



2023MIECF

Macao International Environmental
Co-operation Forum & Exhibition
2023年澳門國際環保合作發展論壇及展覽



National Member of



OVERVIEW OF WASTE MANAGEMENT IN MALAYSIA: CHALLENGES & MOVING FORWARD 马来西亚废弃物管理概述：挑战与前瞻性应对措施

By D.L. Ho (何禮良),
Chairman of Waste Management Association of Malaysia
(馬來西亞廢棄物管理協會主席)



01 About WMAM

Role of the Waste Management Association of Malaysia (WMAM).

马来西亚废弃物管理协会 (WMAM) 发挥的作用

02 Current State & Challenges

Current states of waste management, highlights the challenges faced in waste management . 该国当前的废弃物管理实践, 强调废弃物管理面临的挑战

03 Transformation & Moving Forward

The transformation of waste management & importance of a circular economy approach as way forward. 马来西亚固体废物管理和公共清洁服务公司的私有化, 循环经济方法的重要性, 未来如何应对这些挑战



01

About WMAM



What is WMAM?

The Waste Management Association of Malaysia
National Member of ISWA

Established for **18 Years**



Technical & educational organization that allowed viewpoints of waste management matters



Organising local/international technical/delegation visits, trainings, conferences on issues & latest update of waste management



Non-profit association for waste management professionals in Malaysia



Aims to **establish** and **maintain contact** with **local & international** organizations & companies



Promote the **transfer of practical information and ideas** on waste management



Who is in WMAM?

International Involvement

China, Macau, Hong Kong,
Netherlands, Austria, India



Regional Involvement

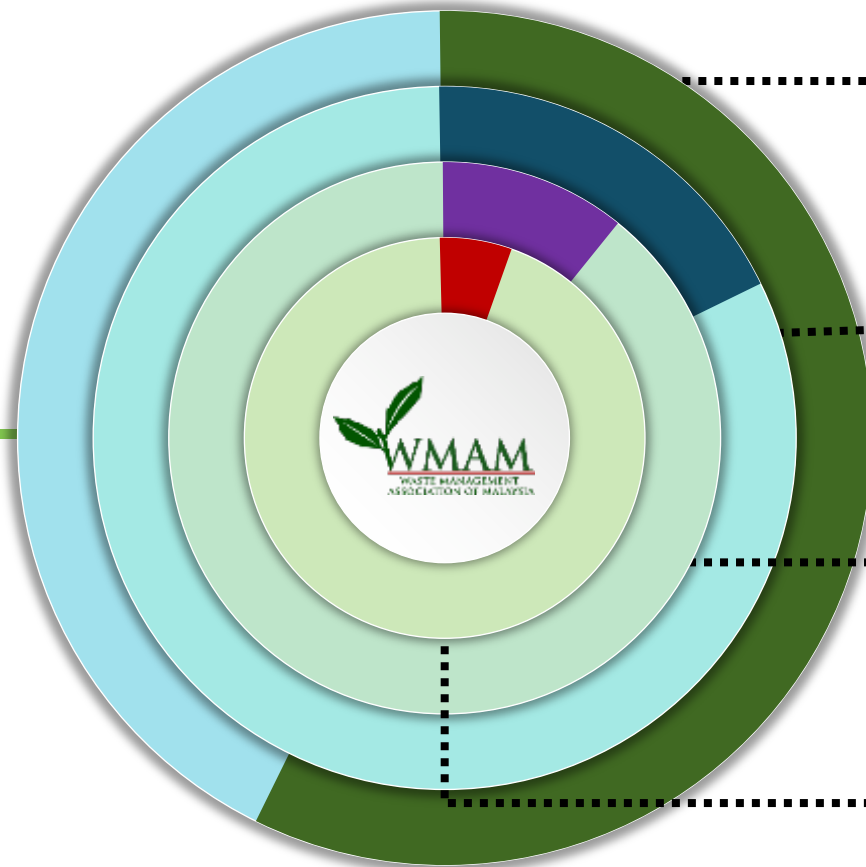
Singapore, Indonesia, Thailand, Philippines

272

Local Members



WMAM Member's Background



60%

Waste Management Companies

Solid Waste Collection, Waste Treatment, Landfill Operators, Integrated Waste Management And Public Cleansing Service Providers, Contractors

20%

Technology Providers

Renewable Energy, Waste Reduction & Treatment, Geosynthetic & Waterproofing, Solution Providers, WTE Facilities Operator, Recycling

15%

Manufacturers & Suppliers

Cranes And Material Handling Equipment, Industrial Equipment Suppliers, Manufacturers for waste management equipment

5%

Others

Waste Management consulting companies, lecturers, government officials

02 Current State & Challenges



PEOPLE OF MALAYSIA

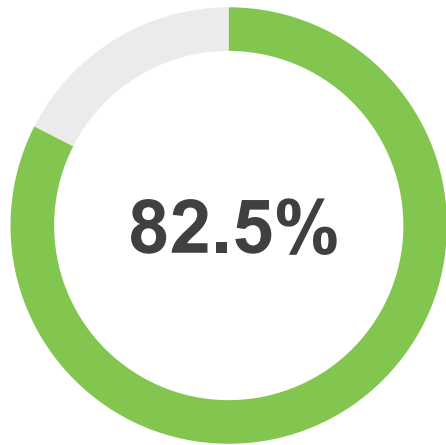


Current States & Challenges of Waste Management in Malaysia

In Malaysia, the population is reaching **34.3 million** in 2023 with annual population growth rate of **1.1%**

Malaysia on average is generating a huge amount of solid waste, estimated to be **38,000 metric tonnes per day**

Malaysia's Waste Generation



is disposed in Landfill



A green table with a white header and a white table body, mounted on a green cart with four wheels. The table is titled 'Waste generation in Malaysia'.

Year	Population	Waste Generation (Tonnage) per day	Waste Generation (Tonnage) per year
2015	31,709,650	37,100.29	13,541,606.33
2016	31,950,000	37,381.50	13,643,195.24
2017	32,049,700	37,498.15	13,686,824.39
2018	32,385,000	37,890.45	13,830,014.25
2019	32,581,400	38,120.24	13,913,886.87
2020	32,584,000	38,123.28	13,914,997.20
2021	32,655,400	38,206.82	13,945,488.57

With an average of about 38K metric tonnes of solid waste disposed in more than 100 landfills in Malaysia

Malaysia's landfills are expected to run out of space for the disposal of solid waste by 2050

Different Types of Wastes in Malaysia

Authority Agency



Solid Waste

- Household
- Institutional
- Commercial
- Industrial
- *Excluding Scheduled / Hazardous waste
- Construction & demolition



* MITI regulates importation of Waste from Industrial (Paper Waste & Metal Scrap)

Scheduled Waste

- Scheduled
- Hazardous




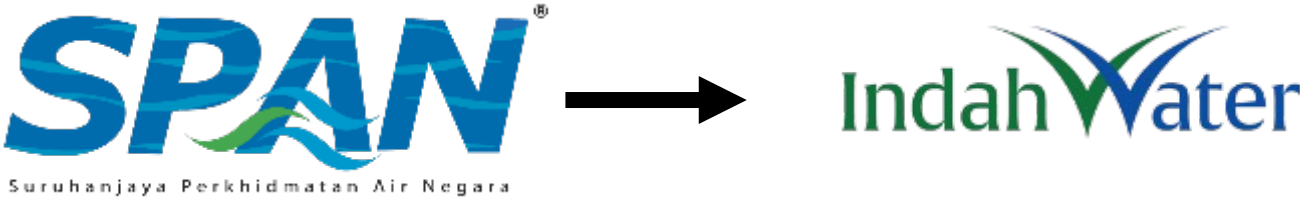
Agricultural Waste

- Aquaculture
- Livestock
- Agriculture (Fruits & vegetables)
- Floriculture
- Paddy
- Coconut



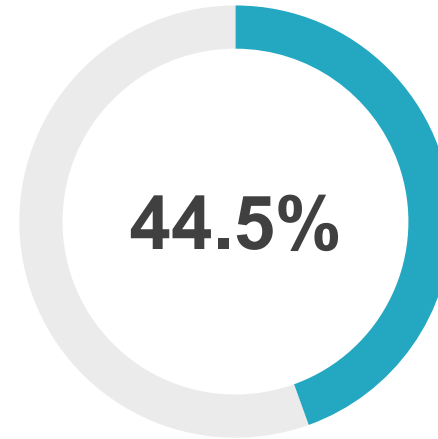
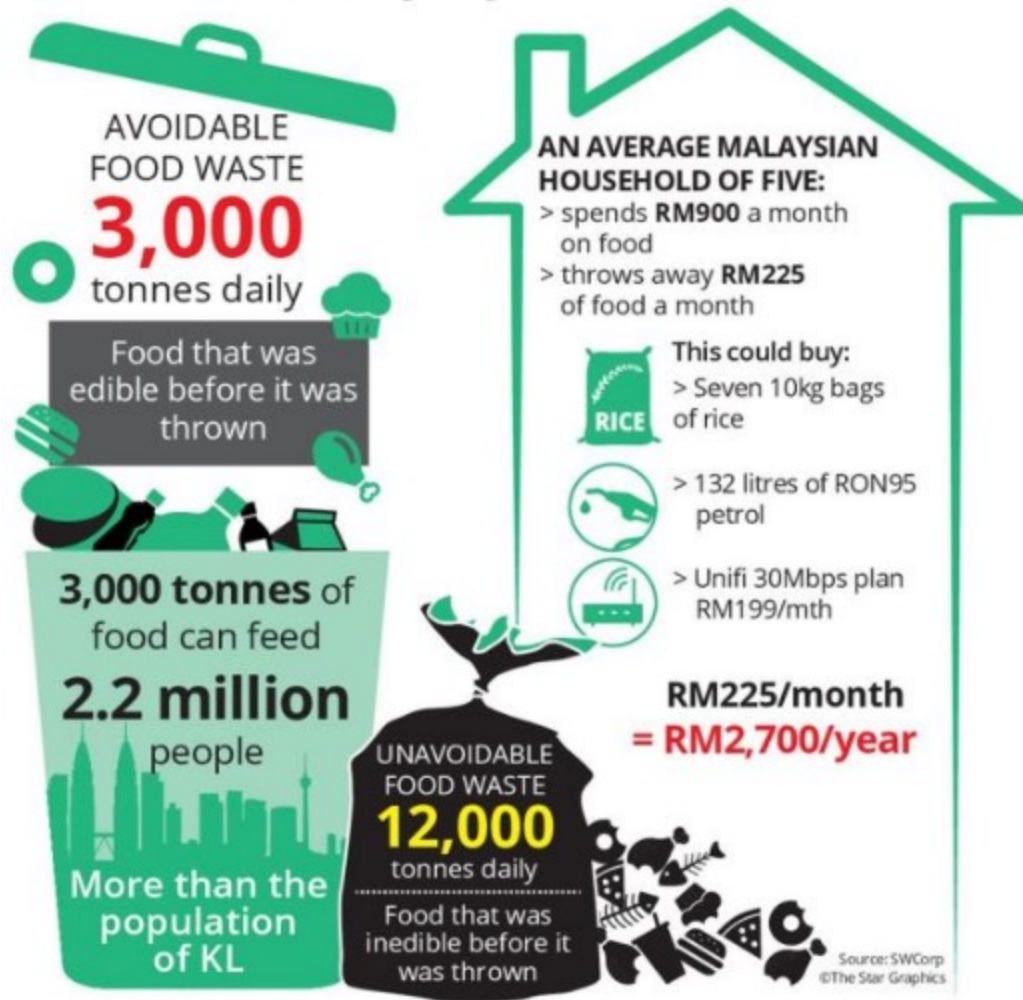
Different Types of Wastes in Malaysia

Authority Agency

<p><u>Commodity Waste</u></p> <ul style="list-style-type: none"> • Rubber • Palm Oil • Wood/Timber 	 <p>MINISTRY OF PLANTATION INDUSTRIES AND COMMODITIES → M P O B BERNAS</p>
<p><u>Radioactive Waste</u></p>	<p>ATOMIC ENERGY LICENSING BOARD</p>
<p><u>Sewage Waste</u></p> <ul style="list-style-type: none"> • Sewage • Sludge 	 <p>SPAN® → Indah Water Suruhanjaya Perkhidmatan Air Negara</p>
<p><u>Mining & Quarry Waste</u></p>	<p>JABATAN MINERAL DAN GEOSAINS</p>

Malaysia's Waste Composition

Malaysians produce 15,000 tonnes of food waste every day



Largest composition is Food Waste



MAIN CHALLENGES

- 140 + active landfills situation.
- Only 20% are sanitary landfills.
- Low tipping fees - discourage recycling

Setting up of Recycling facilities licensing and procedures is lengthy and not adequately facilitated.

- High cost of treatment such as Composting , AD , WTE

LANDFILLS

RECYCLING
& TREATMENT
FACILITIES

RECYCLING

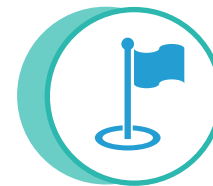
RECYCLING

- Informal sectors and price instability and uncertain feedstock volume make it difficult to plan and invest in MRF
- Low demand & low prices
 - Diapers & Organic waste
- Anaerobic Digestion and low tipping fee does not support investment without govt incentives & proper regulation.

OTHER CHALLENGES

Poor waste composition & management, comingled municipal solid waste with high organic waste content and dirty recyclables

-ve Public Perception, Commercial feasibility for waste management technology, lack of **government incentives**



Land Scarcity for landfill and **increasing cost** of solid waste management, unsanitary **landfill**

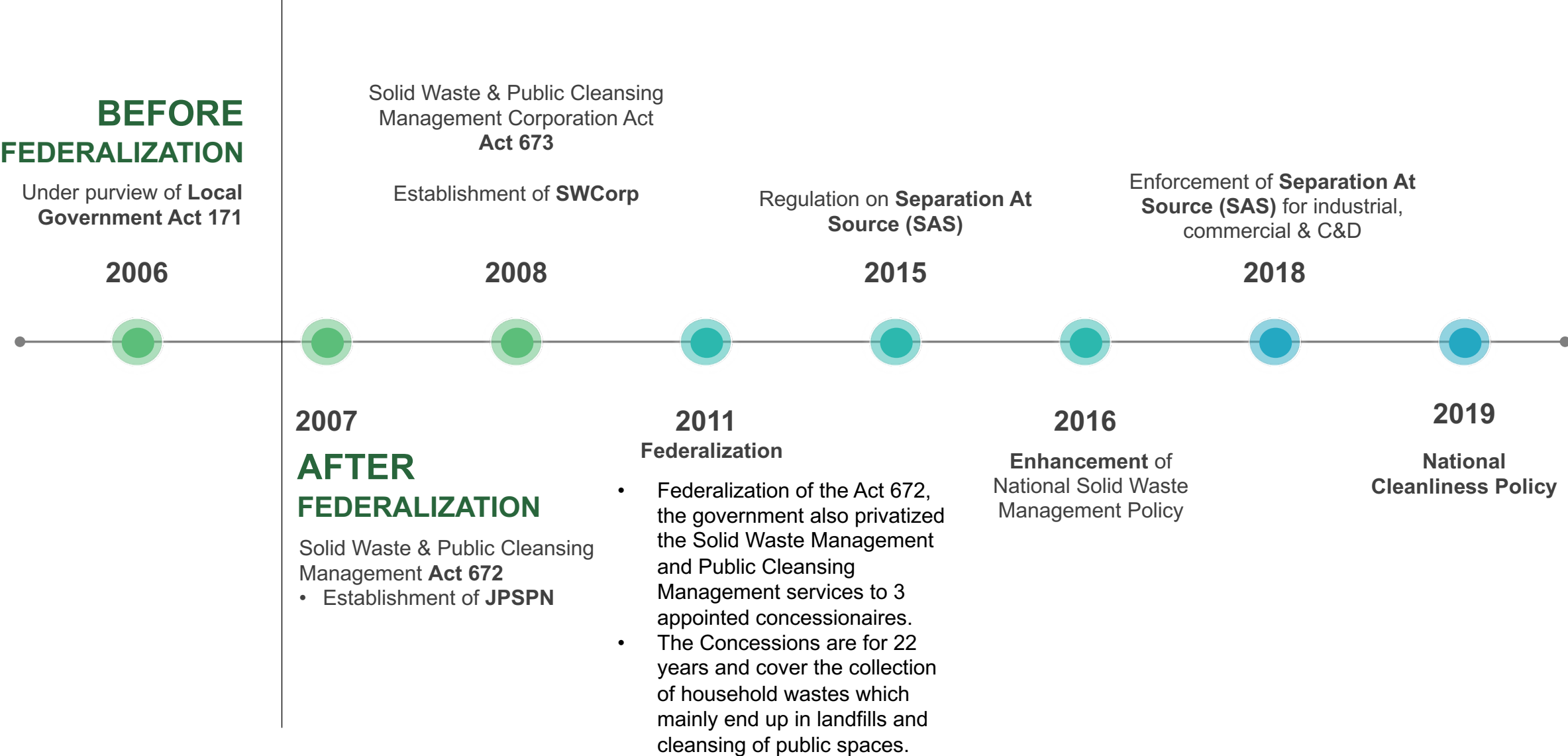
Lack of Enforcement of existing regulation on Waste Management; Separation at Sources; Informal sectors

Financial Constraint, Insufficient revenue source from low tipping fees and non-bankable contracts

03 Transformation & Moving Forward



Transformation of Waste Management in Malaysia



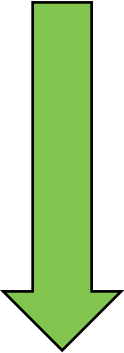
MOVING FORWARD 2022- 2025



Development of
Solid Waste
Integrated Waste
Treatment Facility
(IWTF)

2022

National Circular
Economy Council



Circular Economy
Blueprint for Solid
Waste

2024

2023

Development of
Waste Eco Pak
Guidelines (WEP)

Implementation
of Extended
Producer
Responsibility
(EPR)

2025

40% National
Recycling Rate





Landfilling continues to be the main mode of managing solid waste in the country.

Aim of the government is to minimize disposal of waste to landfills by increasing recycling through MRF and waste treatment facilities such as composting, Anaerobic Digestion and Waste to Energy.

REDUCE REUSE RECYCLE

FABRIC



PAPER



PLASTIC



“

Addressing these concerns, the government seeks to **increase the recycling rate of household waste to 40 %** under the Twelfth Malaysia Plan (12MP).

HERE IS
NO
MARKETS
FILL
ME UP

Target of Malaysia by 2030

(Source: Green Technology Master Plan 2017-2030)

- The Solid Waste Management and Public Cleansing Corporation (SWCorp) has set a recycling rate target in the 7 states under its supervision to 40% by 2025
- With the target 2% increase per year
- High success rate in Old Newsprint, Carton and paper recycling since early 2000
- Non-ferrous recovery is high due to high price and good demand.
- Plastics- mainly PET and HDPE/ LDPE but low quality

CURRENT

MOVING FORWARD



17.5% (2016)



Recycling rate

22% (2020)
25%* (2025)
28%* (2030)

*Expert assumption by the National Solid Waste Management Department (JSPN) and approved during the meeting on 10th August 2017 on Post 2020 Target Recycling Rates and Solid Waste Management Facilities.

RESOURCE RECOVERY



» Electricity Generation
» Energy Efficiency

» Industrial Efficiency

» Public Transportation
» Private Transportation
» Cleaner Fuel

» Green Building Design
» Sustainable Construction Practices
» Green Building Materials

» Waste Treatment & Disposal
» Resource Recovery

» Integrated River Basin Management
» Water Treatment & Distribution Technology
» Water Utilisation Technology
» Water Harvesting Technology
» Wastewater Treatment Technology



EXISTING INITIATIVES

- ***Waste treatment and disposal***
 - Policies improvement and technology upgrading in landfill operation;
 - Introducing policy on food waste management; and
 - Introducing market enablers through EPR.
- ***Waste and resource recovery***
 - Mandating the installation of methane capturing facilities;
 - Conducting research to expand the use of biogas as by-product of palm oil mills;
 - Establishing a working group to promote biogas capture at all mills;
 - Implementing grading and certification mechanism, and talent development initiatives;
 - Implementing landfill tax and levies.



NEXT STEPS



Knowledge and development .

Implement measures to transit from linear to circular economy. Capacity building and knowledge sharing

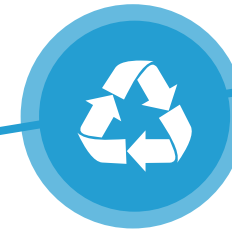
- Training and technical workshop
- Adopt successful circular economy models adapted to Malaysian waste management.



Encourage & promote **green products through circular economy.**

Implement EPR and Landfill / Carbon Tax to reduce waste to landfills.

- Engineering Solutions
- Innovative solutions



Introduction of new technologies for waste management from smart and green collection to treatment

including MRF, composting, anaerobic digestion & WTE facilities.

- Material Recovery and Sorting
- Composting
- Anaerobic digestion

WAY FORWARD

Review and update existing waste management roadmaps, studies, reports from Labs and Workshops on the National Strategic Waste Management Masterplan.

Landfill waste diversion targets should also be established with incentives and penalties/ fines for non-compliance



Consolidation of waste management data for better planning of waste flow

Establish steering working committee represented by key stakeholders

Localize adoption of other countries directives model adapted to ASEAN demography and political landscape



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THANK YOU / TERIMA KASIH / 谢谢

secretariat@wmam.org / +603 2788 9200 ext 9271

By D.L. Ho (何禮良)
Chairman of Waste Management Association of Malaysia
(馬來西亞廢棄物管理協會主席)