



# Integrating Solid Waste Management and Circular Economy in the Comprehensive Development Plan of LGUs

Urban-Act Policy Brief Series No. 1

Supported by:



on the basis of a decision  
by the German Bundestag

## Imprint

As a federally owned enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development.

Published by  
Deutsche Gesellschaft für  
Internationale Zusammenarbeit (GIZ) GmbH  
Registered offices Bonn and Eschborn, Germany

Integrated Urban Climate Action for Low-Carbon & Resilient Cities (Urban-Act) Project  
10th Floor, Bank of Makati Building  
Ayala Avenue Extension cor Metropolitan Avenue 1209 Makati City, Philippines

[www.giz.de/en](http://www.giz.de/en)  
<https://www.urbansdgplatform.org/climateaction/viewAbout>

In cooperation with the Department of the Interior and Local Government - Bureau of Local Government Development (DILG-BLGD)

The preparation of this policy note benefitted from a series of policy dialogues with national government partners Department of the Interior and Local Government (DILG), Department of Human Settlements and Urban Development (DHSUD), Department of Transportation (DOTr), Land Transportation Franchising and Regulatory Board (LTFRB), Office of Transport Cooperatives (OTC), Climate Change Commission (CCC), Department of Environment and Natural Resources (DENR), Department of Finance (DOF), Department of Budget and Management (DBM), Department of Economy, Planning, and Development (DepDev), and Department of Trade and Industry (DTI) in May and June 2025. During said dialogues, voices of Urban-Act partner cities Antipolo, Bacolod City, and Tagbilaran were presented as key input to the policy recommendations.

The policy dialogues and preparation of policy briefs was coordinated by Urban-Act, led by Francisco Dacumos III, with special advise and inputs from DILG-BLGD Director Anna Liza Bonagua, Arce Fajardo, and Anna Victoria Quibot.

For more information on GIZ Urban-Act Philippines, please contact Frederic Tesfay ([frederic.tesfay@giz.de](mailto:frederic.tesfay@giz.de)).

Layout: Maxine Cuartero

Author: Eddie Qutoriano

Cover photo: GIZ/Ayan Villafuerte

Disclaimer: This publication has been compiled with the utmost care. Nevertheless, the Urban-Act project partners give no guarantee that the information provided is current, accurate, complete, or error-free. The project partners accept no liability for damage or loss arising directly or indirectly from the use of this publication, provided it has not been caused intentionally or by gross negligence. Any external links cited are not under the control of the Urban-Act team, and the project partners are not responsible for them. Cartographic presentations in no way constitute recognition under international law of boundaries and territories. The content in this publication may be reproduced in whole or in part for educational or non-profit purposes without special permission from the copyright holder, provided that the source is acknowledged. The Urban-Act project partners would appreciate receiving a copy of any publication that uses this publication as a source.

On behalf of  
IKI funded by The Federal Ministry for Economic Affairs and Climate Action Berlin/Bonn, Germany

August 2025

# EXECUTIVE SUMMARY

Solid waste generation in the Philippines is on the rise and has become a pressing national issue. The rate of solid waste generation is associated with urbanization. A large proportion of solid waste is generated by people in their homes and by commercial enterprises. Most of the waste can be reduced, recycled, and reused. However, the linear economy, 'throw-away' culture, and lack of access to solid waste management systems are exacerbating the problem. There is an urgent need to address strategic risks and consequences pertaining to public health, solid waste contribution to GHG emissions, and environmental sustainability.

Local governments, being on the frontlines of solid waste management, need to keep pace with the increasing volume of waste with the aim of achieving reduction, reuse, recycling, and upscaling of reuse and mitigating impacts on public health and the natural environment. There are wide-ranging alternative policy options derived from a stocktaking study in April 2024 and participatory policy analysis exercises in May to July 2024, facilitated by the GIZ-DILG Urban-Act Project. An inter-agency dialogue conducted on 29 May 2025 in Quezon City prioritized three (3) policy recommendations: (a) integration of the circular economy-oriented solid waste management plan into the CDP of LGUs; (b) incentivization of private sector participation in solid waste management; and (c) enhancing the EPR readiness of LGUs.

This policy brief elaborates on the three recommendations:

- a) Recommended structure and content of a Joint Memorandum Circular on Integration of the circular economy-oriented SWMP in the CDP.
- b) Suggested tool and checklist for examining EPR readiness of LGUs.
- c) Suggested instrument and knowledge product for improving LGU capacity to incentivize private sector participation in solid waste management.

## Table of Contents

EXECUTIVE SUMMARY .....	2
About the Urban-Act Project .....	4
1. Introduction .....	5
Methodology .....	5
Purpose of the policy brief .....	5
2. Overview and Importance of the Problem .....	7
3. Solid Waste Management Implementation Constraints at the Local Government Level ...	15
4. Policy Recommendations .....	20
Recommendation 1: Integrating CE and SWM in CDP through a joint memorandum circular (JMC) .....	20
Recommendation 2: Stocktaking study on LGU readiness to the Extended Producers Responsibility (EPR) Law.....	36
Recommendation 3: Incentivizing partnerships with private sector.....	39
References .....	46

## List of Tables

Table 1. Waste generation projection in the Philippines, in Million Metric Tons, 2008-2020 ...	8
Table 2. Waste generation, Philippines and selected regions, 2012-2016 (in '000 MT) .....	9
Table 3. Synthesized waste generation rates in the Philippines for the base year 2010.....	10
Table 4. Management of Household Waste, as of 2020 .....	13
Table 5. Solid waste management boards and barangay-level committees, as of 2010 .....	15
Table 6. Status of 10-year Solid Waste Management Plans of LGUs, as of 27 July 2022.....	16

## List of Figures

Figure 1. Waste Generation in the Philippines, 2020-2025 Projection.....	8
Figure 2. Sources of municipal solid wastes in the Philippines, 2008-2013 .....	9

# About the Urban-Act Project

The Integrated Urban Climate Action for Low-Carbon and Resilient Cities (Urban Act) is an International Climate Initiative (IKI)-funded project that supports the transformation of cities towards low-carbon and resilient urban development in the Philippines, India, Thailand, China, and Indonesia. It contributes to the implementation of Nationally Determined Contributions (NDC) and the 2030 Sustainable Development Agenda.

Urban-Act aims to promote vertical coherence by ensuring the integration of national policies and frameworks on climate change and urban development into sub-national plans and programs for effective urban climate action.

With the Department of the Interior and Local Government (DILG) as the main project partner and policy advisor, Urban-Act works at the national level to update, strengthen, and further develop policies and frameworks for urban climate action through technical services and cross-sectoral and multi-level coordination.

The Project works with pilot cities, Antipolo (Rizal), Bacolod (Negros Occidental), and Tagbilaran (Bohol) to update urban plans to integrate climate change considerations, sustainable mobility, and Gender Equality, Disability, and Social Inclusion (GEDSI) considerations. Concept notes will then be developed for intervention areas identified together with government partners and other stakeholders, with the aim of supporting access to financing for small- to large-scale projects.

## Urban-Act Policy Workstream

This policy brief contributes to the Project's Output Area: Improved institutional environment for climate-sensitive urban development, specifically through policy instruments that aid the localization of policies for climate-sensitive urban development.

In formulating the following policy brief, the Project gathered voices from the ground through feedback from Urban-Act pilot cities. Paired with findings from a stock-taking exercise, national government representatives were able to articulate and prioritize actionable recommendations that utilize on-ground realities and experience on planning for and implementation of relevant national policies.

This model promotes dialogue and multi-level coordination between policy actors in order to facilitate the effective implementation of national policies and frameworks.

# 1. Introduction

The overarching aim of this policy brief is to advocate for strengthening the enabling environment for climate-sensitive urban development. Its specific aim is to persuade oversight agencies and other concerned sector agencies of the national government to provide policy support and technical guidance for the following proposed measures:

- a) Integration of a circular economy-oriented solid waste management to the Comprehensive Development Plan;
- b) Enhancing the EPR readiness of LGUs in relation to the implementation of RA 11898 – Extended Producer Responsibility Act of 2022; and
- c) Incentivizing private sector participation in solid waste management.

## Methodology

The preparation of this policy brief has been informed by a stocktaking study on the enabling environment for climate-sensitive urban development in April 2024, participatory policy analysis exercises with stakeholders from Antipolo, Bacolod, and Tagbilaran from May to July 2024, and an inter-agency policy dialogue in Quezon City on 29 May 2025. The policy dialogue involved 39 participants, including 17 representatives from national government agencies (NGAs), 5 representatives from regional offices of the DILG and DENR-EMB, and 17 representatives from development partners. NGA representatives were from the DILG (BLGD, BLGS, and Regions IV-A and VII), DENR (CCS, EMB central office, and EMB Region IV-A), CCC, DHSUD, and Board of Investments. Development partners were represented by GIZ, UNDP, Clean Air Asia (CAA), and the Institute for Climate and Sustainable Cities (ICSC).

## Purpose of the policy brief

This brief is primarily intended for information and corresponding actions of the DILG, DENR, CCC, DHSUD, and, secondarily, for the DBM and DepDev. For information and advocacy purposes, this document is also useful for development partners, civil society organizations, grassroots organizations, financing institutions, and the business sector.





## 2. Overview and Importance of the Problem

**Globally, annual waste generation is outpacing population growth.** The volume of global waste generation is expected to rise from 2.01 billion tons per year in 2020 to 3.4 billion tons by 2050 (Kaza et al., 2018). Between 2005 and 2017, the world added one billion inhabitants in twelve years and another one billion between 2017 and 2030 (UN-DESA, 2017). The global population is expected to peak at 10.3 billion in 2080, then fall to 10.2 billion people by the end of the century, 6 percent fewer than anticipated a decade earlier (UN,2024). While it takes a dozen years to add one billion people to the global population, in the Philippines, it takes only a year to add two billion to 3.4 billion tons of waste by 2050.

**High-income countries significantly contribute to the world's solid waste problem.**

High-income countries (16% of the world's population) produce 34% of global waste (Kaza et al., 2018). The East Asia and Pacific region contributes 23 percent. By 2050, waste from Sub-Saharan Africa is expected to triple, and from South Asia, more than double.

**Solid waste is a pressing global issue.** It concerns policy, regulations, and the system of production and consumption, and how institutions manage population needs and economic growth without undermining the future (Coracero et al., 2021). It is estimated that by 2050, global solid waste will emit 2.6 billion metric tons of carbon dioxide from the current level of 1.6 billion metric tons (Kaza et al., 2018). These are thrown-away plastics and other residual waste littering roads, choking waterways, and undermining life in our oceans, and biodegradables emitting methane due to a lack of sanitary landfills or other technologies for reuse.

**There is an urgent need to mind the gap.** Uncollected waste and poorly disposed waste have significant health and environmental impacts. An estimated 23-42% of global GHG emissions are associated with food systems, notwithstanding widespread food insecurity and malnutrition (IPCC, 2022). Integrated food policy packages based on a combination of market-based, administrative, informative, and behavioral policies can address multiple sustainability goals, including the issue of food waste that contributes to GHG emissions and abating energy and materials (input) loss. The cost of addressing negative impacts is many times higher than the cost of developing and operating simple, adequate waste management systems (Kaza et al., 2018).



### Solid waste generation in the Philippines is on the rise and is a pressing national issue.

The DENR-EMB (2018) projected that waste generation is expected to grow from 13.48 million metric tons (MT) in 2010 to 14.6 million MT in 2014 and 18.05 million MT by 2020. This projection factored population growth based on the national weighted average of waste generation at 0.4 kg/capita/day. The National Capital Region (NCR) accounts for one-fourth of total waste with a weighted average of 0.61 kg/capita/day. Waste generation in the NCR is even higher when combined with highly urbanized cities at 0.69 kg/capita/day. The national collection efficiency and coverage are at 54.98 percent.<sup>1</sup>

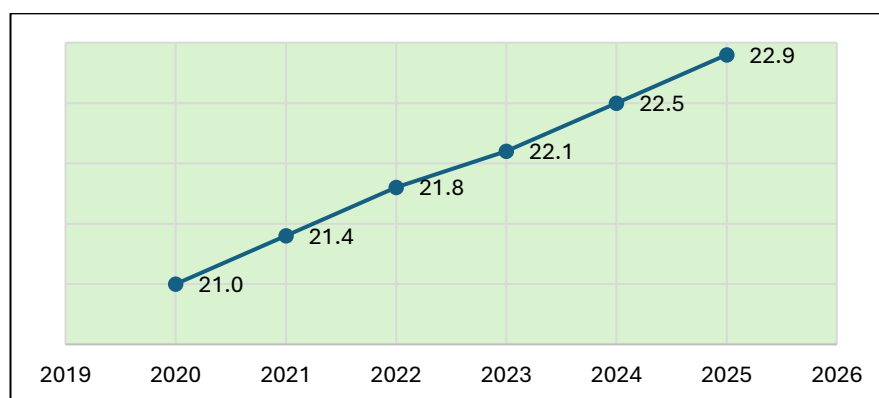
**Table 1. Waste generation projection in the Philippines, in Million Metric Tons, 2008-2020**

	2010	2014	2020
Philippines	13.48	14.66	16.62
NCR	2.99	3.595	4.44

*Adapted from DENR-EMB, 2018*

Updated data available at the EMB Dashboard revised the previous 2020 projection at 18.05 million MT to 21 million MT. By 2025, waste generation is expected to rise to 22.9 million MT per year.

**Figure 1. Waste Generation in the Philippines, 2020-2025 Projection**



Source: EMB Solid Waste Management Division Dashboard, May 22, 2025. Retrieved from: <https://nswmc.emb.gov.ph>

<sup>1</sup> Unpublished Environment Database of the Environmental Management Bureau DENR (2021), cited in Mogol et al. (2022).

**Actual solid waste generation is higher than projected.** As early as 2012, the country already produced 37.4 million MT, rising to 40 million MT in 2016 (SEPO, 2017). The biggest contributors were the NCR, Region IVA (CALABARZON), and Region 3 (Central Luzon). These three regions alone contributed 17.5 million tons of waste in 2016, equivalent to 43.7% of total national waste.

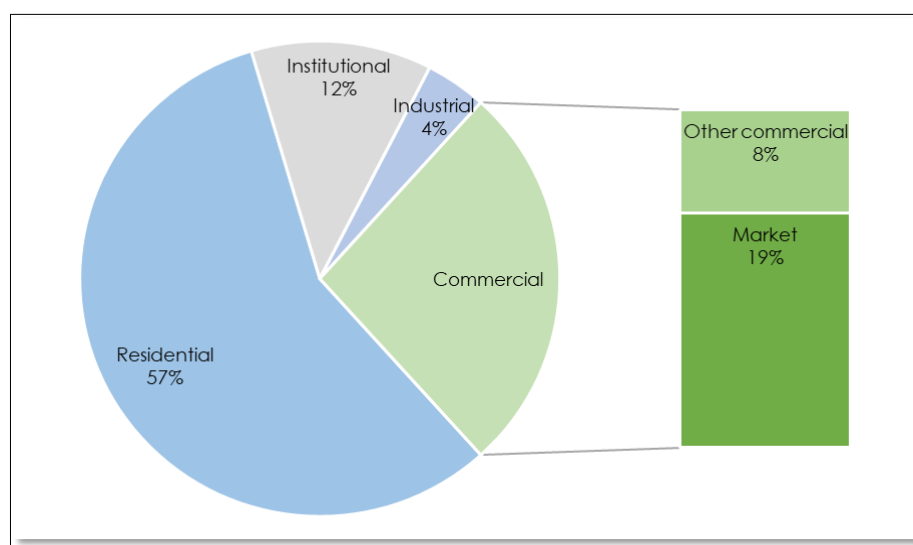
**Table 2. Waste generation, Philippines and selected regions, 2012-2016 (in '000 MT)**

Region	2012	2013	2014	2015	2016
Total	37,427.46	38,092.46	38,757.46	39,422.46	40,087.45
NCR	8,601.60	8,754.43	8,907.26	9,060.09	9,212.92
Region IVA	4,145.52	4,219.18	4,292.83	4,366.49	4,440.15
Region 3	3,631.99	3,696.52	3,761.05	3,825.58	3,890.12
Region 6	2,700.14	2,748.11	2,796.09	2,844.06	2,892.04
Region 7	2,605.68	2,651.97	2,698.27	2,744.57	2,790.86

Source: SEPO, 2017

**Most of the solid waste is generated by people in their homes and by commercial enterprises.** As of 2015, 56.7% of waste is generated by households, 28% by commercial enterprises, 12% by public institutions such as government offices, schools, and hospitals, and 4% from the industrial and manufacturing sectors (NSWMC, 2015). Residential waste is mostly made up of kitchen scraps, yard waste, paper and cardboard, glass bottles, plastic containers and sando bags, foils, soiled tissues and diapers, and special wastes such as containers of household cleaning agents, batteries, and waste electrical and electronic equipment. Commercial sources made up 27% of the total, further broken down as market (19%) and other commercial sources (8%). Institutional and industrial sources contribute 12% and less than 5%, respectively.

**Figure 2. Sources of municipal solid wastes in the Philippines, 2008-2013**



Source: DENR-EMB, 2018

**The rate of solid waste generation is associated with urbanization.** When excluding Metro Manila, the waste generation rate was found to be only at 0.34 kg/capita/day. Further excluding cities and capital towns produced much lower rates at 0.31kg/capita/day. Additional capacity for waste management must be anticipated in the light of increasing urbanization and rural-to-urban migration patterns. The global annual waste generation is expected to jump to 3.4 billion tons in the next 30 years, up from 2.01 billion tons in 2016, driven by rapid urbanization and growing populations (Kaza et al., 2018). In the Philippines, the World Bank (2020) estimates that waste produced in cities will increase to 165% by 2025.

**Table 3. Synthesized waste generation rates in the Philippines for the base year 2010**

Scope/ Coverage	Sample size (% of demographics)	Range	Weighted average
		kg/per capita/day	
Metro Manila (NCR)	100	0.27-1.00	0.61
Metro Manila and some highly urbanized cities (HUCs)	N/A	0.27-1.00	0.69
Other cities and provincial capitals (excluding NCR/HUCs)	N/A	0.29-0.64	0.50
PHILIPPINES (NATIONWIDE)	79	0.10-0.79	0.40
All LGUs in the country, excluding Metro Manila	76	0.10-0.71	0.34
Municipalities (cities and some capital towns excluded)	N/A	0.10-0.64	0.31

Source: DENR-EMB, 2018

**The Philippines needs to worry about plastics in solid waste.** In 2016, the world generated 242 million MT of plastic waste, comprising 12% of all solid waste (Kaza et al., 2018). As of 2010, 15% of the 0.5kg/per person/day waste generated in the Philippines consists of plastic waste (Jambeck et al., 2015). In the same year, it ranked No. 3 on the list of top 20 countries by mass of mismanaged plastic waste (MPW). Scaling by the population living within 50 km of the coast (those likely to generate most of the waste becoming marine debris), Jambeck et al. estimate that 99.5 million MT of plastic waste was generated in coastal regions in 2010. Of this, 31.9 million MT were classified as mismanaged, and an estimated 4.8 to 12.7 million MT entered the ocean in 2010, equivalent to 1.7 to 4.6% of the total plastic waste generated in coastal countries. In 2019, it was estimated that Filipinos used more than 163 million plastic sachets, 48 million shopping bags, and 45 million thin-film bags (GAIA, 2019). A significant amount of post-consumer plastic waste leaks into waterways and the ocean (WWF Philippines, Cyclos GmbH, and AMH Philippines, 2020).

**Plastic waste is not only generated domestically, it is also traded from abroad.** There has been an increase in plastic waste imports to the Philippines from 4,650 tons in 2016 and 4,267 tons in 2017 to 11,761 tons in 2018 (Greenpeace & EcoWaste Coalition, 2020). These were composed of exports from Japan, the US, Taiwan, Indonesia, and Hong Kong. This phenomenon is cited in the 2019 Senate Bill No. 1329, a proposed law that seeks a total ban on the importation of waste and its byproducts or residues.<sup>2</sup> An existing law, RA 6969 - Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 – mainly covers unregulated chemical substances and mixtures and hazardous and nuclear wastes (Sec. 3).<sup>3</sup> It does include the toxicity and hazard of plastic waste. Another relevant legislation, RA 10863 – Customs Modernization and Tariff Act (CMTA) of 2016, reiterates the provisions of RA 6969. This law does not include plastic waste on the list of prohibited and regulated imports.<sup>4</sup> Section 16 of this law provides for free importation and exportation of all goods unless otherwise provided by law. “Although hazardous waste is prohibited from entering the Philippines, trash marked ‘for recycling’ is legal, opening up a loophole that may allow the entry of illegal waste.” (Explanatory Note, SB 1329).

**Plastics in municipal waste leak into the ocean through river bodies.** In a 2019 study, Meijer et al. (2021) calculated that 8.9% of the estimated 4 million MT of mismanaged plastic waste (MPW) was leaked to the ocean through 4,820 rivers in the Philippines. The study also found that the Pasig River was the most polluting body for riverine plastic emission to the ocean.

**Solid waste is a significant contributor to greenhouse gas (GHG) emissions.** Globally, methane emissions from landfills (2%) and wastewater (1.3%) contribute less than 3% of the total greenhouse gas emissions (WRI, 2021). In 1994, the Philippines’ greenhouse gas emissions from the solid waste sector were 4,253 ktons of CO<sub>2</sub>e (Republic of the Philippines, 2000). In 2010, the Philippines’ waste sector contributed 11% (15.6 Mt CO<sub>2</sub>e) of the country’s greenhouse gas emissions (CCC, 2010). An estimated 68% (10.56 Mt CO<sub>2</sub>e) came from wastewater treatment and discharge, and 31% (4.9 Mt CO<sub>2</sub>e) came from solid waste. In 2014, the country reported a 64% increase in greenhouse gas emissions from the waste sector – from 7,094 Gg of CO<sub>2</sub>e in 1994<sup>5</sup> to 11,599 Gg of CO<sub>2</sub>e in 2000 (Republic of the Philippines, 2014). In its 2000 national communication to the UNFCCC, the Philippines reported that an increase in urban population will lead to an increase in methane emissions from solid waste (Republic of the Philippines, 2000).

---

<sup>2</sup> See: <https://legacy.senate.gov.ph/lisdata/3944335840!.pdf>

<sup>3</sup> See: [https://lawphil.net/statutes/repacts/ra1990/ra\\_6969\\_1990.html](https://lawphil.net/statutes/repacts/ra1990/ra_6969_1990.html)

<sup>4</sup> See: <https://elibrary.judiciary.gov.ph/thebookshelf/showdocs/2/68014>

<sup>5</sup> Recalculated using different methodology.



### **Improper solid waste management practice, impact on public health and natural**

**ecosystems.** Local populations with direct or indirect contact with solid waste are exposed to disease vectors and methane gas, while environmental impact includes pollution of groundwater and surface/coastal waters (EMB, 2018). It is estimated that an average of 27% of municipal populations surrounding open dumpsites are at risk from water-borne diseases due to open dumpsites. Impacts on ecosystems are visible in the National Capital Region (NCR), such as the state of Laguna de Bay, the Pasig River, and smaller arteries of Metro Manila. Manila Bay, the receptacle of solid and liquid waste from 178 local government units (LGUs) in the Manila Bay Watershed, is now facing oxygen starvation and death of animal life (Sotto et al. 2015). Informal settlers near dump sites, self-employed waste pickers, and persons employed in establishments dealing with the treatment and disposal of non-hazardous waste are most vulnerable due to proximity and frequency of exposure. The 2018 Census of Philippine Business and Industry (CPBI) indicates that, as of 2018, there were 39,666 persons employed in 1,106 establishments dealing with the treatment and disposal of non-hazardous waste (PSA, 2021). They were also found to be the least compensated among industry sub-classes.

**Solid waste can be reduced, recycled, or reused.** Typical waste is made up of biodegradables (52.32%), recyclables (27.78%), and residual wastes (17.98%) (De Paz et al., 2020). Of the biodegradables, 86.2% come from food scraps, while the remaining are leaves and twigs. Recyclables made up 28% of the total, the majority of which are plastics, paper, and cardboard. Further, residuals or non-recyclables comprise 18% of the composition, 12% of which are a combination of disposable waste and inert materials. Lastly, special waste comprised 2% of the total. Biodegradables can be composted, and others recycled to generate income. The configuration of waste suggests that not all waste materials need to be disposed and treated elsewhere. Globally, 33% of waste is improperly disposed and only 20% is recycled and composted (WB, 2020). Recycling and composting in low-income countries are lower, at 4% of waste (Kaza et al., 2018).

In the Philippines, based on the 2020 Census of Population and Housing, half of household waste is connected to the local government system of garbage collection, and the other half is self-managed by households, either by dumping (10.2%), burning (16.3%), composting (8.6%), or burying (4.3%), among other methods. Although already prohibited by law, the practice of burning waste is still significantly high at 16 percent of households.

In Urban-Act pilot cities, connectedness to the local government system of solid waste management is relatively higher than the national average. Composting is still low except in Tagbilaran City at 13 percent of households.

**Table 4. Management of Household Waste, as of 2020**

Area	No. of households	Usual manner of waste disposal (in % of HH)				
		Pick-up by garbage truck	Dumping (individual pit)	Burning	Composting	Burying (individual pit)
Philippines	26.37 million	50.6	10.2	16.3	8.6	4.3
Antipolo	208,299	82.2	2.0	3.8	1.9	2.6
Bacolod City	142,807	78.8	5.6	5.6	2.5	1.8
Tagbilaran	23,067	63.9	4.3	4.3	13.0	3.4

Source: PSA (2024), 2020 Census of Population and Housing

**The Philippines has sufficient policy levers to manage solid waste.** State attention to waste started as early as 1964 with Republic Act (RA) 3931, creating the National Air and Water Pollution Commission. The focus of the law was the maintenance of the purity of water. Relevant laws were enacted (by decree) during the Martial Law years. These include laws on marine pollution (PD 600 in 1974), sanitation (PD 856 in 1975), water (PD 1067 in 1976), and pollution control (PD 984 in 1976, amending RA 3931).

The next generation of waste-related legislation began in the 1990s, such as RA 6969 (in 1990, on toxic substances and hazardous and nuclear waste), RA 8749 (in 1999, on clean air), and RA 9003 (in 2001, on ecological solid waste management). Pre-existing policies closest to the topic on marine litter are the Marine Pollution Decree of 1976 (Presidential Decree No. 979), which places responsibility on the National Pollution Control Commission (now Environmental Management Bureau of the DENR) and the Philippine Coast Guard (PCG) to promulgate national rules and policies governing marine pollution. The Philippine Water Act of 2004 (otherwise known as RA 9275) also prohibits unauthorized transport or dumping into seawaters of sewage sludge or solid waste (Section 27).

Philippine institutions involved in marine pollution control and enforcement are broader than the institutional arrangements prescribed in RA 9003 and the EPR Law of 2022. Philippine accession to the International Convention for the Prevention of Pollution from Ships (MARPOL) and its annexes (Annex IV - prevention of pollution by sewage from ships; Annex V - prevention of pollution by garbage from ships) brings in the regulatory mandates of the Philippine Ports Authority (PPA), PCG, Maritime Industry Authority (MARINA) and Department of Transportation (DOTr).

The Philippines is also signatory to international declarations and agreements on the prevention and control of waste<sup>6</sup> and has upheld commitments to the UN SDGs, including SDG 14 (life below water), SDG 12 (sustainable consumption and production or SCP), SDG 9 (industry, innovation and infrastructure), and SDG 11 (sustainable cities and communities).

The topic on plastics emerged in the 2021 National Plan of Action on Marine Litter (NPOA-ML) and the Extended Producer Responsibility Act of 2022 (otherwise known as RA 11898). Amending RA 9003, the Extended Producer Responsibility (EPR) law introduces new concepts and terms in the legal framework, such as plastic, plastic neutrality, extended producer responsibility, circular economy, and “obliged enterprises”.

---

<sup>6</sup> To wit: the 2012 Manila Declaration Furthering the Implementation of the Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-based Activities; the 2018 Iloilo Ministerial Declaration "East Asian Region Moving as One to Secure Healthy Oceans, People and Economies" of the 6th Ministerial Forum at the East Asian Seas Congress; the 2019 United Nations Environment Assembly (UNEA) in Nairobi where member states agreed to significantly reduce single-use plastics; the 2019 Bangkok Declaration on Combating Marine Debris in the ASEAN region; the 2019 24th Intergovernmental Meeting of the Coordinating Body on the Seas of East Asia (COBSEA) on the Regional Action Plan on Marine Litter (RAP MALI), which agreed on four main actions to include prevention and reduction of marine litter from land-based sources, preventing and reducing marine litter from sea-based sources, monitoring and assessment of marine litter and activities in support of the RAP MALI.

### 3. Solid Waste Management Implementation Constraints at the Local Government Level

There have been advances in legislation, technical guidelines, and technology for the management of solid waste. However, after more than two decades since the enactment of RA 9003, local governments continue to face challenges in fulfilling the devolved function on solid waste management. These constraints are exemplified by the following:

- a) **Not all local governments have established local solid waste management boards (SWMBs) and solid waste management councils (SWMCs).** Even in LGUs with SWMBs and SWMCs, not all are active. As of 2010, only 68% of provinces, 37% of cities and municipalities, and 13% of barangays had active SWMBs/SWMCs. Barangays are the frontliners of segregation, collection of compostable and reusable waste, but, as of 2018, only 32% of the total number of barangays were served with MRFs (DENR-EMB, 2018). As of 2021, there were 11,637 MRFs servicing 16,418 barangays, comprising 39.05% of 42,046 barangays (COA, 2023).

**Table 5. Solid waste management boards and barangay-level committees, as of 2010**

Number of LGUs (As of 2018 <sup>7</sup> )	SWMBs/SWMCs Created	Active SWMBs/SWMCs	Proportion of Active SWMBs/SWMCs to total number of LGUs
81 Provinces	70 (86%)	55 (78%)	68%
1,634 Cities and Municipalities	996 (61%)	614 (61%)	37%
42,044 Barangays	18,249 (43%)	5,549 (30%)	13%

Source: [https://legacy.senate.gov.ph/publications/SEPO/AAG\\_Philippine%20Solid%20Wastes\\_Nov2017.pdf](https://legacy.senate.gov.ph/publications/SEPO/AAG_Philippine%20Solid%20Wastes_Nov2017.pdf)

- b) **Local governments face difficulty in formulating solid waste management plans (SWMPs) according to guidelines set by the National Solid Waste Management Council (NSWMC).** As of July 2022, only 68 percent of 1,716 LGUs had approved SWMPs. Regions with below 50 percent approval are Regions 5, 4B, and the Bangsamoro Autonomous Region of Muslim Mindanao (BARMM). As of April 2025, there were 927 LGUs with approved SWMPs (58.23% of LGUs), down from 1,175 in July 2022.<sup>8</sup> Others were for renewal (492; 30.9%), and 173 (10.8%) were returned for completion.

<sup>7</sup> <https://psa.gov.ph/content/12-new-barangays-established-first-quarter-2018>.

<sup>8</sup> See: EMB Solid Waste Management Division Dashboard, May 22, 2025. Retrieved from: <https://nswmc.emb.gov.ph>



**Table 6. Status of 10-year Solid Waste Management Plans of LGUs, as of 27 July 2022**

REGION	No. of Approved SWMPS	% Approved	No. of Submissions	Under Evaluation	Total No. of LGUs
1	71	55		58	129
2	67	68	1	30	98
3	122	89		15	137
5	39	33		81	120
6	118	85		21	139
7	88	65	1	47	136
8	77	52	1	71	149
9	53	71		22	75
10	90	92		8	98
11	48	89		6	54
12	45	85		8	53
13	78	100			78
4A	106	72		41	147
4B	38	49		40	78
BARMM	44	35	61	19	124
CAR	74	89		9	83
NCR	17	94	1		18
Total	1,175	68	65	476	1,716

Source: NSWMC (n.d) (<https://nswmc.emb.gov.ph/>)

- c) **Local government access to sanitary landfills (SLFs) is low.** While the number of SLFs has grown from less than 4 before 2004 to 166 by 2018, the proportion of LGUs with access to SLFs remains very low at 21.7 percent of the total number of LGUs; not to mention that 5 of 166 SLFs are not operational (DENR-EMB, 2018). As of 2021, there were 245 operational SLFs servicing 478 (29.25%) of 1,634 LGUs (COA, 2023). Although SLFs are a major component of the SWMP, LGUs face financial and technical limitations (COA, 2023) and scarcity of organizational resources (Premakura et al., 2013). As of April 2025, there were 366 operational SLFs servicing 677 LGUs<sup>9</sup>, higher than the 245 operational SLFs servicing 478 LGUs in 2023.

<sup>9</sup> See: EMB Solid Waste Management Division Dashboard, May 22, 2025. Retrieved from: <https://nswmc.emb.gov.ph>

- d) **Inherent limitations of RA 9003.** The law's focus is on municipal waste, which is defined as waste produced within local government units (Art 1, Sec. 3, RA 9003). It is mainly focused on land-based sources of waste with oblique reference to prohibitions against "littering, throwing, dumping of waste matters in public places and canals" (Section 48). The lens of the law does not capture transboundary waste generation, whether inter-local or international. The Philippines has 1,715 provincial, city, and municipal LGUs in three island groups. Municipal waste in one LGU is not just produced within the LGU but also compounded by transboundary waste through common municipal waters or upstream-downstream flows of river waste. Neither does the law define plastic waste and marine litter, which have transboundary characteristics. Transboundary waste management demands vertical coordination (local, national, international) and interoperability of monitoring and regulations.
- e) **Vague financing commitment for law implementation.** Findings from a review of solid waste management policies conducted by Apostol et al. (2022) suggest that finance provisions are either generic, vague, or mentioned in passing without a breakdown of costs and sources of financing. RA 9003 does not provide a floor-ceiling hypothecated funding for solid waste management. The financing provision of the law (Art V, Section 46) specifies two sources: (a) the SWMF sourced from fines, penalties, and proceeds from permits and licenses issued by the DENR; and (b) unquantified amounts appropriated under the annual General Appropriations Act (GAA).<sup>10</sup> The first is suggestive of funding that may rise commensurate with the rise in non-compliance and corresponding accumulation of fines and penalties. The second is dependent on annual budget proposals submitted to Congress

A 2008 collaborative study conducted by the NEDA, NSWMC, and World Bank suggests that cities (excluding Metro Manila) would require PHP 3.98 billion in additional SWM investments and PHP 973.2 million for municipalities. Local government funding alone would be difficult. For cities, the additional investments would comprise 23% of the Internal Revenue Allotment (IRA) and 45% of net operating income; for municipalities, 25% of IRA and 160% of net operating income. In short, while cities have fiscal space, municipalities cannot afford to install ecological SWM that is compliant with RA 9003.

The study recommended activation of the NSWMF as main vehicle and a national government (NG)-local government (LG) cost-sharing scheme: 40%, 25% and 20% gradated NG share for 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> class cities and 10%, 40% and 50% NG share for 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> class municipalities. In the 2003 LGU Financing Framework approved by the NEDA Board in March 2003 and adopted by the Department of Finance in 2007, the NG does not provide any cost-share for 1<sup>st</sup> to 4<sup>th</sup> class cities. The new sharing scheme was approved by the President in 2009 (NSWMC-NEDA, n.d.). With the inclusion of 1<sup>st</sup> to 4<sup>th</sup> class cities, the estimated investments would be PHP 4.49 billion for cities and PHP 3.21 billion for

---

<sup>10</sup> In RA 11898 (EPR Law), the budget for implementation is charged against the annual appropriations for the DENR. Obligated enterprises and their producer responsibility organizations (PROs) shall be responsible for funding of their EPR programs.

municipalities. Also in 2009, the President approved a budget of PHP 2.9 billion in NG share (34.6%) contingent on LGU contribution (loans and equity) of PHP 5.3 billion (65.4%). NG financing would be provided for the acquisition of solid waste collection equipment, establishment of MRF, disposal management, and the required submission of a project proposal. The first beneficiary was LGU Talusan (Zamboanga Sibugay) with a grant of PHP 700,000.

The 2008 estimate of LGU needs did not take into account investment costs for the establishment of SLFs. In a 2007 case study of three cities, JICA (2007) cited that the cost of an SLF could range from PHP 61.7 million in initial capital outlay for a small city like Sagay (Negros Occidental) with 31 MT/day solid waste generation, and PHP 268 million for a big city like Davao with 731 MT/day solid waste generation. In the case of Bohol, the ACSL already costs PHP 300 million.

To date, however, the NSWMF is not yet activated (COA, 2023). Section 46 of RA 9003 provides that a Solid Waste Management Fund (SWMF) shall be created as a special account in the National Treasury. This fund would be administered by the NSMWC and would be sourced from fines and penalties imposed, proceeds of permits and licenses issued by the DENR under this Act, donations, endowments, grants, and contributions from domestic and foreign sources, and amounts appropriated from the annual General Appropriations Act (GAA). Even the NSWMC itself does not have a fixed budget. It does not appear in the budget items of what is appropriated to the DENR in the General Appropriations Act.

- f) **Lack of clear guidance on local implementing mechanism for the SWMP.** While RA 9003 mandates the creation of multi-stakeholder solid waste management boards (SWMB) at the provincial, city, and municipal levels and 10-year SWMPs, it is silent on the implementation mechanism. SWMBs are policy and planning mechanisms that coordinate with the NSWMC. It is not clear which agency of the LGU is primarily responsible for executing the SWMP. By default, this task falls on the local chief executive (LCE), who chairs the SWMB. In principle, the LCE needs to delegate this task to a specific agency. Some LCEs delegate SWMP implementation to the General Services Office (GSO) and others to Municipal/City Environment Offices (MENRO/CENRO). However, not all LGUs have created plantilla (regular) positions for ENROs. In many low-income LGUs, ENROs are designated, or a second function of a regular division head, such as the local planning and development coordinator, who, by itself, is not an implementing agent but a coordinating agent for development planning.
- g) **Devolution of SWMP implementation without adequate financial and technical support and empowerment.** Key performance indicators after more than two decades of RA 9003 (39.05% barangay access to MRFs, 29.25% access to SLFs, and 68% of LGUs with approved SWMPs) suggest difficulty in exercising devolved authority in SWMP implementation. In a recent study, Doming & Manejar (2021) put the spotlight on the flaw in the implementation of RA 9003 - the overly simplistic transfer of responsibility to LGUs resulting in two decades of shallow policy

grounding. Moreover, approval of SWMPs is highly centralized, which makes it difficult to synchronize the integration of SWM planning and budgeting to the CDP according to the local government planning cycle. Even the processing, marketing, and sale of organic and designated recyclable materials generated in each LGU is to be regulated by the NSWMC (Sec. 5s, RA 9003). This runs contrary to the power of LGUs to generate their own sources of funds, including the establishment of local economic enterprises. Moreover, the sale of recyclables is driven by market realities, specifically, supply and demand factors, and the autonomous choice of consumers.

There is a need to sensitize national standards to local realities and balance the penalty side of regulation (non-approval of SWMPs and SLFs and litigation of illegal dump sites) with investments in sustainable solutions. In January 2021, the DENR stopped the operations of a 3,000 sqm and 1-hectare open dump site in the municipalities of Talisayan and Salay (Misamis Oriental<sup>11</sup>). With the closure, LGUs have the option of bringing solid waste to an existing SLF or to a residual containment area. The concerned LCEs expressed the need for financial assistance. While illegal dumpsites are prohibited and should be closed, LGUs need support in seeking solutions with due consideration to urgency. Considering limitations in access to approved SLFs and the time needed to develop a containment area (acquisition of land for containment and budget approval from the Sanggunian), closure processes should include immediate support for finding solutions.

- h) **Culture of convenience manifested in the behavior of consumers and market suppliers.** Throw-away culture is associated with consumerism, overconsumption, and preference for short-lived commodities, which maximize profit.<sup>12</sup> It emerged at the conjuncture of post-World War II, when economies were driven by the need to consume, and manufacturers saw an opportunity to save on production costs and simplify supply chains by using throw-away packaging such as plastics.<sup>13</sup>

In the early days prior to the introduction of plastics, Filipinos relied on *tiangges*, *sari-sari stores*, and *tabo* (traditional market day) that bridged consumers with fishers and farm producers in places near their homes without the need for packaging. This was the old *tingi* system that did not leave non-biodegradable waste. However, the *tingi* system has been appropriated by big business, which introduced plastic sachets that reach out to the masses of low-income consumers. Even traditional *sari-sari* stores are either transformed into outlets of throw-away plastic sachets and bottles or driven out of the market due to liberalization of retail trade.

---

<sup>11</sup> See: "DENR crackdown on illegally operating dumpsites continues," NSWMC-EMB, February 23, 2021. Retrieved from: <https://nswmc.emb.gov.ph/?p=4039>

<sup>12</sup> See: <https://www.paper-round.co.uk/blog/view/throwaway-culture-unwrapped>

<sup>13</sup> See: <https://hk.boell.org/en/2021/04/22/throwaway-culture-world-wallowing-waste>



## 4. Policy Recommendations

Taking stock of the relevant issues and alternative policy options, participants of the 29 May 2025 inter-agency dialogue prioritized three areas of administrative actions with estimation of technical and financial feasibility and political viability: (a) integrating CE and SWM in CDP through a joint policy; (b) incentivizing partnerships with private sector; and, (c) stock-taking LGU readiness to EPR.

### Recommendation 1: Integrating CE and SWM in CDP through a joint memorandum circular (JMC)

- a) **Concerned Agencies:** DILG, DENR, DHSUD, and CCC
- b) **Subject:** Guidelines for integrating circular economy-oriented SWMP into the CDP
- c) **For/Addressed To:**
  - Provincial Governors and Municipal and City Mayors
  - Sanggunians of provinces, cities, and municipalities
  - Barangay Councils
  - DILG Regional Directors, Provincial and City Directors, and Municipal Local Government Operations Officers (MLGOOs)
  - DHSUD Regional Directors
  - DENR Regional Executive Directors and PENROs
- d) **Prefatory Statement**

In the prefatory statement, the JMC can cite the following justifications:

- i. **Solid waste generation in the Philippines is on the rise and is a pressing national issue.** The DENR-EMB (2018) projected that waste generation is expected to grow from 13.48 million metric tons (MT) in 2010 to 14.6 million MT in 2014 and 18.05 million MT by 2020. Updated data available at the EMB Dashboard revised the previous 2020 projection at 18.05 million MT to 21 million MT. By 2025, waste generation is expected to rise to 22.9 million MT per year.
- ii. **The rate of solid waste generation is associated with urbanization.** Factoring population growth, the weighted national average of waste generation is 0.4kg/capita/day. In the National Capital Region, the weighted average is 0.61/kg/capita/day. Combining NCR and highly urbanized cities, the weighted average is 0.69/kg/capita/day. As of March 2025, there were 33 highly urbanized cities (HUCs) from a total of 149 cities in the country. In its 2000 national communication to the UNFCCC, the Philippines reported that an increase in urban population will lead to an increase in methane emissions from solid waste (Republic of the Philippines, 2000).

- iii. **Most of the solid waste is generated by people in their homes and by commercial enterprises.** As of 2015, 56.7% of waste is generated by households, 28% by commercial enterprises, 12% by public institutions such as government offices, schools, and hospitals, and 4% from the industrial and manufacturing sectors (NSWMC, 2015). It is important to sustain public awareness campaigns to combat the 'throw-away' culture. Solid waste can be reduced, recycled, or reused. Typical waste is made up of biodegradables (52.32%), recyclables (27.78%), and residual wastes (17.98%) (De Paz et al., 2020).
- iv. **Plastics in municipal waste leak into the ocean through river bodies.** In a 2019 study, Meijer et al. (2021) calculated that 8.9% of the estimated 4 million MT of mismanaged plastic waste (MPW) was leaked to the ocean through 4,820 rivers in the Philippines.
- v. **Solid waste contributes to GHG emissions.** In 2010, the Philippines' waste sector contributed 11% (15.6 Mt CO<sub>2</sub>e) of the country's greenhouse gas emissions (CCC, 2010). An estimated 68% (10.56 Mt CO<sub>2</sub>e) came from wastewater treatment and discharge, and 31% (4.9 Mt CO<sub>2</sub>e) came from solid waste. In 2014, the country reported a 64% increase in greenhouse gas emissions from the waste sector from the 1994 baseline (Republic of the Philippines, 2014).
- vi. **People's access to solid waste management systems remains low.** Fifty percent of household waste is connected to the local government system of garbage collection, and the other fifty percent is self-managed by households, either by dumping (10.2%), burning (16.3%), composting (8.6%), or burying (4.3%), among other methods (PSA 2020 Census of Population and Housing). Although already prohibited by law, the practice of burning waste is still significantly high at 16 percent of households. Barangays are the frontliners of segregation, collection of compostable and reusable waste, but, as of 2018, only 32% of the total number of barangays were served with MRFs (DENR-EMB, 2018). As of 2021, there were 11,637 MRFs servicing 16,418 barangays, comprising 39.05% of 42,046 barangays (COA, 2023).
- vii. **Local government access to sanitary landfills (SLFs) is low.** While the number of SLFs has grown from less than 4 before 2004 to 166 by 2018, the proportion of LGUs with access to SLFs remains very low at 21.7 percent of the total number of LGUs; not to mention that 5 of 166 SLFs are not operational (DENR-EMB, 2018). As of 2021, there were 245 operational SLFs servicing 478 (29.25%) of 1,634 LGUs (COA, 2023). Although SLFs is a major component of the SWMP, LGUs face financial and technical limitations (COA, 2023) and scarcity of organizational resources (Premakura et al., 2013). As of

April 2025, there were 366 operational SLFs servicing 677 LGUs<sup>14</sup>, higher than the 245 operational SLFs servicing 478 LGUs in 2023.

- viii. **Not all local governments have established local solid waste management boards (SWMBs) and solid waste management councils (SWMCs).** Even in LGUs with SWMBs and SWMCs, not all are active. As of 2010, only 68% of provinces, 37% of cities and municipalities, and 13% of barangays had active SWMBs/SWMCs.
- ix. **Local governments face difficulty in formulating solid waste management plans (SWMPs)** according to guidelines set by the National Solid Waste Management Council (NSWMC). As of July 2022, only 68 percent of 1,716 LGUs had approved SWMPs. Regions with below 50 percent approval are Regions 5, 4B, and the Bangsamoro Autonomous Region of Muslim Mindanao (BARMM). As of April 2025, there were 927 LGUs with approved SWMPs (58.23% of LGUs), down from 1,175 in July 2022.<sup>15</sup> Others were for renewal (492; 30.9%), and 173 (10.8%) were returned for completion.
- x. **The Philippines is one with the global community in formally recognizing the need for resource efficiency and reduction of the world's waste footprint by 2030.** Waste management indicators are included in three global goals: SDG 11 (sustainable cities and communities), SDG 12 (responsible production and consumption), and SDG 14 (life below water). Specific indicators include municipal solid waste collection (SDG 11.6.1), food loss and waste indices (SDG 12.3.1), national recycling rate (SDG 12.5.1), and marine plastic density (SDG 14.1.1).

## e) Legal Bases

The JMC can cite the following legal bases:

### I. Local Government Code of 1991 (RA 7160)

- Exercise the powers and discharge the duties and functions currently vested upon them. They shall also discharge the functions and responsibilities of national agencies and offices devolved to them pursuant to this Code; exercise such other powers and discharge such other functions and responsibilities as are necessary, appropriate, or incidental to efficient and effective provisions of the basic services and facilities (Sec. 17).

---

<sup>14</sup> See: EMB Solid Waste Management Division Dashboard, May 22, 2025. Retrieved from: <https://nswmc.emb.gov.ph>

<sup>15</sup> See: EMB Solid Waste Management Division Dashboard, May 22, 2025. Retrieved from: <https://nswmc.emb.gov.ph>

- Power, function, and responsibility of barangays to provide services and facilities related to general hygiene and sanitation, beautification, and solid waste collection (Sec. 17 (b) (1) (ii)).
- Power, function, and responsibility of municipalities to establish a solid waste disposal system or an environmental management system and services or facilities related to general hygiene and sanitation (Sec. 17, (b) (2) (vi); regulate the disposal of clinical and other wastes from hospitals, clinics, and other similar establishments (Sec. 447 (4) (iii); provide for an efficient and effective solid waste and garbage collection disposal and prohibit littering and the placing or throwing of garbage, refuse, and other filth and wastes (Sec. 447 (5) (xiii)).
- Power, function, and responsibility of provinces to provide infrastructure facilities intended to service the needs of the residents of the province (Sec. 17 (b) (3) (vii)).
- Power, function, and responsibility of cities to provide all services and facilities provided by the province and municipality (Sec. 17, (b) (4)).

## **II. Ecological Solid Waste Management Act of 2000 (RA 9003)**

- Creating the National Solid Waste Management Commission (NSWMC), chaired by DENR, to oversee the implementation of solid waste management plans (Sec. 4).
- Mandating the NSWMC to prepare the National Solid Waste Management Framework, approve local SWM plans, and monitor their implementation (Sec. 5).
- Creating the Solid Waste Management Fund (SWMF), and entitling LGUs to avail of the fund (Sec. 46).
- Assigning primary responsibility of implementation and enforcement of the provisions of the Act to LGUs in their jurisdictions (Sec. 10).
- Authority of LGUs to collect solid waste management fees (Sec. 47).
- Provision of rewards, monetary or otherwise, to individuals, organizations, and private entities, fiscal and non-fiscal incentives to business enterprises, and fiscal and non-fiscal incentives to LGUs (Sec. 45)
- Mandating provinces, cities, municipalities, and barangays to coordinate or consolidate their efforts, services, and resources through local ordinances and establish common waste treatment and disposal facilities (Sec. 44).



- Local governments to be responsible for the implementation and enforcement through a Local Solid Waste Management Plan; segregation and collection of biodegradable waste at the barangay level, otherwise, at the city/municipal level.
- Mandates the creation of SWM Boards at various local government levels to ensure long-term management of solid waste.
- Allows LGUs clustering for the solution of common solid waste problems.
- Adopts a national integrated program for solid waste management, which covers generation, segregation, collection, reuse, recycling, composting, transport, and disposal.

### **III. Extended Producer Responsibility Act of 2022 (RA 11898) and its Implementing Rules and Regulations (DENR DAO 2023-02)**

- Retain primary enforcement and responsibility of solid waste management with local government units while establishing a cooperative effort among the national government, other local government units, non-government organizations, and the private sector (Sec. 5.7)
- Encourage cooperation and self-regulation among waste generators through the application of market-based instruments (Sec. 5.8).
- Integrate public participation in the development and implementation of national and local comprehensive and ecological solid waste management programs (Sec. 5.9).
- Institutionalize the extended producer responsibility mechanism as a practical approach to efficient waste management, focusing on waste reduction, recovery, and recycling, and the development of environment-friendly products that advocate the internationally accepted principles on sustainable consumption and production, circular economy, and producers' full responsibility throughout the lifecycle of their product (Sec. 5.11)

#### **IV. Climate Change Act of 2009 (RA 9729) and Its IRR (CCC Resolution No. 3, s.2015)**

- CCC to formulate and develop a Framework Strategy on Climate Change upon **consultation with government agencies, LGUs**, private sector, NGOs and civil society, which will consolidate and institutionalize government initiatives to serve as the basis for a program on climate change planning, research and development, extension, and monitoring of activities, programs and projects on climate change (Sec. 1b, Rule VI).
- CCC to **coordinate with local government units** and private entities to address vulnerability to climate change impacts of regions, provinces, cities, and municipalities. Towards this end, an '**LGU Coordinative Unit**' within the **CCO** shall be established. The **LGUs, in turn, are encouraged to create their climate change focal units up to the barangay level** (Sec. 1 (I), Rule VI).
- **LGUs shall be the frontline agencies** in the formulation, planning, and implementation of climate change action plans in their respective areas, consistent with the provisions of the Local Government Code, the Framework, and the NCCAP (Sec. 4, Rule VIII).
- Barangays shall be directly involved with municipal and city governments in prioritizing climate change issues and in identifying and implementing best practices and other solutions (Sec. 4, Rule VIII).
- Municipal and city governments shall consider climate change adaptation as one of their regular functions. (Sec. 4, Rule VIII).
- Provincial governments shall provide technical assistance, enforcement, and information management in support of municipal and city climate change action plans. (Sec. 4, Rule VIII).
- Inter-local government unit collaboration shall be maximized in the conduct of climate-related activities. (Sec. 4, Rule VIII).
- Climate Change Office to assist partners, especially Local Government Units, in the development of programs and projects on climate change (Sec. 1a(vi), Rule V)

#### **V. Public-Private Partnership Code of 2023 (RA 11966)**

- The State recognized the autonomy of local government units (LGUs) in entering and implementing Local PPP Projects to enable them to attain their

fullest development as self-reliant communities and make them more effective partners in the attainment of national goals (Sec. 2).

- The State shall also ensure the integration of climate resilience, sustainability, and gender and development policies and programs in the planning, design, and implementation of PPP Projects (Sec. 2).
- Local PPP Projects shall be approved by the respective local Sanggunians in the case of LGUs, or by the boards in the case of LUCs. Prior to approval, Local PPP Projects implemented by LGUs shall be confirmed by the respective local development councils (LDCs). (Sec. 7(2)).
- Local PPP Projects affecting national or sectoral development plans and national projects shall likewise secure the endorsement of the National Government through the respective RDCs, prior to endorsement of the LDC concerned and approval by the local Sanggunians concerned in the case of LGUs, or by the boards in the case of LUCs. (Sec. 7(2)).

#### **VI. Clean Water Act of 2004 (RA 9275)**

- Local government units shall share the responsibility in the management and improvement of water quality within their territorial jurisdictions (Sec. 20).
- The DENR and LGUs, in coordination with the appropriate government agencies, and in consultation with the business and industrial sectors, including commerce, shall formulate appropriate incentives for the adoption procedures that will preserve and protect our water bodies through the introduction of innovative equipment and processes that reduce or totally eliminate discharge of pollutants into our water bodies (Sec. 21).
- This Act shall apply to water quality management in all water bodies: Provided, that it shall primarily apply to the abatement and control of pollution from land-based sources (Sec. 3).

#### **VII. Executive Order No. 174, s. 2014 – Institutionalizing the GHG Inventory and Reporting System**

- Institutionalize the GHG inventory management and reporting system in relevant government agencies to enable the country to transition towards a climate-resilient pathway for sustainable development.
- The CCC, as the overall lead, may invite concerned Local Government Units, academe, private, and public institutions to participate, complement, and assist in the implementation of the policy.

## f) Definition of Terms

Terms	Definition
Circular Economy	<i>An economic model of creating value by extending product lifespan through improved design and servicing and relocating ways from the end of the supply chain to the beginning. This intends to efficiently utilize resources by its continual use and aims to retain the highest utility and value of products, components, and materials at all times, through sharing, leasing, reuse, repair, refurbishment, and recycling in an almost closed loop (RA 11898).</i>
Composting	The systematic decomposition of organic matter by micro-organisms, mainly bacteria and fungi, into a humus-like product (RA 11898).
Disposal	Discharge, deposit, dumping, spilling, leaking, or placing of any solid waste into or in any land (RA 11898).
Dump	Open Disposal area wherein the solid wastes are indiscriminately thrown or disposed of without due planning and consideration for environmental and health standards (RA 11898).
Ecological Solid Waste Management (EWSM)	The systematic administration of activities which provide for segregation at source, segregated transportation, storage, transfer, processing, treatment, and disposal of solid waste and all other waste management activities which do not harm the environment (RA 11898, RA 9003).
Extended Producer Responsibility	Environmental policy approach and practice that requires producers to be environmentally responsible throughout the life cycle of a product, especially its post-consumer or end-of-life stage (RA 11898).
Green Financing	Investments that create environmental benefits in support of green growth, low-carbon, carbon avoidance, and sustainable development, and the use of alternative assets such as carbon credits, such as those pursuant to Article VI of the Paris Agreement, or ecosystem services (Sec. 3, RA 11966).
Hazardous Waste	Solid waste or combination of solid waste which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to an increase in mortality or an increase in serious

	irreversible, or incapacitating reversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. (RA 11898)
Informal Waste Sector	Individuals, families, groups, associations, or enterprises engaged in the recovery of waste materials for livelihood and income either on a full-time or part-time basis. They work with/without any formal recognition by any government accreditation, licensing or regulating agency. They have no social and economic security and work under substandard and unhealthy work conditions and have limited access to basic services. They are classified as: itinerant waste collectors/buyers, jumpers at collection trucks, garbage crew ("paleros"), waste reclaimers and unlicensed junk shops. (RA 11898).
Local Public-Private Partnership	A PPP Project that is undertaken by LGUs and LUCs (Sec. 3, RA 11966)
Materials Recovery Facility (MRF)	Includes solid waste transfer station or sorting station, drop-off center, a composting facility, and a recycling facility (RA 11898).
Municipal Waste	Waste produced from activities within local government units, which include a combination of domestic, commercial, institutional, and industrial wastes and street litter (RA 11898).
Plastic	A synthetic material made from a wide range of organic polymers such as polyethylene terephthalate, high density polyethylene, low density polyethylene, polypropylene, polystyrene, PVC, and nylon that can be processed to form solid objects of various shapes (RA 11898).
Plastic Neutrality	A system or its desired outcome where, for every amount of plastic product footprint created, an equivalent amount thereof is recovered or removed from the environment by the product producers through an efficient waste management system. (RA 11898)
Plastic Waste Footprint Reduction	Refers to the consequent reduction in plastic packaging footprint and in plastic waste footprint diversion targets due to the adoption and implementation of waste avoidance and prevention activities and strategies, such as retail refilling stations or product or packaging redesign, under Section 44-A

	RA 9003, as amended by the EPR Act of 2022 and Part V of the EPR IRR. (RA 11898)
Public-Private Partnership (PPP)	Refers to any public infrastructure or development projects and services implemented under this Code (Sec. 3, RA 11966).
Recycling	Refers to the treating of used or waste materials through a process of making them suitable for beneficial use and for other purposes and includes any process by which solid waste materials are transformed into new products in such a manner that the original products may lose their identity, and which may be used as raw materials for the production of other goods or services: Provided that the collection, segregation and re-use of previously used packaging material shall be deemed recycling under the Act. (RA 11898)
Re-Use	The process of recovering materials intended for the same or different purpose without the alteration of physical and chemical characteristics. (RA 11898)
Sanitary Landfill	Refers to a waste disposal site designed, constructed, operated, and maintained in a manner that exerts engineering control over significant potential environmental impacts arising from the development and operation of the facility. (RA 11898)
Segregation	Refers to sorting and segregation of different materials found in solid waste in order to promote recycling and re-use of resources and to reduce the volume of waste for collection and disposal. (RA 11898)
Solid Waste	Also described as “Municipal Solid Waste” or “MSW” shall refer to all discarded household, commercial waste, non-hazardous institutional, ports/harbors and industrial waste, street sweepings, construction debris, agriculture waste, and other non-hazardous/non-toxic solid waste. (RA 11898)
Solid Waste Management	Refers to the discipline associated with the control of generation, storage, collection, transfer and transport, processing, and disposal of solid wastes in a manner that is in accord with the best principles of public health, economics, engineering, conservation, aesthetics, and other environmental considerations, and that is also responsive to public attitudes. (RA 11898)



Solid Waste Management Facility	Refers to any resource recovery system or component thereof; any system, program, or facility for resource conservation; any facility for the collection, source separation, storage, transportation, transfer, processing, treatment, or disposal of solid waste. (RA 11898)
Special Wastes	Refers to household hazardous wastes such as paints, thinners, household batteries, lead-acid batteries, spray canisters and the like. These include wastes from residential and commercial sources that comprise of bulky wastes, consumer electronics, white goods, yard wastes that are collected separately, batteries, oil, and tires. These wastes are usually handled separately from other residential and commercial wastes. (RA 11898)
Sustainable Consumption and Production	Refers to the use of services and related products that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources and toxic materials, as well as the emission of wastes and pollutants over the lifecycle of the service or product so as not to jeopardize the needs of future generations. (RA 11898)
Waste Characterization	Identification of specific types of materials in a waste stream, its composition and sources. Enables understanding of how much organic waste and/or recyclables are being disposed in landfills, which sectors are responsible for waste generation, how much contamination is in the segregated waste stream and what type of anaerobic digestion process or technology would be best suited for organic waste management. (Waste Characterization Handbook: Understanding Municipal Waste Streams to Develop Data-Driven Methane Mitigation Strategies, <a href="https://globalmethane.org">https://globalmethane.org</a> )
Waste Diversion	Refers to activities which reduce or eliminate the amount of solid wastes from waste disposal facilities. (RA 11898)
Waste Generation	The act or process of producing solid waste (RA 11898).

## g) Guidelines

The proposed JMC can contain the following guidelines:

- i. Encourage LGUs to enhance the local government's Solid Waste Management Plan

Existing Components of the SWMP (Sec. 17, RA 9003)	Recommended Enhancements
a) City or Municipal Profile (population, illustration map, estimated solid waste generation and projection, inventory of solid waste disposal facilities and capacities)	a) <b>Include Provincial profile</b> in the PDPFP and <b>barangay</b> profile in the BDP. <ul style="list-style-type: none"> <li>Population data to include vulnerability to health risks due to exposure to toxic waste.</li> </ul>
b) Waste characterization (identify constituent materials of solid waste generated within the jurisdiction of the LGU; as representative data on solid waste generated and disposed within the jurisdiction)	b) Waste characterization <ul style="list-style-type: none"> <li>Include solid waste generated from other jurisdictions but brought to the LGU due to other factors (such as waste in shared municipal waters or waste through rivers from an upstream LGU to a downstream LGU). This is important in establishing the logic for cooperation in solving common problems.</li> </ul>
c) Collection and transfer	c) Collection and transfer <ul style="list-style-type: none"> <li>Include provision of technical support to barangays.</li> </ul>
d) Processing	d) Processing
e) Source reduction	e) Source reduction <ul style="list-style-type: none"> <li>Include strategies and technologies for source reduction for solid waste generated from other jurisdictions.</li> </ul>
f) Recycling	f) Recycling <ul style="list-style-type: none"> <li>Include responses related to provisions of RA 11898 (and its IRR, DENR DAO 2023-02) regarding reduction of plastic footprint, LGU partnership with PROs of obliged enterprises and GHG computation of materials and processes in plastic waste recycling.</li> </ul>
g) Composting	g) Composting

	<ul style="list-style-type: none"> <li>• Include methods for upcycling of composted solid waste such as promotion of urban gardening.</li> </ul>
h) Solid waste facility and final disposal	h) Solid waste facility and final disposal <ul style="list-style-type: none"> <li>• Include strategy for finding solutions to common problems, such as clustering of SLFs and role of provincial governments in facilitating the cluster approach to final disposal.</li> </ul>
i) Education and public information	i) Education and public information <ul style="list-style-type: none"> <li>• Include knowledge dissemination not only through the curricula of the DepEd and CHED but also technical-vocational education of TESDA.</li> <li>• Highlight development of local capacities on SWM, especially at barangay level.</li> </ul>
j) Special waste	j) Special waste <ul style="list-style-type: none"> <li>• Acknowledge problem and need for legislation on handling of health care waste.</li> </ul>
k) Resource requirement and funding	k) Resource requirement and funding <ul style="list-style-type: none"> <li>• Cite PPP as strategy for financing and investments.</li> <li>• Cite need to activate the Solid Waste Management Fund.</li> </ul>
l) Privatization of solid waste management projects	l) Privatization of solid waste management projects <ul style="list-style-type: none"> <li>• Cite provisions of RA 11898 and role of “obliged enterprises” and other stakeholders in the management of plastic waste.</li> <li>• Highlight role of PPP in financing establishment, operations and maintenance of SLFs and private sector participation in recycling and upcycling.</li> </ul>
m) Incentive programs	m) Incentive programs <ul style="list-style-type: none"> <li>• Highlight need to institutionalize the LGUs investments and incentives program through a local ordinance (refer to DILG Legal Opinion No. 109, s. 2022).</li> </ul>

- ii. Enjoin LGUs to integrate circular economy-oriented SWMP in the CDP.
  - (a) Include a description of the solid waste situation and GHG emissions from solid waste in the Ecological Profile.
  - (b) Include a description of climate, disaster, and public health risks due to the mismanagement of solid waste.
  - (c) Include solid waste management outcomes in the LDIS.
  - (d) Incorporate SWM P/A/Ps and expenditure targets in the LDIP and AIP.
- iii. Conduct inventory, manage, and report GHG emissions from solid waste.
- iv. Incentivize private sector participation in SWM, especially in the establishment and management of SLFs, through a local ordinance.
- v. Generate external financing support for SWM through various resource generation and mobilization mechanisms introduced by the DOF-BLGF.
- vi. Enjoin LGUs to place solid waste management under the local environment office. Although the Local Government Code provides that the appointment of the environment officer is optional for provinces, cities, and municipalities (Sec. 483, Sec. 484), the expected functions and responsibilities of the environment officer are appropriately related to solid waste management. In particular: (a) formulation of measures and technical assistance to ensure delivery of services and provision of adequate facilities relative to environment and natural resources services, which includes solid waste disposal systems (Sec. 17, 2 (vi); Sec. 484, b1, b3, b4, and b5).
- vii. Encourage 1<sup>st</sup> and 2<sup>nd</sup> class provinces, cities, and municipalities to create plantilla position and appoint the local environment officer. The concerned LGUs can be guided by the provisions of RA 11964 (Automatic Income Classification of Local Government Units Act of 2023). As provided for in the Act, the automatic income classification is used for the determination of financial capability to undertake development programs and priority projects (Sec. 7, b) and total annual or supplemental appropriation for personal services for one fiscal year (Sec. 7,c), among others.
- viii. Encourage 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> income class LGUs to designate local environment officers.
- ix. Promote environmental education, specifically, ESWM and CE, in the curriculum of the DepEd and CHED, and build local technical and vocational capacities for solid waste management with the support of TESDA.

## **h) Roles and Responsibilities**

### **i. Provincial Local Government Units**

- Prepare a Provincial SWMP that reflects the submitted SWMPs of municipalities and cities, and one that supports the various initiatives of component cities and municipalities.
- Represent any of its component city or municipality in coordinating its resource and operational requirements with agencies of the national government.
- Facilitate clustering of LGUs for the solution of common solid waste management problems, such as the development and financing of clustered SLFs.
- Coordinate efforts of component cities and municipalities.
- Support EPR readiness of municipalities and component cities.
- Promote and support the establishment of multi-purpose environment cooperatives that undertake or support ESWM and the circular economy.

### **ii. Municipal and City Local Government Units**

- Prepare SWMPs that integrate solid waste management plans and strategies of barangays in their jurisdictions.
- Integrate the informal waste sector (IWS) in the municipality's/city's solid waste management system.
- Promote and support the establishment of multi-purpose environment cooperatives that undertake or promote ESWM and the circular economy.
- Prepare local ordinances on standardization of waste collection fees and incentivizing private sector participation in solid waste management.

### **iii. Barangay Local Government Unit**

- Conduct an IEC to promote the 3Rs of solid waste management.
- Integrate the informal waste sector (IWS) in the barangay solid waste management system.
- Establish MRFs.
- Designate a focal person for solid waste management.

iv. **DILG**

- Provide technical support in the integration of CE-oriented SWM in the CDP.
- Develop a supplemental guidebook for mainstreaming CE and SWM in the CDP.
- Collaborate with DENR and DOH in the inventory and publication of solid waste disposal facilities.

v. **DENR**

- Provide technical support on SLF technologies, WTE, and GHG inventory, management, and reporting.
- Through the NSWMC and in collaboration with the DILG, DOF, and DBM, develop guidelines for the utilization of the SWMF and the criteria of availment.

vi. **DHSUD**

- Provide technical support in the integration of SWM in the CLUP.
- Include the establishment of MRFs and SLF (or equivalent clustered SLF) as a requirement in the CLUP.

vii. **CCC**

- Provide technical support in GHG inventory, management reporting.
- Provide guidance on the identification of climate risks, climate outcomes, and outcome indicators in the LDIs

viii. **DOH**

- Collaborate with DENR and DILG in the inventory and publication of solid waste disposal facilities or sites.
- Provide guidance on the identification of public health risks from solid waste and the development of appropriate mitigation measures.



## Recommendation 2: Stocktaking study on LGU readiness to the Extended Producers Responsibility (EPR) Law

The second recommendation derived from the 29 May 2025 inter-agency dialogue is for the DILG and DENR to conduct a joint stocktaking study in aid of formulating a joint memorandum circular towards enhancing LGU readiness for EPR.

### Stocktaking Inquiry and Methodology

The primary purpose of the stocktaking study is to examine the current state of LGU participation in the implementation of RA 11898, particularly, engagement with ‘obliged enterprises’ and their designated Producer Responsibility Organizations (PROs). The result of the study will inform the development of a joint memorandum circular aimed at strengthening LGU capacity in playing a vital role in EPR implementation.

In June 2023, the UN-Habitat Healthy Oceans and Clean Cities Initiatives (HOCCI), DENR-EMB, and DILG Region IV-A developed a Rapid Self-Assessment Tool on EPR Readiness. The tool consists of a checklist with six (6) guide questions:

- 1) Does your locality, whether government- or private sector-driven, currently have a well-functioning segregation and segregated collection system for recyclables such as plastics?
- 2) Does your locality or your local stakeholders currently have programs and facilities that avoid/reuse, recover/consolidate, and/or recycle rigid plastic packaging from the municipal solid waste stream?
- 3) Does your locality or your local stakeholders currently have programs and facilities that avoid/reuse, recover/consolidate, and/or recycle flexible plastic packaging from the municipal solid waste stream?
- 4) Do you have a data management/recording system for waste diversion, particularly including plastic waste?
- 5) How much is your total avoided and recovered plastic packaging (combined tons of rigids and flexibles) per month to potentially generate sufficient waste diversion certificates later on?
- 6) Is your LGU committed to enhance plastic waste diversion and data management to participate in the EPR system?

Responses were provided by representatives of LGUs from the provinces of Batangas, Cavite, Laguna, Quezon, and Rizal, all from Region IV-A or the CALABARZON Region.

In September 2024, the World Wildlife Fund-Philippines (WWF) used a similar tool through an EPR Planning Forum comprising representatives of LGUs from Davao City, San Isidro

Municipality in Davao Oriental, Island Garden City of Samal, Cagayan De Oro City, Barangay Bagong Silang in Caloocan City, Taytay Municipality in Palawan, Quezon City, Manila City and Barangays Del Carmen and General Luna from Siargao Island.

For the stocktaking study, the DILG and DENR could build on the results of the DENR-DILG and HOCCI experience in CALABARZON and the WWF experience in Mindanao, Palawan, and the National Capital Region. The two experiences provided a gateway for understanding EPR readiness of LGUs. The tool and methodology can be enhanced such that the results could yield deeper understanding of readiness to EPR according to the following characteristics of subject LGUs, e.g. type of LGU (province, city, municipality), income class category, level of urbanization and volume of waste and geographic location (i.e. proximity and or distance from areas of operation of 'obliged enterprises' or their PROs).

### Prospective Contents of the JMC

Key Elements	Description
Subject	Guidelines for enhancing LGU readiness to EPR.
Purpose	Strengthen capacity of LGUs to play a vital role in local implementation of the EPR law.
Possible indicators readiness	<p>Parameters for determining whether an LGU is EPR ready, such as:</p> <ul style="list-style-type: none"> <li>Updated waste characterization indicating tonnage of recovered plastic waste (rigid and flexible). Economies of scale indicate reduction of per unit cost in solid waste disposal.</li> <li>Location of plastic waste collection that offers cost-effective variables for transport and logistics.</li> <li>Updated list of solid waste management facilities.</li> <li>LGU commitment towards reduction of plastic waste demonstrated through a roadmap or the SWMP.</li> <li>Local ordinance strictly regulating use of single-use plastics.</li> <li>Well-functioning system of household/establishment waste segregation and segregated collection system for recyclables.</li> <li>Local programs that promote reuse and recycling of plastic waste.</li> <li>Recording and data management system for waste diversion, including plastic waste.</li> </ul>
Guidelines	The guidelines will gravitate around indicators of readiness and how to achieve them.
Measures to establish readiness	Measures to establish readiness will be customized according to status of readiness (e.g. high, medium, low) or availability or absence of readiness indicators.

Targets of LGU engagement	Obligated Enterprises, Collectives and PROs with EPR programs registered with the National Solid Waste Commission (NSWMC) through the National Ecology Center (NEC)
Minimum requirements for engaging 'obliged enterprises', collectives and PROs	<ul style="list-style-type: none"> <li>• Economies of scale. For small LGUs, the provincial government can facilitate clustering and consolidation of plastic waste as basis for engaging Producer Responsibility Organizations (PROs).</li> <li>• Central collection point for required volume of plastic waste.</li> <li>• Incentives program and related local ordinance.</li> </ul>
Certification of readiness	<p>The DILG and DENR can delegate issuance of certification readiness to their regional offices.</p> <p>The certification shall be used by obliged enterprises, collectives and PROs as basis for engaging and entering into partnership with the LGU.</p>
Certification of compliance of obliged enterprises, collectives and PROs	Per DENR DAO Administrative Order No. 2024-04, the certification of compliance of obliged enterprises, collectives and PROs shall be the third-party EPR Compliance Audit Report (ECAR), which will certify correctness of the annual EPR Compliance Reports (ECR).

### Suggested Roles and Responsibilities

- a) DILG and DENR to jointly conduct the stocktaking study and, subsequently, issuance of the joint memorandum circular.
- b) The National Ecology Center to develop the contents of the joint memorandum circular.
- c) The Department of Trade and Industry (DTI) to help develop parameters and indicators of EPR readiness.
- d) DENR and DILG regional offices to issue certification of LGU EPR Readiness.
- e) Certified Public Accountant (CPA) duly accredited by the Professional Regulatory Commission Board of Accountancy and agreed upon by the DENR to act as third-party auditor for issuance of the EPR Compliance Audit Report.

## Recommendation 3: Incentivizing partnerships with private sector

The third recommendation derived from the 29 May 2025 inter-agency dialogue is for the DILG to provide technical support to LGUs on incentivizing private sector participation in solid waste management. This support could be in the form of implementation instruments that enable LGUs to harness existing policy opportunities. The notion of incentives can be broadened to include not only tax incentives but also reputational incentives that make the private sector look good as they do well in business, as well as opportunities for accessing affordable loans from domestic and foreign financing institutions for PPP projects. In the language of RA 9003 and RA 11898, incentives include rewards (monetary or otherwise) and recognitions.

Incentives are provided for in various laws, including the most recent Republic Act No. 12066 - Corporate Recovery and Tax Incentives for Enterprises to Maximize Opportunities for Reinvigorating the Economy (CREATE MORE) Act of 2024. In the context of incentivizing private sector participation in solid waste management, LGUs need to gain familiarity with the relevant laws and guidelines. The DILG can develop knowledge products (such as a primer on fiscal and non-fiscal incentives) and a model ordinance for LGUs, among others. To inform the development of these instruments, the DILG can undertake the following:

- a) Coordinate with the DENR on guidelines for availment of funds for rewards and recognitions as provided for in Sec. 45 of RA 9003, Sec. 45 of RA 11898 and Sec. 20.1 of DENR DAO 2023-02.
- b) Collaborate with the Board of Investments, Bureau of Internal Revenue, and other relevant agencies on the eligibility of Obligated Enterprises or Producer Responsibility Organizations (PROs) and other business enterprises involved in solid waste management. The IRR of RA 11898 provides that **Obligated Enterprises or PROs** acting on their behalf, and **other registered business enterprises** may apply for incentives following the approval process provided under Title XIII (Tax Incentives) of the National Internal Revenue Code of 1997, as amended, for eligible activities, provided that such activities shall undergo the standard processes in the identification of **qualified activities under the Strategic Investment Priority Plan (SIPP)**.
- c) Collaborate with the FIRB, BOI, and DOF-BLGF on the development of a model local tax ordinance imposing the RBELT. Sec. 5, Rule II of the IRR of RA 12066 provides that the FIRB, in consultation with the BOI, the Bureau of Local Government Finance, the **Department of the Interior and Local Government**, and IPAs, shall **prepare a model local tax ordinance imposing the RBELT**.
- d) Coordinate with the Department of Finance (DOF), Board of Investments (BOI), Bureau of Internal Revenue (BIR), Fiscal Incentives Review Board (FIRB), and other

Investment Promotion Agencies (IPAs) on the terms and conditions of the grant of the Enhanced Deductions Regime (EDR). Section 1c, Rule II, of the IRR of RA 12066 provides that the Department of Finance (DOF), in coordination with the BOI, BLR, FIRB, and other IPAs, shall prescribe the terms and conditions on the grant of the EDR.

### **Incentives Under RA 9003, RA 11898, and its IRR (DAO 2023-02)**

- a) **Rewards and Recognition.** RA 9003 (Sec. 45) provides that the Solid Waste Management Fund (SWMF) can be used to grant rewards, monetary or otherwise, to individuals, private organizations and entities, including non-government organizations, that have undertaken outstanding and innovative projects, technologies, processes and techniques in re-use, recycling and reduction of waste. Sec. 45 of RA 11898 expands coverage of rewards to include 'obliged enterprises' and Producer Responsibility Organizations (PROs). However, the IRR of RA 11898 (DENR DAO 2023-02) no longer mentions the SWMF as a source of funds for the rewards. Instead, the rewards will be sourced from the budget proposals of the Environmental Management Bureau (EMB) and the DENR (Sec. 20.1);
- b) **Tax incentives.** The IRR of RA 11898 provides that **Obliged Enterprises or PROs** acting on their behalf, and **other registered business enterprises** may apply for incentives following the approval process provided under Title XIII (Tax Incentives) of the National Internal Revenue Code of 1997, as amended, for eligible activities, provided that such activities shall undergo the standard processes in the identification of **qualified activities under the Strategic Investment Priority Plan (SIPP)**. The EPR expenses of Obligated Enterprises, PROs, and private enterprises shall be considered as necessary expenses deductible from gross income, subject to the substantiation requirements for necessary business expenses deductible from gross annual income in accordance with Section 34(A)(I) of the National Internal Revenue Code of 1997, as amended.;
- c) **Tax and Duty Exemption of Donations, Legacies, and Gifts.** All legacies, gifts, and donations to LGUs, enterprises, or private entities, including NGOs, for the support and maintenance of the program for socially acceptable, effective, and efficient solid waste management shall be exempt from all internal revenue taxes and customs duties, and shall be deductible in full from the gross income of the donor for income tax purposes. The standard procedures for such exemptions are contained in the Tariff and Customs Code, Section 105-106.

## Strategic Investment Priority Plan

The SIPP is a three-year blueprint listing key economic activities that can qualify for fiscal incentives. As mandated under Section 300 of the National Internal Revenue Code of 1997 (NIRC, as amended by Republic Act (RA) No. 11534, otherwise known as the "Corporate Recovery and Tax Incentives for Enterprises" (CREATE) Act, and further amended by RA 12066 (CREATE MORE), the SIPP is prepared by the Board of Investments (BOI) in coordination with the Fiscal Incentives Review Board (FIRB), investment promotion agencies (IPAs), other government agencies administering tax incentives and the private sector, and submitted to the President for approval.

As a general principle, the SIPP provides for the types of fiscal and non-fiscal support needed to (Sec. 1, Rule IV, IRR of RA 12066):

- Create high-skilled jobs to grow a local pool of enterprises, particularly micro, small, and medium enterprises (MSMEs), that can supply to domestic and global value chains;
- Increase the sophistication of products and services that are produced and/or sourced domestically;
- Expand domestic supply and reduce dependence on imports;
- Attract significant foreign capital or investment;
- Promote export diversification and accelerate countryside development (as these are consistent with the tier and locational criteria of the SIPP); and
- Develop new industries or support emerging sectors.

The SIPP may include areas of investment that are specific to an area or region, taking into consideration the project or activity that the IPAs in those areas or regions deem fit to promote, in order to foster regional growth and attract investments, provided that the project or activity identified by the IPAs shall be consistent with the Philippine Development Plan and RA No. 11962, otherwise known as the "Trabaho Para Sa Bayan Act".

## Incentives Under RA 12066

The Corporate Recovery and Tax Incentives for Enterprises to Maximize Opportunities for Reinvigorating the Economy (CREATE MORE) Act of 2024 (RA No. 12066) and its Implementing Rules and Regulations (IRR) issued by the Department of Finance and Department of Trade and Industry (DTI). This law amends certain provisions of the National Internal Revenue Code of 1997 (RA 12065) and RA 11534 - the Corporate Recovery and Tax Incentives for Enterprises (CREATE) Act.



## Eligible Enterprises

Tax and other incentives vary according to the category of enterprise, project, or activity.

Eligible enterprises include:

- a) Registered business enterprise (RBE): any individual, partnership, corporation, Philippine branch of a foreign corporation, or other entity organized and existing under Philippine laws and **registered with an IPA**, excluding service enterprises such as those engaged in customs brokerage, trucking or forwarding services, janitorial services, security services, insurance, banking, and other financial services, consumers' cooperatives, credit unions, consultancy services, retail enterprises, restaurants, or such other similar services, as may be determined by the FIRB;
- b) Domestic market enterprise (DME): any RBE other than a registered export enterprise. This shall also include high-value DMEs, which refer to registered DMEs with investment capital exceeding Fifteen Billion Pesos (P15,000,000,000) and are engaged in sectors considered import-substituting, or with export sales in the immediately preceding year of at least One Hundred Million US Dollars (\$100,000,000), or its equivalent in an acceptable foreign currency.
- c) Registered export enterprise (REE): any RBE engaged in manufacturing, assembling or processing activity, and services such as information technology (IT) activities and business process outsourcing (BPO), and resulting in the direct exportation, and/or sale of its manufactured, assembled or processed product or IT/BPO services to another REE that will form part of the final export product or export service of the latter, of at least seventy percent (70 %) of its total production or output.

## Authority to Grant Incentives

Incentives are applied for by the registered enterprise and granted by mandated agencies to the extent that the **approved registered project or activity is under the SIPP**. Rule I Section 3 of the IRR of RA 12066 provides that incentives are **granted by the Fiscal Incentives Review Board (FIRB) or the concerned Investment Promotion Agency (IPA)**.

The **FIRB** is an inter-agency government body given the authority to grant tax incentives to registered business enterprises. It is composed of the Department of Finance (Chair), Department of Trade and Industry (Co-Chair), Department of Budget and Management (DBM), Department of Economy, Planning and Development (DEPDev), and Office of the President. It has delegated the grant of tax incentives to investment promotion agencies (IPAs) for registered projects or activities with investment capital of PHP 1 billion and below (<https://firb.gov.ph>).

**Investment promotion agencies (IPAs)** refer to government entities created by law, executive order, decree, or other issuance, in charge of promoting investments, granting and administering tax and non-tax incentives, and overseeing the operations of the different economic zones and freeports in accordance with their respective special laws. These include the Board of Investments (BOI), Bangsamoro Board of Investments, Bangsamoro Economic Zone Authority, Philippine Economic Zone Authority, Bases Conversion and Development Authority, Subic Bay Metropolitan Authority, Clark Development Corporation, John Hay Management Corporation, Poro Point Management Corporation, Cagayan Economic Zone Authority, Zamboanga City Special Economic Zone Authority, PHIVIDEA Industrial Authority, Aurora Pacific Economic Zone, and Freeport Authority, Authority of the Freeport Area of Bataan, Tourism Infrastructure and Enterprise Zone Authority, Bulacan Special Economic Zone and Freeport Authority, and all other similar existing authorities or that may be created by law, unless otherwise specifically exempted from the coverage of the Tax Code (Section 4, Rule I, IRR of RA 12066).

### **Income Tax-based Incentives**

Rule II, Section 1 of the IRR of RA 1206 enumerates the following incentives:

- a) **Income Tax Holiday (ITH).** For **all registered business enterprises** (RBEs), exemption from regular income tax of registered project or activity imposed under the Tax Code: Provided, That, without the need for a BIR ruling, creditable withholding tax shall not be imposed on income payments to RBEs related to their registered project or activity during the ITH availment period.
- b) **Special Corporate Income Tax (SCIT) Rate.** For **registered export enterprise** (REE), a tax rate equivalent to five percent (5%) based on the gross income earned, in lieu of all national and local taxes, and local fees and charges: Provided, further, that private ecozone developers shall be subject to real property tax on land owned by them under Section 24 of RA No. 7916 (Special Economic Zone Act of 1995), as amended.
- c) **Enhanced Deductions Regime (EDR).** For DMEs and High-value DMEs, deductions in addition to the allowable ordinary and necessary deductions under Section 34 of the Tax Code. These include:
  - i. **Additional depreciation allowance** of assets acquired for the production of goods and services (qualified capital expenditure), of 10% for buildings and 20% for machinery and equipment.
  - ii. **Additional deduction on labor expenses** of up to 50% of total labor expense for direct local employment in the taxable year, but does not include salaries, wages, benefits, and other personnel costs incurred for managerial, administrative, indirect labor, and support services.

- iii. **Additional deduction on research and development expenses**, of up to one hundred percent (100%) on research and development expenses that are directly related to the registered project or activity of the RBE, but limited to local expenditure incurred for salaries of Filipino employees, consumables, and payments to local research and development organizations.
- iv. **Additional deduction on training expenses**, up to one hundred percent (100%) their total expense on trainings conducted, as approved by the concerned IPA based on the SIPP, given to the Filipino employees engaged directly in the RBE's production of goods and performance of services; but not including on-boarding workshops for newly-hired employees, team building activities, field trips and tours and executive education and leadership programs for senior management, professional legal training, safety training (such as evacuation plans, fire drills, workplace violence and first aid) and quality trainings (such as for ISO processes and standards not related to the employee's core functions).
- v. **Additional deduction on domestic input expense**, of up to fifty percent (50%) on domestic inputs that are directly related to and actually used in the registered project or activity.
- vi. **Additional deduction on power expenses** of up to one hundred percent (100%) of the power expense incurred in the taxable year.
- vii. **Deduction for reinvestment allowance to RBEs in the manufacturing and tourism industries** that reinvest their undistributed profit or surplus in another manufacturing or tourism project or activity, respectively, that are listed in the SIPP, shall be allowed to avail additional deduction of not more than fifty percent (50%) of total amount reinvested within a period of five (5) years from the time of reinvestment. This incentive is valid until 31 December 2034.
- viii. **Additional deductions of up to fifty percent (50%) on expenses relating to exhibitions, trade missions, or trade fairs**, including expenses incurred in promoting the export of goods or the provision of services to foreign markets, approved by the concerned IPA.

### Customs Duty Exemption

This incentive is available for REEs and DMEs involved in the importation of capital equipment, raw materials, spare parts, and accessories for their registered project or activity, including goods used for administrative purposes, provided that these are directly attributable to the registered project or activity.

- d) **Value Added Tax (VAT) zero-rating and exemption** on importation and local purchases applicable only to goods and services directly attributable to the

registered project or activity of an REE or a registered High-value DME, including incidental expenses thereto, subject to certain rules.

## Role of LGUs

Section 5, Rule II, IRR of RA 12066 provides that concerned LGUs may impose **Registered Business Enterprise Local Tax (RBELT)** through an ordinance issued by the concerned Sanggunian. The maximum rate is not more than two percent (2%) of gross income as defined under Section 27(E)(41) of the Tax Code, during the Income Tax Holiday (ITH) and Enhanced Deduction Regime (EDR), as provided under Sections 294 (A) and (C) of the same code, respectively, which shall be in lieu of all local taxes, fees, and charges imposed by the LGU under the LGC, as amended. The RBELT shall be directly remitted by the RBE to the treasurer's office of the municipality or city where the enterprise is located.

The RBELT may not be imposed on the following:

- RBEs under Special Corporate Income Tax (SCIT). The SCIT imposes a five percent (5%) tax for 10 years, only for export enterprises.
- RBEs certified by the BOI as pioneer or non-pioneer shall be exempt from the local business tax for a period of six or four years, respectively, from the date of registration.
- RBEs registered with IPAs with regulatory powers provided for in their charters or by special laws, in which case, the concerned IPA exercises authority on importation of fees and charges within its territorial area or jurisdiction. The determination of compliance by the RBE of its terms and conditions shall be with the concerned IPA.

Where two (2) or more LGUs cover the same enterprise, the total RBELT to be imposed remains the same and shall not exceed 2% of the gross income of the project or activity. The concerned LGUs shall share the RBELT: 50% for equal sharing, and the other 50% for apportionment based on the population of the LGUs. If the LGU is a municipality, 50% of its share shall be remitted to the province. If the LGU is a city, it retains one hundred percent (100%) of its share.

Upon the expiration of the income tax-based incentives of the RBE, the LGU may continue to impose RBELT or local business tax exemption pursuant to its authority under the LGC. LGUs may also reduce the rate of tax or waive their share thereof in the case of two (2) or more LGUs covering the same enterprise.

# References

- [1] Apostol, G., Acolola, A., Edillon, M. and Valenzuela, S. (2022). How comprehensive and effective are waste management policies during the COVID-19 pandemic? Perspectives from the Philippines. *Public Health*, Volume 10. <https://doi.org/10.3389/fpubh.2022.958241>
- [2] Atienza, V., Hayashi, S. and Lavtizar, V. (2022). Mechanism to customize a suitable Extended Producer Responsibility model for plastic packaging waste in the Philippines. UN-Habitat Regional Office for Asia and Pacific. (PDF copy)
- [3] Benson N., Bassey, D. and Palanisami T. (2021) COVID pollution: impact of COVID-19 pandemic on global plastic waste footprint. *Heliyon*. (2021) 7:e06343. doi: 10.1016/j.heliyon.e06343
- [4] Commission on Audit (COA). (2003). Solid Waste Management Program, Performance Audit Report (PAO) 2023-01. (PDF Copy).
- [5] Congress of the Philippines. (2021). Republic Act 11898 - An Act Instituting the Extended Producer Responsibility on Plastic Packaging Waste, Amending for this Purpose Republic Act 9003, otherwise known as Ecological Solid Waste Management Act of 2000. (Available at: [http://legacy.senate.gov.ph/republic\\_acts/ra%2011898.pdf](http://legacy.senate.gov.ph/republic_acts/ra%2011898.pdf))
- [6] Coracero, E., Gallego, RB, Frago, K. and Gonzales, R.. (2021). A long-standing problem: a review on the solid waste management in the Philippines. *Indonesian Journal of Social and Environmental Issues* 2(3):213-220. URL: <https://ojs.literacyinstitute.org/index.php/ijsei/article/view/144/143>
- [7] DENR. (2001). DENR Administrative Order No. 2001-34 - Implementing Rules and Regulations of Republic Act No.9003. (Available at: <https://faolex.fao.org/docs/pdf/phi68080.pdf>)
- [8] DENR. (2006). DENR Administrative Order No. 10, s. 2006 - Guidelines on the Categorized Final Disposal Facilities (Sanitary Landfills). Retrieved from: <https://nswmc.emb.gov.ph/wp-content/uploads/2018/01/DAO-10.pdf.pdf>
- [9] DENR. (2021). Philippines National Plan of Action for the Prevention, Reduction and Management of Marine Litter. (Available at: [http://seaknowledgebank.net/sites/default/files/Jan%202022%20Final%20Philippines%20NPOA-ML%20\(1\).pdf](http://seaknowledgebank.net/sites/default/files/Jan%202022%20Final%20Philippines%20NPOA-ML%20(1).pdf)).
- [10] DENR. (2021a). Memorandum Circular No. 2021-10 - Adoption of the National Plan of Action for the Prevention, Reduction and Management of Marine Litter (NPOA-ML). (Available at: [https://apidb.denr.gov.ph/infores/uploads/DMC-2021-10.pdf?fbclid=IwAR2gQSevAi0spb6A0QabES6V42OS6A15wXVw9GxZN600PMT\\_PtiUcGdGH7A](https://apidb.denr.gov.ph/infores/uploads/DMC-2021-10.pdf?fbclid=IwAR2gQSevAi0spb6A0QabES6V42OS6A15wXVw9GxZN600PMT_PtiUcGdGH7A))
- [11] DENR. (2023). DENR Administrative Order No. 2023-02 - Implementing Rules and Regulations of RA 11898. (Available at: <https://www.scribd.com/document/634223445/RMC-No-28-2023-Annex-B-R-A-No-11898-IRR-pdf>)
- [12] DENR-EMB. (2018). National Solid Waste Management Status Report 2008-2018. Retrieved from: [https://eeid.emb.gov.ph/wp-content/uploads/2020/07/SOLIDWASTE-LAYOUT\\_final.pdf](https://eeid.emb.gov.ph/wp-content/uploads/2020/07/SOLIDWASTE-LAYOUT_final.pdf)
- [13] DENR. (2021). "DENR crackdown on illegally operating dumpsites continues," NSWMC-EMB, February 23, 2021. Retrieved from: <https://nswmc.emb.gov.ph/?p=4039>

- [14] DENR. (2021). "DENR shuts down 100% of all illegally operating dumpsites nationwide," DENR, May 23, 2021. Retrieved from <https://denr.gov.ph/news-events/denr-shuts-down-100-of-all-illegally-operating-dumpsites-nationwide/>
- [15] Department of Finance and Department of Trade and Industry. (2025). IMPLEMENTING RULES AND REGULATIONS OF TITLE XIII OF REPUBLIC ACT NO. 8424 OTHERWISE KNOWN AS THE "NATIONAL INTERNAL REVENUE CODE OF 1997", AS AMENDED BY REPUBLIC ACT NO. 12065. Retrieved from: <https://firb.gov.ph/download/create-more-act-irr/?wpdmdl=4306&refresh=68558e1cd76df1750437404>
- [16] Gador, R.V. (2009). Solid Waste Management Practices of Davao City. Southeastern Philippines Journal of Research and Development, Volume 18, No. 2 (2009). Philippine E-Journals. Retrieved from: <https://ejournals.ph/issue.php?id=797>
- [17] GAIA (Global Alliance for Incinerator Alternatives). (2019). Plastics Exposed: How Waste Assessments and Brand Audits are Helping Philippine Cities Fight Plastic Pollution. Quezon City: Global Alliance for Incinerator Alternatives. Retrieved from: <https://www.no-burn.org/plastics-exposed-how-waste-assessments-and-brand-audits-are-helping-philippine-cities-fight-plastic-pollution/>
- [18] Greenpeace and Ecowaste Coalition. (2020). Waste Trade in the Philippines: How Local and Global Policy Instruments Can Stop the Tide of Foreign Waste Dumping in the Country. Retrieved from: <https://www.greenpeace.org/static/planet4-philippines-stateless/2020/03/da311344-waste-trade-in-the-philippines-report-v2.pdf>
- [19] Health Care Without Harm - Southeast Asia (HCWH). (2021). COVID-19 and Medical Waste Management: Plastics Issues During a Global Pandemic - A Study of Five Hospitals in the Philippines. Manila: Health Care Without Harm - Southeast Asia. Available online at: <https://noharm-asia.org/DOHwasteauditreport2021>
- [20] Jambeck, J.R., Geyer, R., Wilcox, C., Siegler, T.R., Perryman, M., Andrady, A., Nayaran, R. and Law, K.L. (2015). MARINE POLLUTION: Plastic waste inputs from land into the ocean. *Science*, Vol. 347, Issue 6223, 13FEBRUARY 2015. Retrieved from: <https://jambeck.engr.uga.edu/wp-content/uploads/2022/02/science.1260352-Jambeck-et-al-2015.pdf>
- [21] JICA. (2007). Preliminary Study for Solid Waste Management in 3 Cities: Sagay, Calbayog and Davao Cities. Final Report. Retrieved from: <https://openjicareport.jica.go.jp/pdf/0000248652.pdf>
- [22] Leal, F., Filho, W., Salvia, A., Minhas, A., Paço, A. and Dias-Ferreira, C. (2021). The COVID-19 pandemic and single-use plastic waste in households: a preliminary study. *Sci Total Environ.* (2021) 793:148571. doi: 10.1016/j.scitotenv.2021.148571
- [23] Kaza, Silpa; Yao, Lisa C.; Bhada-Tata, Perinaz; Van Woerden, Frank. (2018) What a Waste 2.0 : A Global Snapshot of Solid Waste Management to 2050. Urban Development. Washington, DC: World Bank. (Available at: <https://openknowledge.worldbank.org/handle/10986/30317>)
- [24] Meijer, L., Emmerik, T., Van Der Ent, R., Lebreton, L. and Schmidt, C. (2021). More than 1000 rivers account for 80% of global riverine plastic emissions into the ocean. *Science Advances* 7(18): DOI:10.1126/sciadv.aaz5803. License: CC BY-NC 4.0
- [25] Mogol, G., Atienza, V., Lavtizar, V. and Hayashi, S. (2022). Rapid Assessment of Plastic Waste Management Infrastructure in the Philippines. UN-Habitat Regional Office for Asia and Pacific. (PDF copy)



- [26] National Solid Waste Management Commission (NSWMC). (2015). National Solid Waste Management Status Report (2008-2014). (Available at: <https://nswmc.emb.gov.ph/wp-content/uploads/2016/06/Solid-Wastefinaldraft-12.29.15.pdf>)
- [27] National Solid Waste Management Council (NSWMC). (2021). NSWMC Resolution No. 1441, s. 2021 - Resolution Adopting the National Plan of Action for the Prevention, Reduction and Management of Marine Litter (NPOA-ML). (Available at: <https://nswmc.emb.gov.ph/wp-content/uploads/2021/10/2021-NSWMC-Resolution-No.-1441-Series-of-2021-NPOA-ML1.pdf>)
- [28] NSWMC-NEDA. n.d. The National Solid Waste: An initiative of the DENR-National Solid Waste Commission and the National Economic Development Authority. Retrieved from: <https://nswmc.emb.gov.ph/wp-content/uploads/2016/06/Briefer.pdf>
- [29] NEDA-NSWMC-World Bank. (2008). Cost Sharing Framework for Solid Waste Management. Retrieved from: <https://nswmc.emb.gov.ph/wp-content/uploads/2017/05/cost-sharing-framework-for-swm.pdf>
- [30] Official Gazette. (2001). Republic Act No. 9003 - An Act Providing for Ecological Solid Waste Management Program, Creating the Necessary Institutional Mechanisms and Incentives, Declaring Certain Acts Prohibited and Providing Penalties, Appropriating Funds Therefor, and for Other Purposes. (Available at: <https://www.officialgazette.gov.ph/2001/01/26/republic-act-no-9003-s-2001/>)
- [31] Official Gazette. (2022). Memorandum Order No. 61 – Approving the 2022 Strategic Investment Priority Plan. Retrieved from <https://firb.gov.ph/download/2022-strategic-investment-priority-plan-sipp/?wpdmdl=3828&refresh=6858c4c551b201750648005>
- [32] Official Gazette. (2023). Republic Act No. 11964 – Automatic Income Classification of Local Government Units Act. Retrieved from: [https://lawphil.net/statutes/repacts/ra2023/ra\\_11964\\_2023.html](https://lawphil.net/statutes/repacts/ra2023/ra_11964_2023.html)
- [33] Premakurama, D.G.J., Canete, A.M.L. and Nagaishi, M. (2013). Policy Implementation of Republic Act 9003 in the Philippines: A Case Study of Cebu City, Paper presented to the 1<sup>st</sup> IWWG-ARB Symposium, 18-21 March 2013, Hokkaido University, Japan. (Available at: [https://www.iges.or.jp/en/publication\\_documents/pub/workingpaper/en/3308/6-5.pdf](https://www.iges.or.jp/en/publication_documents/pub/workingpaper/en/3308/6-5.pdf))
- [34] PSA. (2024). 2020 Census of Population and Housing. Retrieved from: <https://psa.gov.ph/statistics/population-and-housing/stat-tables> and <https://psa.gov.ph/statistics/population-and-housing/reports>
- [35] Senate Economic Planning Office (SEPO). (2017). Philippine Solid Wastes at a Glance. Available at :[https://legacy.senate.gov.ph/publications/SEPO/AAG\\_Philippine%20Solid%20Wastes\\_Nov2017.pdf](https://legacy.senate.gov.ph/publications/SEPO/AAG_Philippine%20Solid%20Wastes_Nov2017.pdf)
- [36] Sotto, L. P., Beusen, A., Villanoy, C., Bouwman, L. & Jacinto, G. (2015). Nutrient Load Estimates for Manila Bay, Philippines using Population Data. *Ocean Science Journal*. 50. 467-474. 10.1007/s12601-015-0042-0. (Available at: [https://www.researchgate.net/publication/280612163\\_Nutrient\\_Load\\_Estimates\\_for\\_Manila\\_Bay\\_Philippines\\_using\\_Population\\_Data/citation/download](https://www.researchgate.net/publication/280612163_Nutrient_Load_Estimates_for_Manila_Bay_Philippines_using_Population_Data/citation/download))
- [37] The World Bank. (2020). Trends in Solid Waste Management. (Available at: [https://datatopics.worldbank.org/what-a-waste/trends\\_in\\_solid\\_waste\\_management.html](https://datatopics.worldbank.org/what-a-waste/trends_in_solid_waste_management.html))
- [38] The World Bank. (2021) Market Study for Philippines: Plastics Circularity Opportunities and Barriers. Retrieved from <https://www.worldbank.org/en/country/philippines/publication/market-study-for-philippines-plastics-circularity-opportunities-and-barriers-report-landing-page>.

[39] United Nations, Department of Economic and Social Affairs (UN-DESA), Population Division (2017). *World Population Prospects: The 2017 Revision, Key Findings and Advance Tables*. Working Paper No. ESA/P/WP/248.

[40] United Nations (2024). *World Population Prospects 2024: Summary of Results*. UN DESA/POP/2024/TR/NO. 9. New York: United Nations.

[41] UN HABITAT. (2016). *NEW URBAN AGENDA: Better, Greener, Smarter Cities In an Inclusive Philippines*. HABITAT III, The Philippine National Report. Retrieved from: [https://unhabitat.org/sites/default/files/documents/2019-05/national-report\\_philippines.pdf](https://unhabitat.org/sites/default/files/documents/2019-05/national-report_philippines.pdf)

[42] WWF Philippines (World Wildlife Fund, Philippines), cyclos GmbH, and AMH Philippines. (2020). *EPR Scheme Assessment for Plastic Packaging Waste in the Philippines*. Quezon City: WWF Philippines. Retrieved from: [https://wwf.org.ph/wp-content/uploads/2020/12/WWFREPORTEPR\\_Philippines\\_2020.pdf](https://wwf.org.ph/wp-content/uploads/2020/12/WWFREPORTEPR_Philippines_2020.pdf)

### News Clips

[43] Dave Suan Albarado, "Albur to close sanitary landfill in February for rehabilitation," *Bohol Tribune*, May 22, 2025. Retrieved from: [https://theboholtribune.com/2025/01/26/albur-to-close-sanitary-landfill-in-february-for-rehabilitation/#google\\_vignette](https://theboholtribune.com/2025/01/26/albur-to-close-sanitary-landfill-in-february-for-rehabilitation/#google_vignette)

[44] Leo Udtohan, "Bohol town to close landfill servicing 18 localities," *Inquirer.net*, May 22, 2025. Retrieved from: <https://newsinfo.inquirer.net/2025842/bohol-town-to-close-landfill-servicing-18-localities>.

[45] Leo Udtohan, "Tieza: No need to close Bohol landfill for now," *Inquirer.net*, February 7, 2025. Retrieved from: <https://newsinfo.inquirer.net/2032364/tieza-no-need-to-close-bohol-landfill-for-now>

[46] Luisa Sandoval, "With piles of COVID-19 waste, PH trash collectors fear for their lives," *Rappler*, August 14, 2022. Available online at: <https://www.rappler.com/environment/trash-collectors-philippines-fear-for-lives-covid-19-waste>

\*\*\*\*\*