics and recommendations presented for the design of an EPR system should be considered in the much-needed communication with all stakeholders, in order to establish a uniform understanding of EPR and to demonstrate the effects and opportunities along the waste packaging chain. The proposed EPR scheme and the implementation plan will help address the waste management challenges identified in this study. All sectors and stakeholders must work together to push forward EPR and make it a viable and real solution to the plastic waste problem in the Philippines.



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See WWF's global work on EPR: https://wwf.panda.org/knowledge_hub/all_publications/?356332/Extended-Producer-Responsibility-Project
More information on the NPIN can be accessed here: https://wwf.org.ph/resource-center/story-archives-2019/npin/