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# Waste Management Reforms for Thailand's Circular Economy

Sujitra Vassanadumrongdee, Ph.D.

Environmental Research Institute, Chulalongkorn University

[sujitra20@gmail.com](mailto:sujitra20@gmail.com)

# Production and Consumption under the “Linear Economy”

- 5.5 million tonnes of plastic produced
- 3.49 million tonnes per year of key plastic resins (PP, HDPE, LDPE, PET)
- **42% is used in packaging industry, 16% in EE**
- The **per capita plastic waste generation in Thailand (66 kg/cap/yr)** is above the world average\* (29 kg/cap/yr)

Source: World Bank (2021) Market Study for Thailand: Plastics Circularity Opportunities and Barriers  
IUCN-EA-QUANTIS (2020) National Guidance for plastic pollution hotspotting and shaping action, Country report Thailand.

Make



Use



Dispose



Produce to satisfy the consumers' need

Marketing promotes more and more consumption



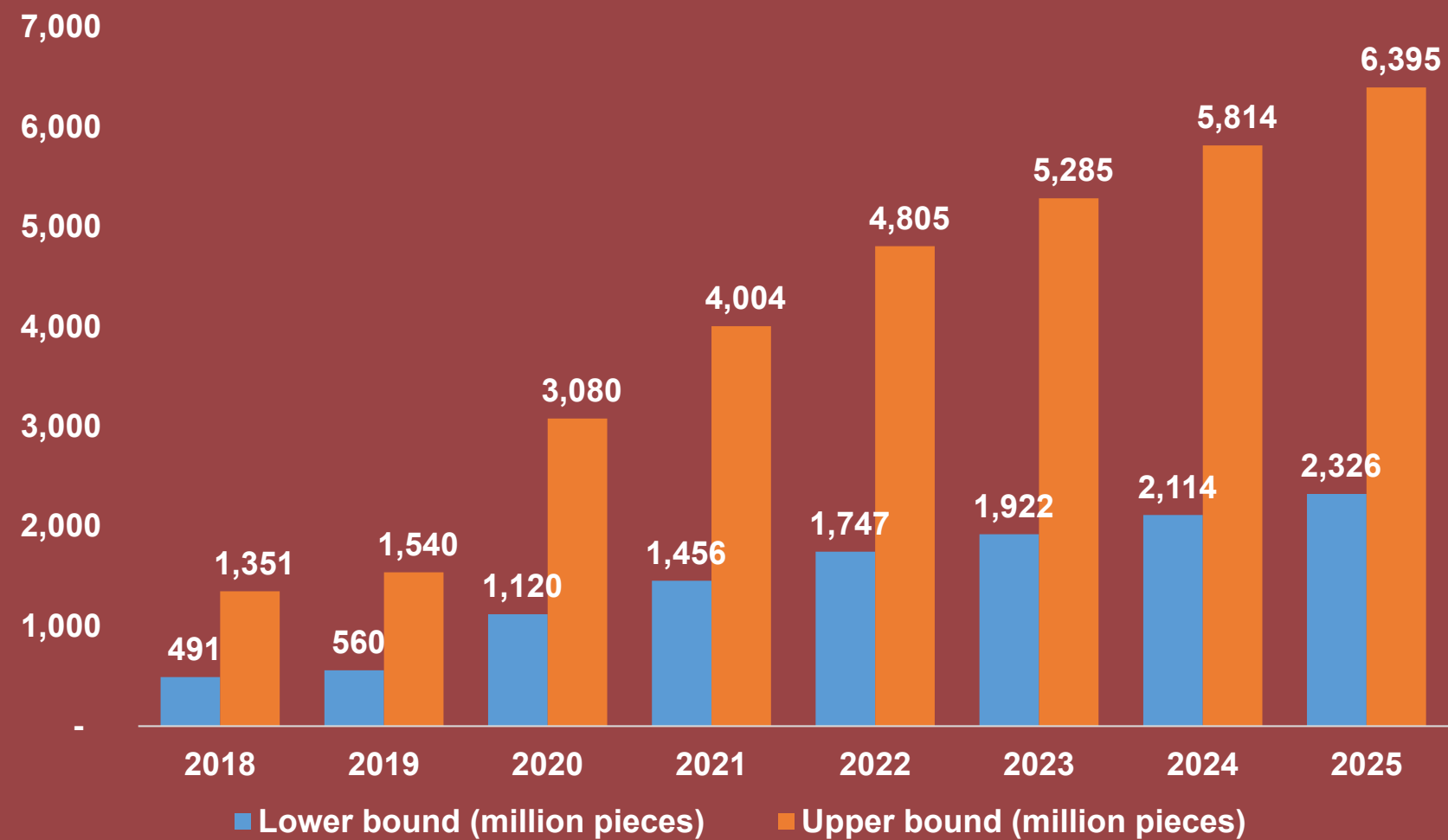
The growth of non-recyclable sachets



# Consumerism in urban areas

The growth of online food delivery aggravates the packaging waste issue. (COVID lockdowns have worsen the situation)

Plastic waste from online food delivery might increase to 6 billion pieces in 2025





## Lack of investment in source separation infrastructure



**Plastic waste leakage to the environment  
= External cost**

## Statistics about MSW and plastic waste in Thailand

- 28 million tons MSW per year.
- 1.9 million tons of plastic waste
- Recycle rate: 17.6% - 25%





# Fire incidents at dumpsites every years

The biggest fire incident in dumpsite, Praeksa, Sumutprakan in 2014

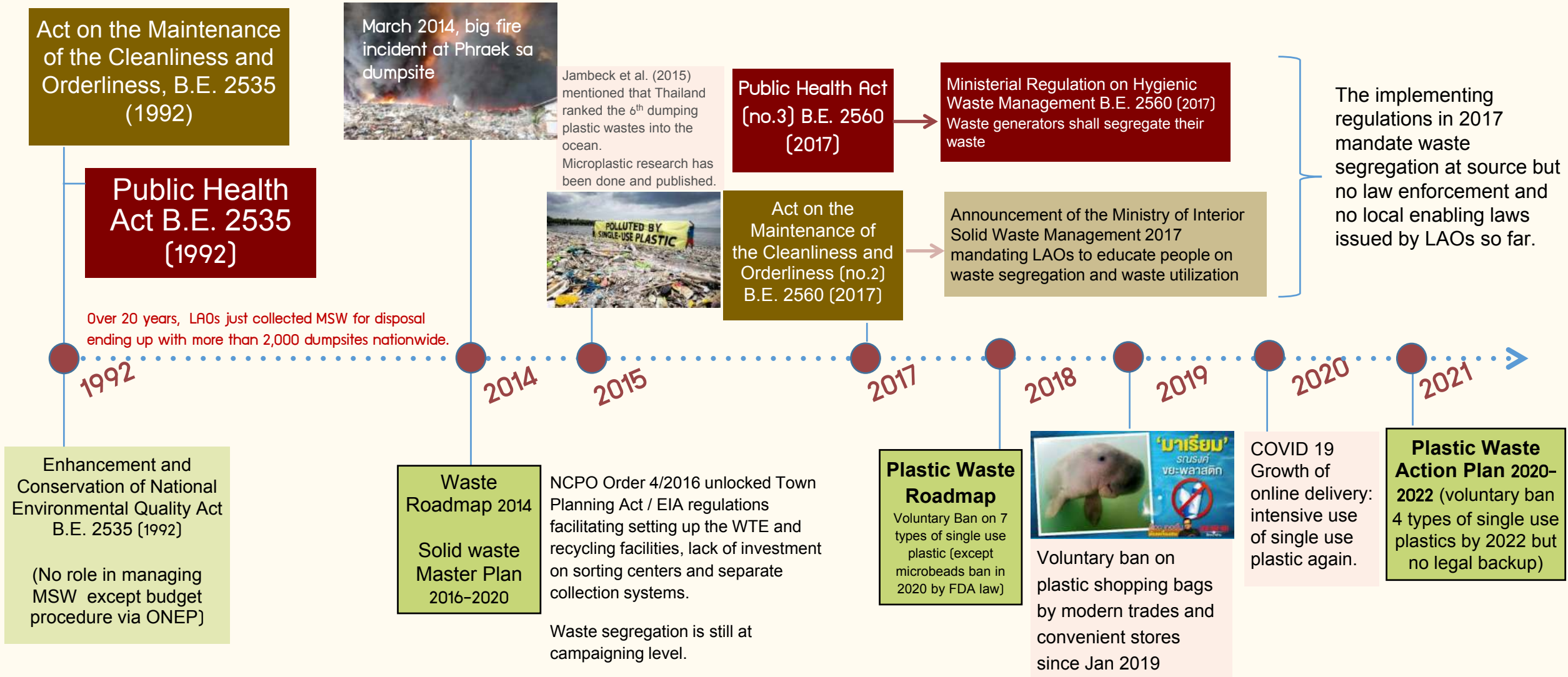


0.25 Sq.Km. (153 Rai)



# Thailand's MSW law and measures under linear economy: collect for disposal

The main laws only define the responsibility of local administrative organizations (LAOs) to collect and dispose MSW. By laws, other sectors have no responsibilities in reducing and managing waste.





**7,850 Local administrative organizations (LAOs)**  
mostly are medium and small size

Lack of political will, budget and understanding on the importance of waste segregation at source.

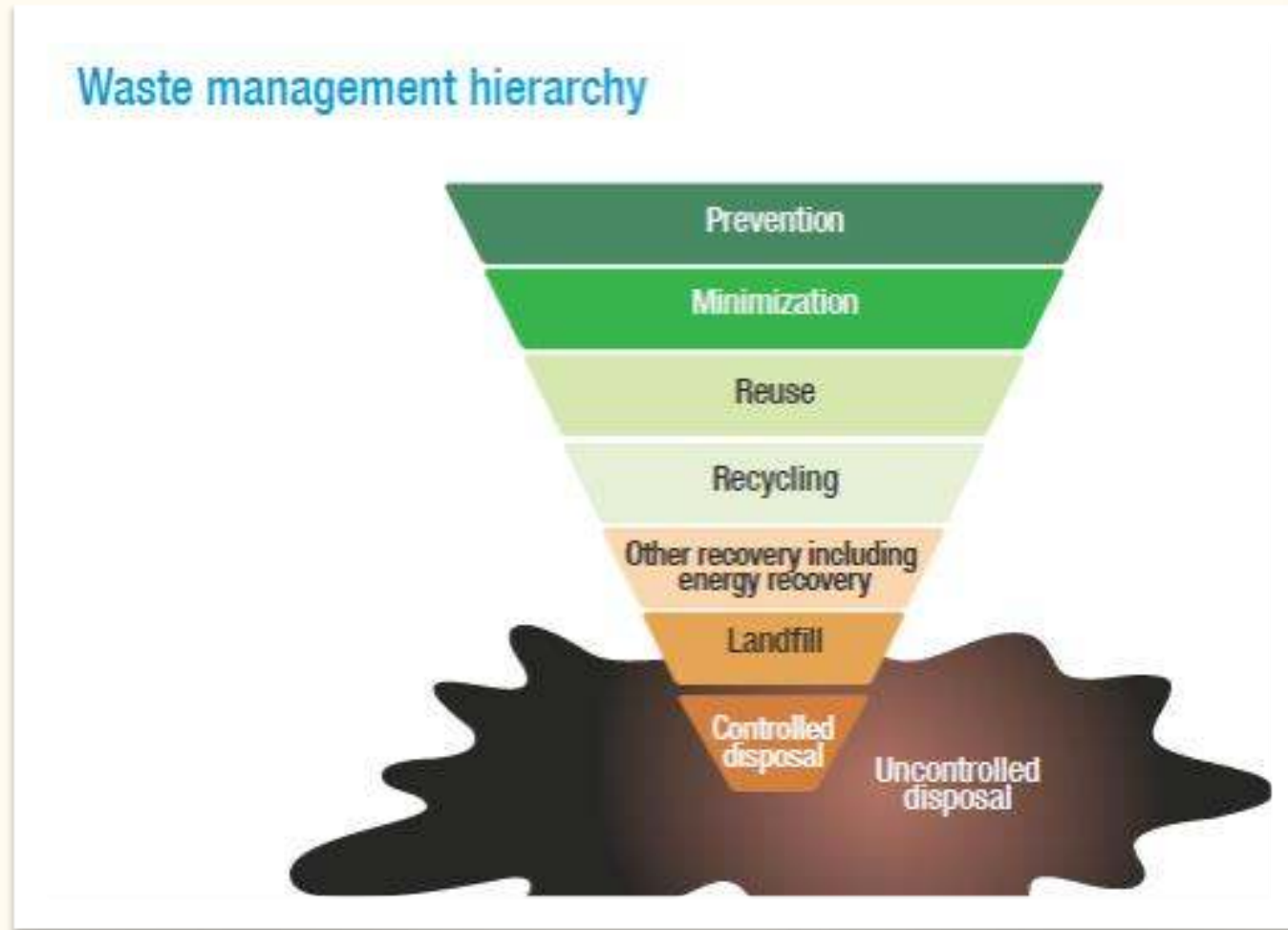
**Some large LAOs have budget but invest only in end-of-pipe solutions, WTE, no investment on waste segregation at source and infrastructure.**

It's time to reform the MSWM system.



Fundamental concept for waste management

## Sustainable waste management 3Rs



**Reduce**

**Reuse**

**Recycle**

Thailand: Laws and local administrative organizations focus on downstream disposal more than upstream segregation

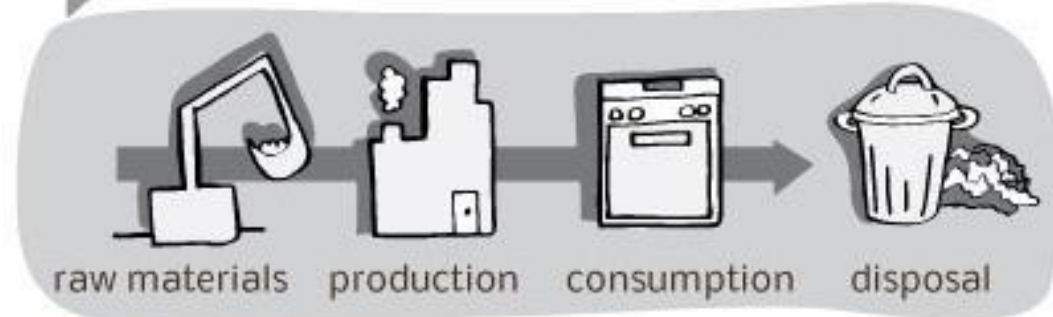


Fundamental concept for waste management

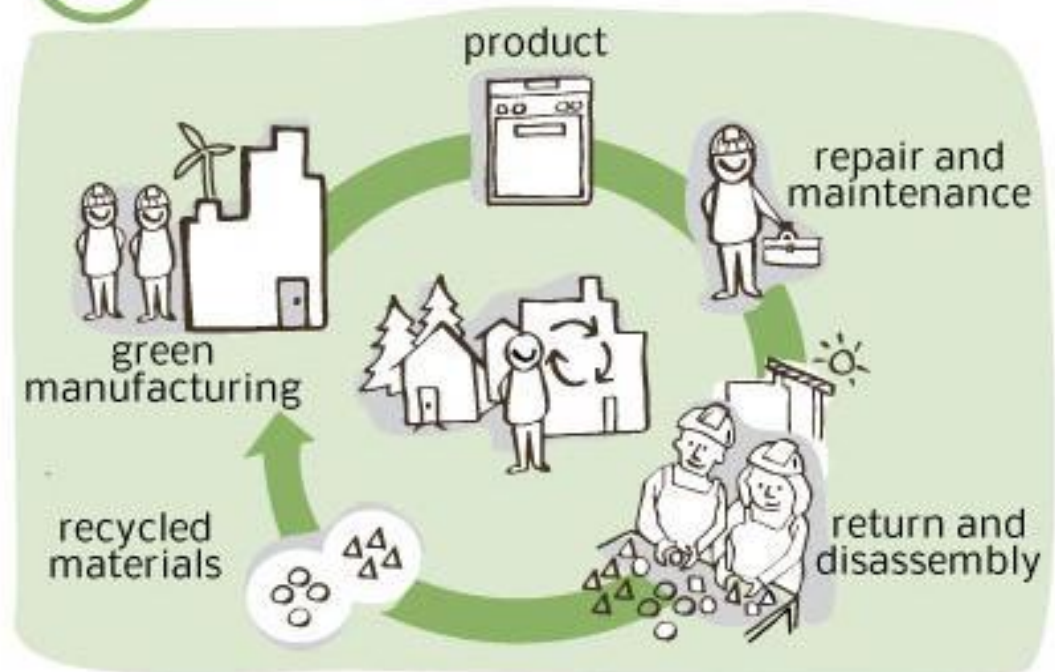
# Circular Economy

## Zero Waste Policies Shift

from linear systems



to closed loop systems



Fundamental concept for waste management

## Extended Producer Responsibility

**EPR extends producers' responsibility to cover post-consumer packaging (eco-design & take-back) that could lead to CE**

Deposit-refund system (DRS) is an economic instrument under EPR concept



Producer uses recycled materials to manufacture products and market

Retailer sells product



Producer is responsible to collect, process, recycle and dispose of the packaging and product

Consumer buys and uses product









# Comparison of Legal Measures Related to Waste Management, EPR and CE (Focusing Packaging)

		Germany	Chili	Japan	South Korea	China	Singapore	Indonesia	Malaysia	Vietnam	Thailand
<div><div></div> Available</div> <div><div></div> Partly available</div> <div><div></div> Unavailable</div>											
1. The main laws mandating people to reduce and segregate wastes at source		<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
2. Regulations on pay-as-you-throw (PAYT) schemes		<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
3. Laws promoting Circular Economy (CE)		<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
4. Laws mandating EPR schemes for packaging		<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>

# Comparison of laws and EPR movement in ASEAN

Weak points of the ASEAN countries are lack of law enforcement but having a law is better than none.

Laws/regulations	Singapore 	Malaysia 	Indonesia 	Philippines 	Vietnam 	Thailand 
The laws mandating people to reduce and segregate wastes at source	Resource Sustainability Act 2019	Solid Waste and Public Cleansing Management Regulations 2011	Waste Management Act 2008	Ecological Solid Waste Management Act 2000	Environmental Protection Law 2020	(In a subordinate legislation)
Laws mandating EPR schemes for packaging	The EPR system will be implemented in 2025 Started from reporting information and plan	Lack of subordinate legislation (planned to enact by 2026)	MoEF Regulation No. P.75/2019 on Roadmap to Waste Reduction by Producers	Draft EPR law (2020)	Waiting for the subordinate legislation	
Laws promoting Circular Economy (CE)			Circular Economy Concept on Solid Waste Management (Ministerial Decree No.13/2012)		Indicate the principles in the Environmental Protection Law 2020	
Voluntary EPR by producer (Global Brands)	(preparing the system for law compliance)	Malaysia Recycling Alliance (MAREA)	PRAISE	PRAMS	PRO Vietnam	TIPMSE



# Key findings

- Thailand has **policies and plans** to solve plastic waste problem and CE strategies, also committed to **Bangkok Declaration** on Combating Marine Debris and the **ASEAN Framework of Action** on Marine Debris in 2019.
- **A Subcommittee on CE** has been set up in 2020 under the National Committee on BCG (Bio, Circular, Green Economy) Model.
- **R&D grants** towards waste utilization and CE have been allocated.
- But **not so much progress on separate collection infrastructure** which should be done by LAOs, posing a key challenge to CE.

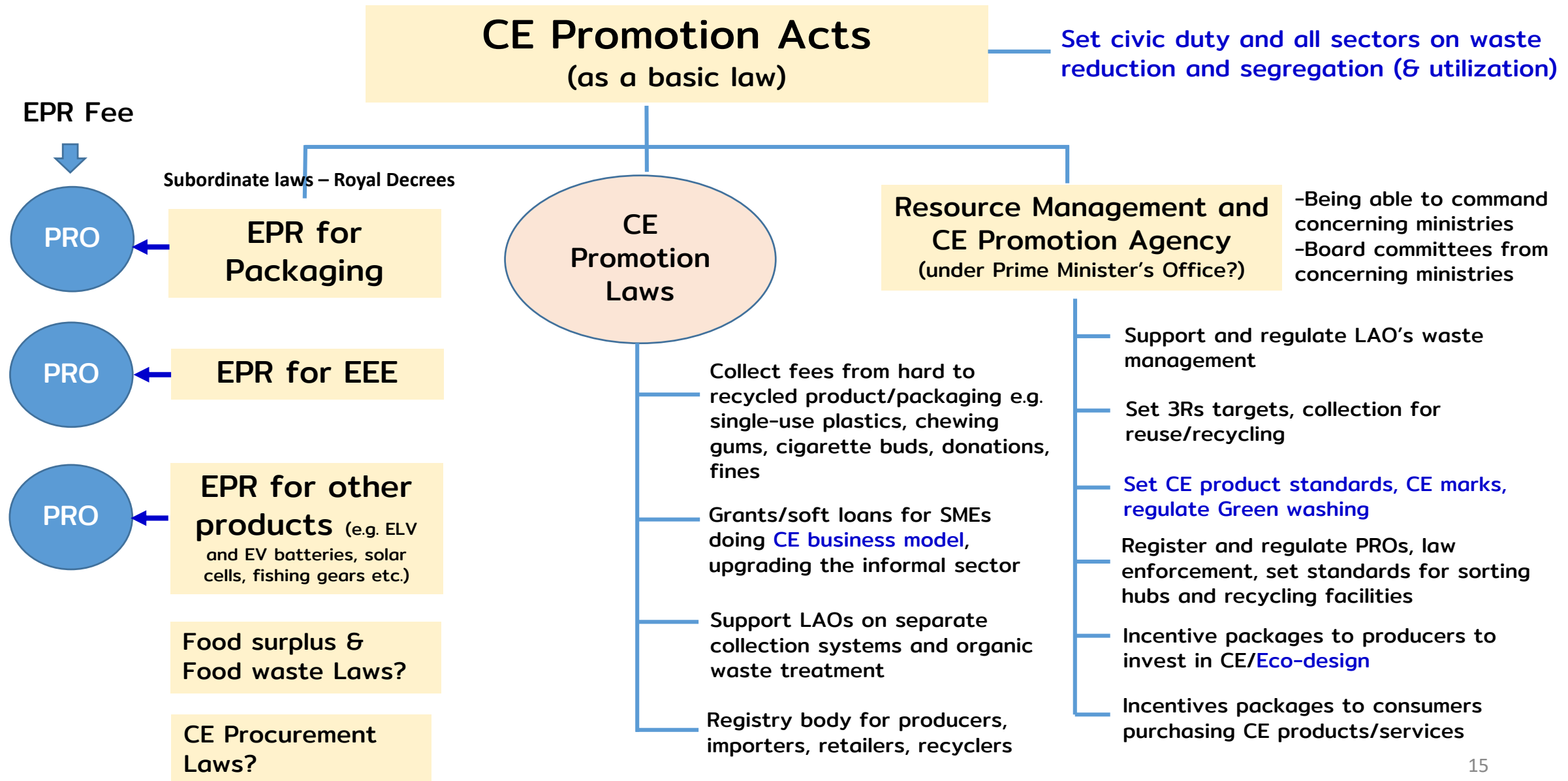
# Key findings (cont'd)

- Moreover, **its existing laws and regulations are still under linear economy, key barrier to achieve CE.**
- Without legal forms, it can be seen that the plastic waste crisis remains unchanged or minor changed.
- In the short term, producers and retailers should take a leading role in setting up a **voluntary EPR scheme** for take-back, while the government should provide **incentives for eco-design and support take-back with LAOs.**
- Meanwhile, it is urgent that **an inter-ministerial working group on CE Promotion Laws** should be established to draft the new laws which can improve waste management, address the plastic waste and other packaging waste via **EPR mechanism and incentivize all sectors towards CE.**





# (Draft) CE Promotion Acts



# Options for Legislative and Institutional Reforms

## Full package

Draft CE Promotion  
Act + EPR laws

Dedicated  
organization

Dedicated  
fund  
(promotional)

**Pros:** Comprehensive solutions

**Cons:** Difficult to pass, the government doesn't want to set up new organizations and funds

Which ministry should host such dedicated organization?

PM Office/ MONRE/ MOI / MOF ?

## Medium package

Draft CE Promotion  
Act + EPR laws

Dedicated  
organization

**Pros:** Without new fund setup, maybe easier to pass.

**Cons:** Lack specific supporting source for CE  
(The support depends on annual budget, lack of fundraising opportunities)

The government doesn't want to establish a new organization (indeed it can be just a reshuffling the existing organizations)

Innovation Fund for Industry (managed by FTI) matching fund with TSRI Fund

## Small package

Only EPR Act for  
Packaging

**Pros:** Only focus on the roles of private sector to set up take-back system and do eco-design. Easiest to pass without new organization and fund.

**Cons:** Partial solution on packaging waste, not be able to accelerate CE transformation

Which ministry should be the host agency for EPR laws?  
MONRE/ MOI ?



“We will not recycle our way out of the plastic pollution crisis: we need a **systemic transformation** to achieve the transition to a **circular economy**”

Inger Andersen, UNEP Executive Director