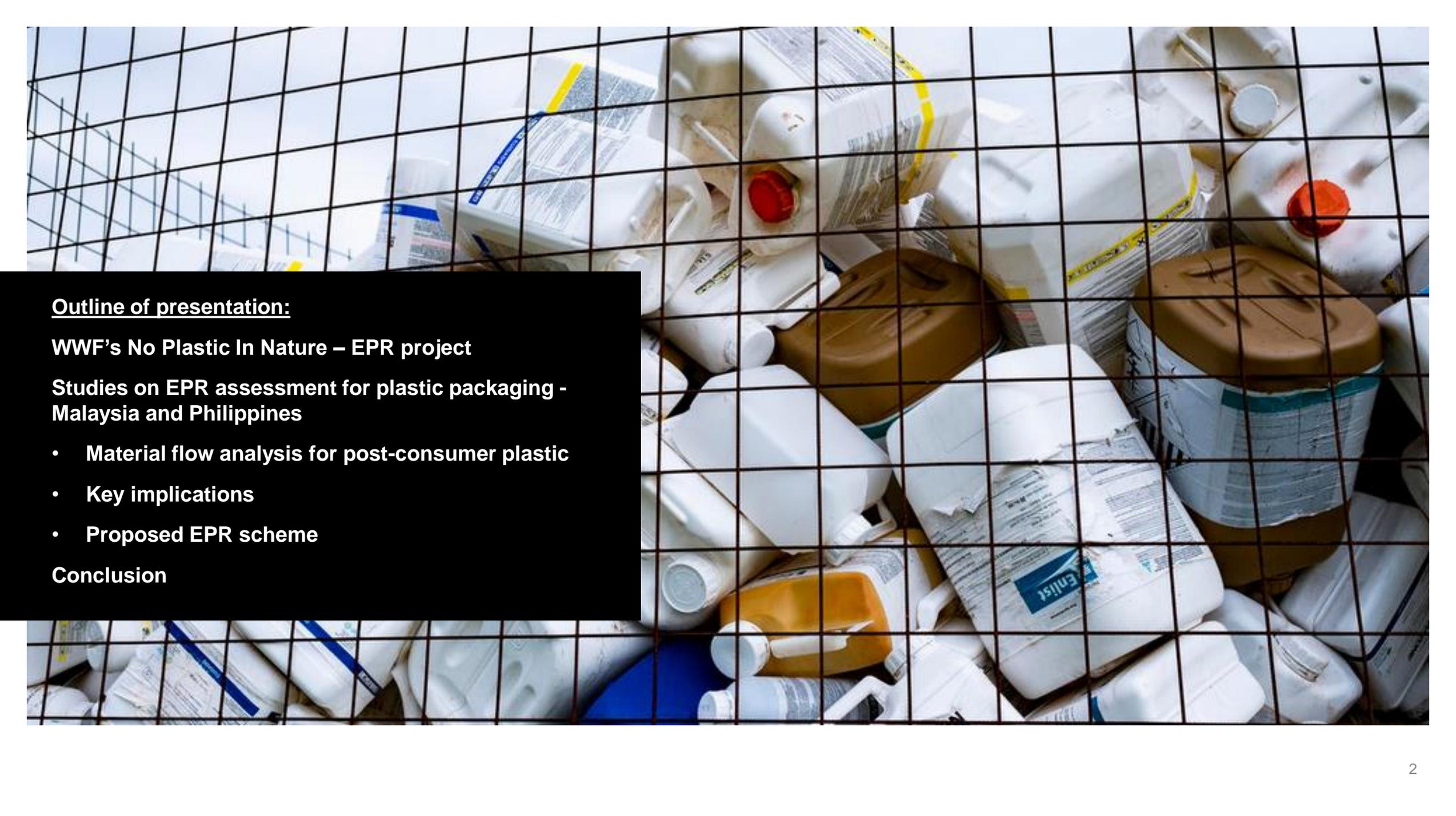




WWF'S EPR PROJECT

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Outline of presentation:

WWF's No Plastic In Nature – EPR project

**Studies on EPR assessment for plastic packaging -
Malaysia and Philippines**

- **Material flow analysis for post-consumer plastic**
- **Key implications**
- **Proposed EPR scheme**

Conclusion

WWF's No Plastic in Nature by 2030 – EPR project

No Plastic in Nature by 2030

WWF's "No Plastic in Nature" Initiative

Strategies

- Eliminate unnecessary plastics
- Double global plastic recovery
- Shift to sustainable sources for remaining plastic

THREE key pillars

- Global policy/international treaty
- Business engagement
- Action programs – Plastic Smart Cities (PSC)

Extended Producer Responsibility (EPR)

WWF's "Extended Producer Responsibility" (EPR) project



- 1 Mobilize **governments** in targeted countries to incorporate EPR into their legal framework
- 2 Support businesses to create an **ecosystem for circular economy** for plastic and packaging
- 3 Facilitate **multi-national and local companies** to take responsibility for end-of-life impacts of their products and packaging
- 4 Develop **studies and analysis**, provide science-based recommendations and guideline

WWF's EPR project scope



Sources from: mapchart.net

What is Extended Producer Responsibility (EPR) scheme

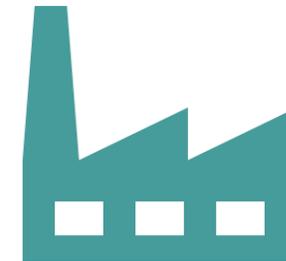


Producers to take greater responsibility of their products' end-of-life management



Government

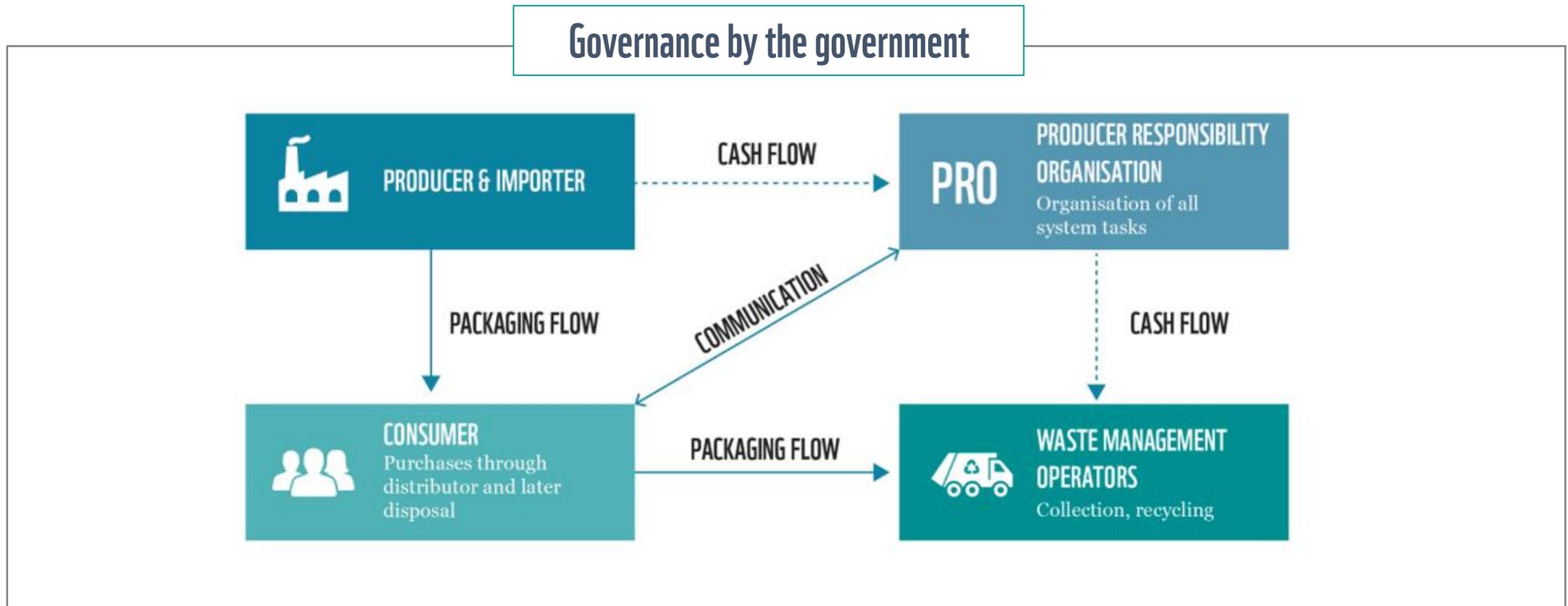
The shift of responsibility and costs of products' and packaging's end-of-life management



Producers and importers

- **Encourage product eco-design:** reduction, reuse model, higher recyclability, increase recycled content in products and packaging
- **Reduce environmental Impacts:** increase end-of-life product waste collection, treatment & reuse/recycling, materials recovery to extend life cycles, reduce virgin materials used
- EPR fee is different from tax or public fee as fees are not collected by public fiscal authorities and does not flow into public budget.
- **EPR fees** are collected and managed by a system operator and should be exclusively used to **fund packaging waste management related activities**.

How does an EPR scheme look like



Roles and responsibilities of stakeholders in EPR schemes



Involved stakeholder	Role in EPR
Manufacturers of packaging material or of packaging	<ul style="list-style-type: none">• Enable reuse & recyclability• Use secondary raw materials
Consumer goods companies (fillers and importers)	<ul style="list-style-type: none">• Pay for EPR system• Form the PRO• Influence up & down value chain
Distributors / retailers of packaged goods	<ul style="list-style-type: none">• Ensure suppliers participate in EPR• (Take-back obligation)
Consumers	<ul style="list-style-type: none">• Sort & dispose packaging correctly• Reduce purchase of packaging
Waste management operators	<ul style="list-style-type: none">• Receive payments from EPR• Waste management & recycling
National government	<ul style="list-style-type: none">• Definition of products & actors' responsibilities• Accreditation & monitoring of EPR schemes
Local governments	<ul style="list-style-type: none">• Waste collection• Information to the public

Government, businesses & consumers must be involved to guarantee its success

Why EPR is an effective tool



- Reduce materials and packaging use
 - Improve collection and recycling
 - Improve products and packaging designs – recyclability and reusability
 - Increase materials recovery and reduce use of virgin materials
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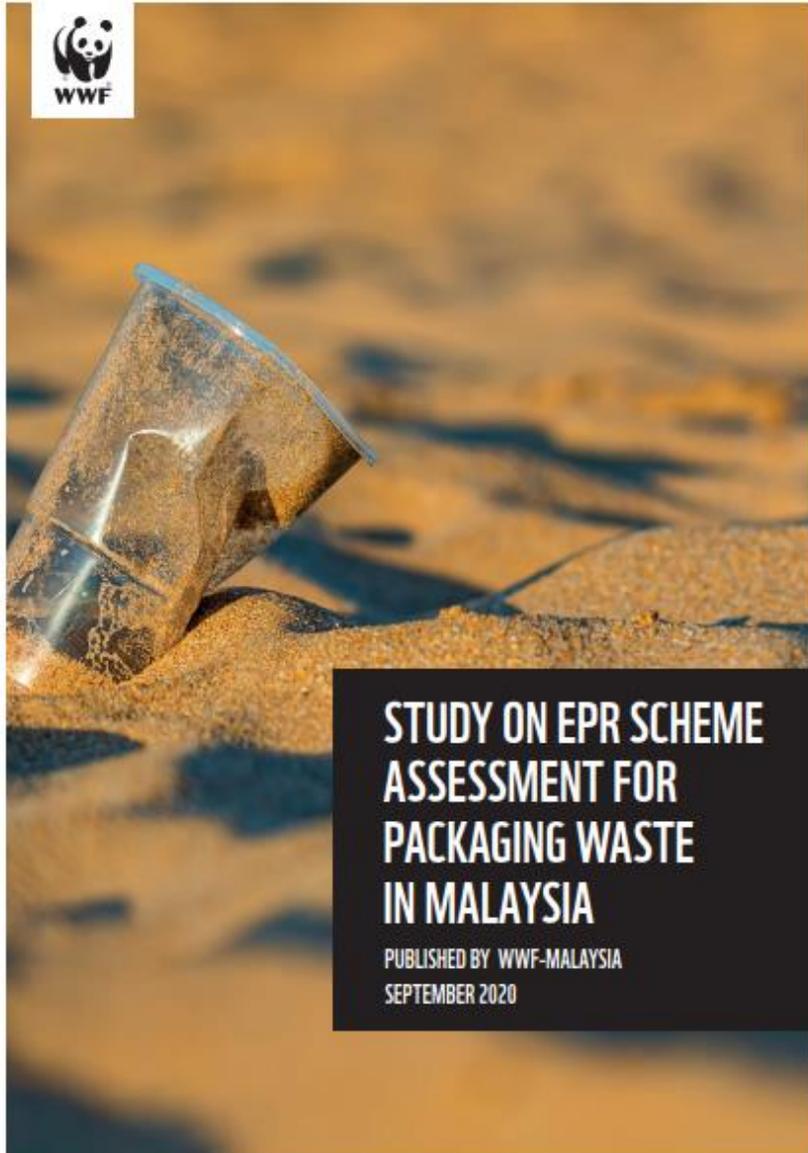
- Strengthen interaction along the value chain – materials supplier, producers, brands, waste management operators
 - Job creation – boost recycling industry
 - Integrate informal sector
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- Collective action to transition to circular economy
- Boost recycling market, improve market mechanism, align demand and supply of waste and recycling sector
- Reduce dependency on virgin material
- Minimize landfill dependency and environmental abatement cost, externalities



Introduction of the studies

- Country-specific studies: Malaysia, Philippines, Thailand and Vietnam
- Analysis of the current waste management system and recycling market for plastic packaging waste
- Propose customized EPR schemes based on local implications
- Support policy makers in policy formulation to transition a circular economy
- Reference for industry players to become an informed change maker and innovator



Malaysia



Three significant characteristics shape the Malaysian context:

- 1. High-value recyclable packaging already separated from household waste to a very relevant extent and transferred to recycling systems.**

This applies especially to rigid HDPE, PP and PET. Extraction is largely informal and the subsequent value chain is based on a functioning market.

- 2. Malaysia has large recycling capacities are sufficient for above-mentioned, locally generated, high-value recyclables.**

However, a huge number of recyclers and aggregators import and process imported recyclables, occupying large capacities.

There is no fully traceable documentation of the imported material.

- 3. Low value and non-recyclables are mostly disposed of and collected together.**

There is no systematic separate collection and recycling of the low-value recyclables.





Post-consumer plastic volume

Post-consumer plastic data was estimated based on

1. Baseline figures for 7 types plastic waste generation from the Survey on Solid Waste Composition, Characteristics & Existing Practices of Solid Waste in Malaysia commissioned by JPSPN (2013)
2. Estimated household incomes (Household Income & Basic Amenities Survey Report 2016)
3. District populations (Department of Statistics)

An estimated annual post-consumer plastic waste generation of 1,070,064 tonnes in 2016

Note: The waste stream does not only include plastic from packaging but also chemically identical non-packaging plastic waste such as toiletries (e.g. toothbrushes, combs), stationary (e.g. plastic pens, rules) and other small discarded plastic items.

Daily post-consumer plastic composition grams/per capita

Region	Plastics (grams / capita)						
	PET	HDPE	PVC	LDPE	Polypro-pylene (PP)	Polystyrene (PS)	Other Plastics
Northern	21.29	22.38	4.46	27.18	9.45	2.17	2.13
Southern	18.18	31.71	2.07	35.85	13.79	10.02	0.82
Klang Valley	19.11	33.35	3.44	32.13	11.13	10.39	0.00
East Coast	12.70	17.32	3.17	24.30	7.29	10.16	0.00
Sarawak	15.34	31.44	1.47	31.82	10.817	13.26	0.00
Sabah	19.17	28.23	3.23	27.84	5.95	15.68	0.48

Source: Survey on Solid Waste Composition, Characteristics & Existing Practice of Solid Waste Recycling in Malaysia, Main Report (JPSPN)

Post-consumer plastic waste generation in Malaysia, 2016 estimation

Region	Plastics (tonnes)							Total
	PET	HDPE	PVC	LDPE	PP	PS	Other Plastics	
Northern	36,241	52,467	6,399	58,317	20,884	20,600	1,919	196,788
Southern	26,683	45,383	3,722	49,774	18,508	14,906	922	159,898
Klang Valley	67,402	113,538	11,174	118,108	42,123	37,720	1,300	391,365
East Coast	24,334	32,674	5,274	41,351	13,458	16,526	864	134,482
Sarawak	14,164	23,024	2,291	25,460	8,758	9,723	407	83,828
Sabah & Labuan	19,543	26,398	3,861	30,359	8,954	13,770	819	103,703
Total	188,366	293,485	32,721	323,370	112,645	113,245	6,231	1,070,064

Source: Lasaju Consulting

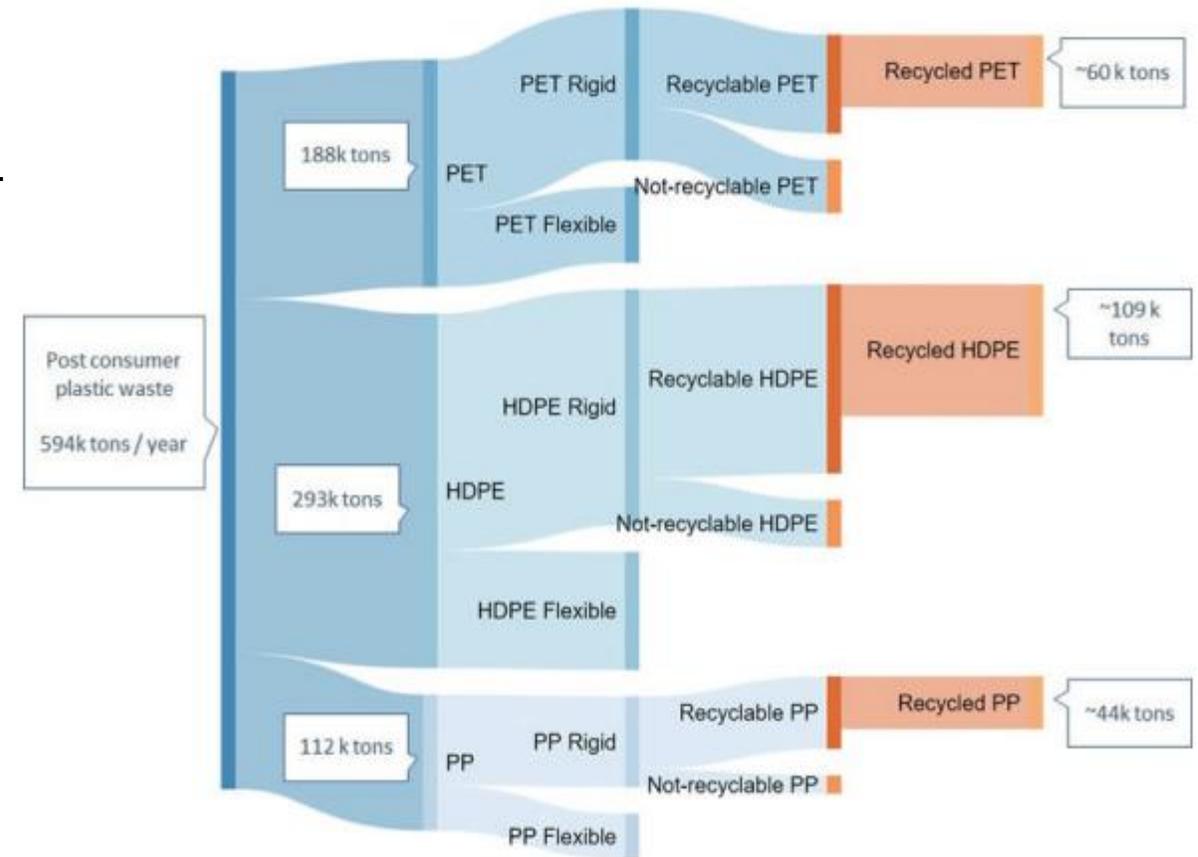
Material Flow Analysis for Post-Consumer Plastic Packaging Waste



Post-consumer plastic flow

For the rigid portion of HDPE, PET, PP, most recycling processors estimated the recycling rate to be very high between 70% to 90% depending on local collection, sorting and aggregation infra-structures.

Some of these rigid mono-materials are not recycled due property changes limiting the mechanical recycling



Waste flow for HDPE, PET and PP

	POST-CONSUMER PLASTIC WASTE VOLUMES IN THOUSAND TONS PER YEAR	RECYCLING RATE IN PERCENT
PLASTIC GRADES WITH SIGNIFICANT SHARE OF RIGID MONO-MATERIALS	HDPE 293	37
	PET 188	32
	POLYPROPYLENE 113	32
FLEXIBLES OR HARD TO RECYCLE MATERIALS	LDPE 323	<5
	POLYPROPYLENE 113	<5
	PVC 33	<5
	OTHERS 6	<5

Estimated recycling volumes and rates

Interviews and/or site visits with more than 40 stakeholders from very different backgrounds including formal sector (e.g. large concessionaries and multiple recycling centers) as well as the informal sector, government entities at the local, State and Federal level as well as and NGOs. Secondly, we have conducted extensive interviews and site visits with multiple recycling processors who process the aggregated recyclable materials into resin or end-products.

Implications for an effective EPR system for Malaysia



Clear responsibility within the government – ministries and departments at federal, state and local level

Include and private sector stakeholders and industry led platform – collectors, aggregators, processors, consumer good companies, MPP

Engage informal sector - provide incentives to increase the collection, improve livelihood and working conditions

Include civil society – leverage both in the current decision-making process as well as the design of a future EPR scheme

Greater effort to manage flexible packaging - EPR scheme with appropriate incentives to recover and recycle flexible plastics while reducing the amount of non-recyclable materials

Ensure that a higher share of rigid plastic packaging is recyclable – EPR modulated fees that favour recyclable materials and discourage mixed materials

Ensure traceability and monitoring - from the point of collection up to processing



Proposed customized EPR system for Malaysia



Mandatory EPR scheme

- Reliable financial basis for large-scale collection, sorting and recycling of packaging which is crucial for creating sufficient business cases along the value chains

Inclusion of system-relevant packaging, products and obliged companies

- Covering all packaging materials (e.g. plastics, paper, metals, composites) from households and equivalent places of origination (e.g. service packaging)

One, non-profit Producer Responsibility Organization (PRO)

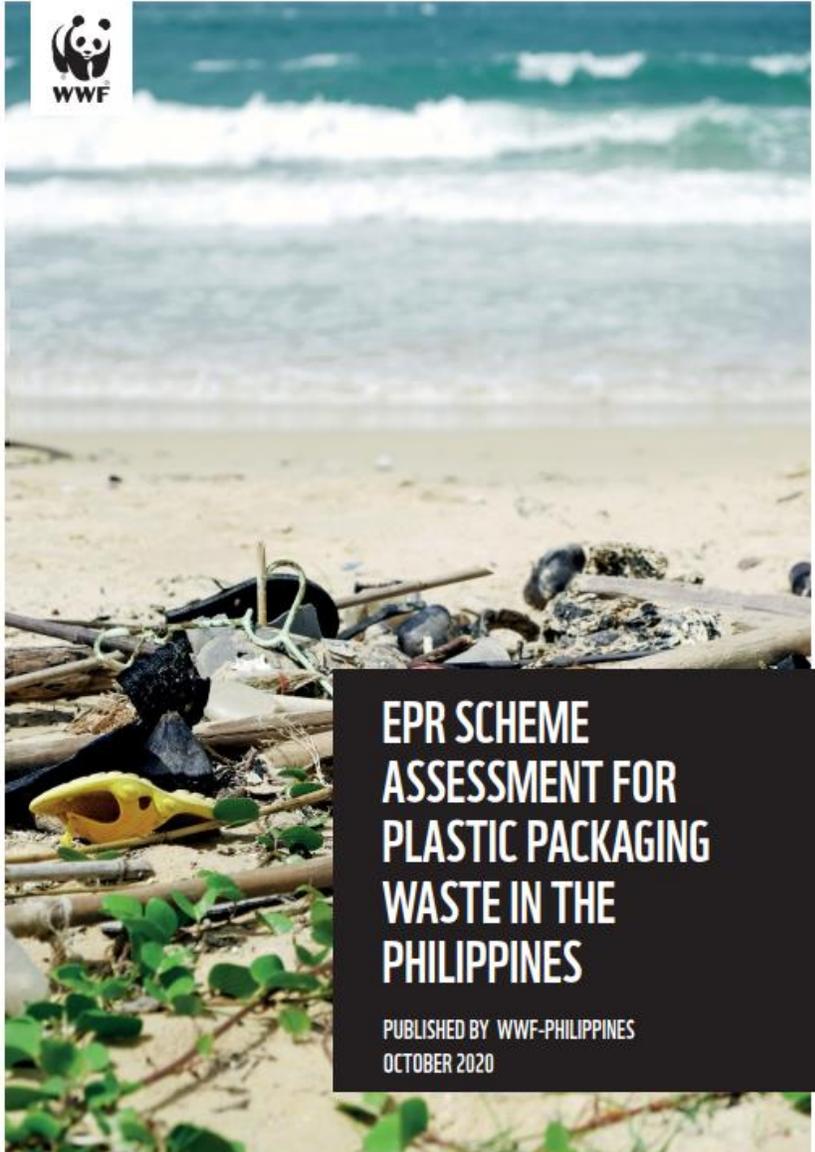
- To ensure a holistic, reliable and fair manner waste management in which the responsibility is collectively assumed through one, industry-led system operator

Modulated fees

- Steered recycling market through application of reduced EPR fees for high-value recyclable packaging and an increased EPR fee for low-value and non-recyclable packaging, paid by the obliged companies

Strict monitoring and control systems

- To avoid fraud, strict and enforced monitoring, controls and penalties are indispensable and shall be carried out by KASA and KPKT to ensure compliance of all actors



Philippines



Three significant characteristics shape the Philippines context:

- 1. High-value recyclable packaging already separated from household waste to a very limited extent and transferred to recycling systems.**

A sizeable volume of these high-value recyclable packaging still ends up in disposal sites or leaked to the environment.

- 2. The recycling capacities are insufficient for locally generated recyclables**

However, recyclers and aggregators import and process imported recyclables, occupying large capacities.

- 3. Low value and non-recyclables are mostly disposed of and collected together.**

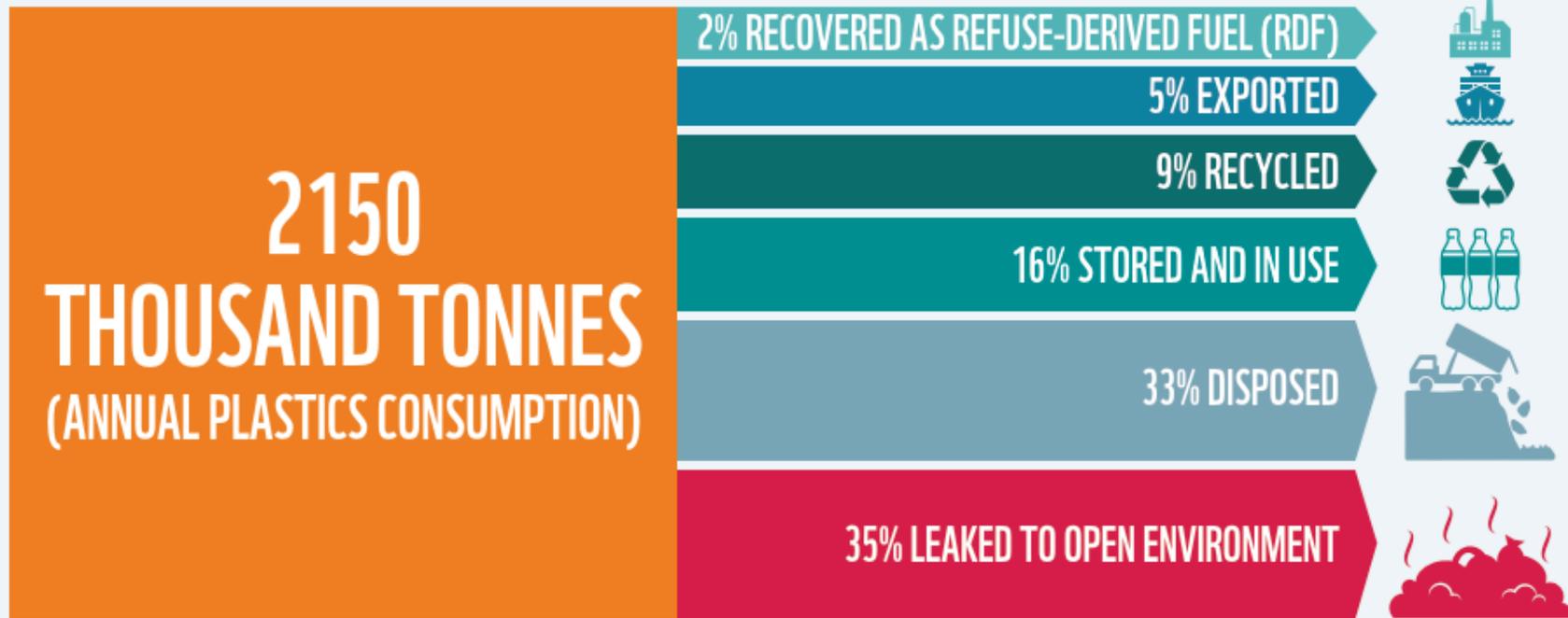
There is no systematic separate collection and recycling of the low-value recyclables. Often end up in landfills, open dumpsites and littered.

- 4. Philippines at the early stage of sustainable waste management.**

No uniformity in implementation of national regulations, recycling infrastructure is limited



Flow of plastic materials (2019)



Out of the 2,150k tonnes of plastic that are available for local consumption, 760k tonnes or 35% are leaked to the open environment while 706k tonnes or 33% are disposed to landfills and dumpsites. Approximately 345k tonnes or 16% are stored and in-use.

Around 183k tonnes or 9% are considered recycled.

FLOW OF PLASTIC MATERIALS IN THE PHILIPPINES 2019

Copyright Credit © AMH/WWF-Philippines

Implications for an EPR system in Philippines



Geographical challenge - there is no centralized waste collection system for rural and island communities

Insufficient recycling capacities - most of the materials are discarded in open dumpsites, controlled disposal facilities, sanitary landfills

Fragmented, misaligned implementation of legal framework - Missing adequate technical and financial resources, willingness of stakeholders, and minimal awareness instead of a holistic approach are present.



Proposed customized EPR system for Malaysia



Mandatory EPR scheme with clear timeframe

- Provide reliable financial basis for large-scale collection, sorting and recycling of packaging which is crucial for creating sufficient business cases along the value chains

Inclusion of system-relevant packaging, products

- Covering all packaging materials from households and service packaging to avoid substitution negative effect

One, non-profit Producer Responsibility Organization (PRO)

- To ensure a holistic, reliable and fair manner waste management in which the responsibility is collectively assumed through one, industry-led system operator. Minimal supervision from government

Build high quality recycling capacity

- The financial flow from EPR scheme should be channeled towards improving recycling infrastructure

Strict monitoring and control systems

- To avoid fraud, strict and enforced monitoring, controls and penalties are indispensable and shall be carried out by DENR to ensure compliance of all actors

We cannot do this alone!



The issues we are working to address are too big for any one person or any one organization



Governments' roles in policy formulation and implementation, including laying down legislation for EPR

Businesses transform business models through EPR

Consumers make smart choices to shape supply and demand

Civil society support government efforts and assist society

Schools educate and facilitate behavior change



Together Possible

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WWF EPR page: panda.org/epr