

Food Waste Management in Singapore

Presented at : MUFPP & IURC Asia Pacific Food Policy Training

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15 Dec 2022

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Outline

1. Overview of Zero Waste Masterplan and Singapore Green Plan 2030
2. Food Waste Management Strategy

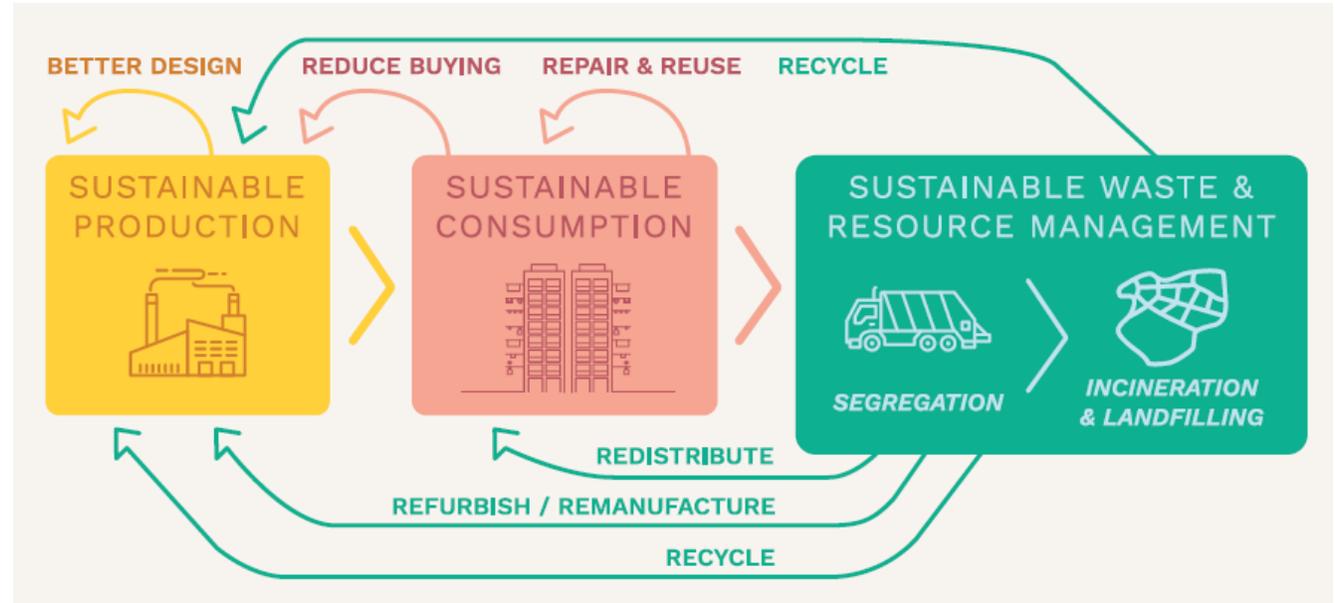
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Zero Waste Masterplan and Singapore Green Plan 2030

Zero Waste Masterplan



Launched in 2019, the Masterplan lays out Singapore's key strategies towards a Zero Waste Nation, with important roles by Government, Businesses and the Community



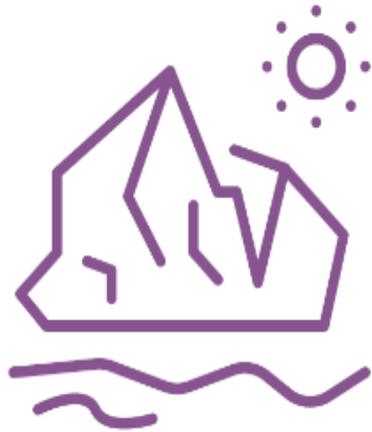
Our Targets

- 1 Extend Semakau Landfill's lifespan **beyond 2035**
- 2 Reduce amount of **waste sent to landfill per capita per day by 20%** by 2026, and **30%** by 2030
- 3 By 2030, achieve a **70% overall recycling rate**



Zero Waste Masterplan

Our Vision: A Sustainable, Resource-efficient and Climate-resilient Singapore



Climate Resilience

Address **existential threats of climate change** especially rising sea levels

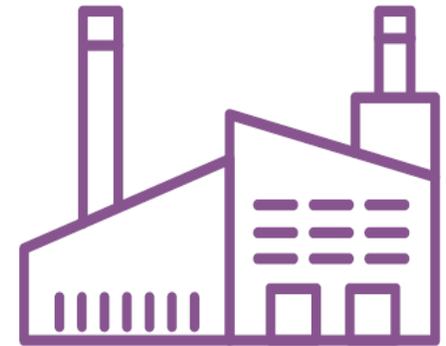
Cope with rising temperatures and changing rainfall patterns to sustain a liveable environment



Resource Resilience

Ensure **safe and secure supply** of critical resources

Overcome global resource constraints by **maximising resource efficiency & closing our resource loops**



Economic Resilience

Ensure the **future Singapore economy remains competitive** by overcoming carbon & resource constraints

Rally stakeholders towards **sustainable economic growth**

SG Green Plan 2030



A **national sustainability movement**, with concrete sectoral plans and targets over the next ten years that will position Singapore to **achieve net zero emissions as soon as viable**



5 Pillars of the SG Green Plan



City in Nature



Sustainable Living



Energy Reset



Green Economy



Resilient Future

For more information, visit www.GreenPlan.gov.sg

SG Green Plan 2030



**Sustainable
Living**

Initiative

“Reduce, Reuse and Recycle” as a norm for citizens and businesses, with a national strategy to **address e-waste, packaging waste and food waste**

Target

To reduce the amount of waste (per capita) sent to landfill by **20% by 2026**; and subsequently by **30% by 2030**

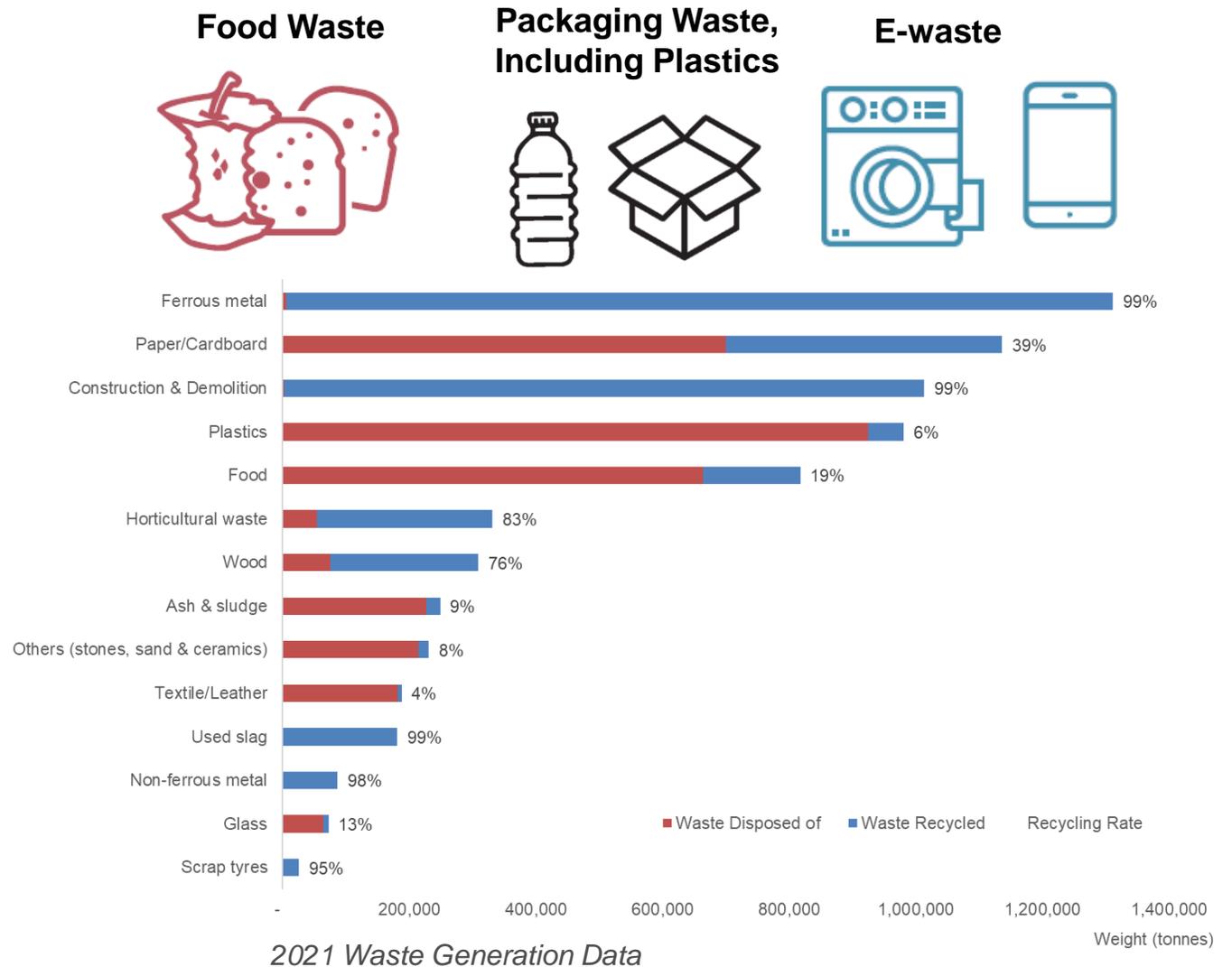
For more information, visit www.GreenPlan.gov.sg



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Resource Sustainability Act (RSA) to Close Three Priority Resource Loops

- RSA an integral part of Singapore’s strategy to build a sustainable, resource-efficient and climate-resilient nation
- Gives legislative effect to the regulatory measures targeting three priority waste streams which have relatively high generation and low recycling rates



Closing the Food Waste Loop

Mandatory food waste segregation for treatment and reporting by large food waste generators:

From 2021:

Developers of new large commercial and industrial premises to allocate space for on-site food waste treatment systems in their design plans

From 2024/2025:

Mandated food waste segregation for treatment/recycling and reporting for large industrial and commercial food waste generators

Ensure that segregated food waste is treated on-site or off-site



Food retail establishments



Hotels and malls



Industrial premises



Resource Sustainability Act
- refer to Part 5 (Food Waste)

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Food Waste Management Strategy

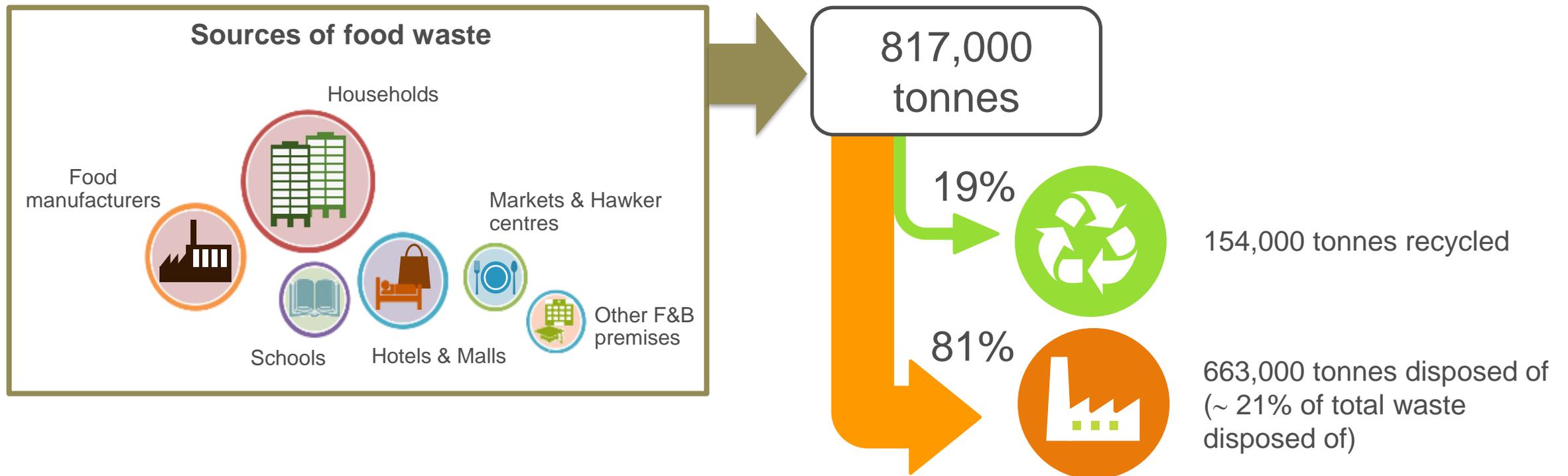
Drivers for Food Waste Management

- Food wastage stresses our food security
- Food waste causes smell and pest nuisances and requires frequent collection, thereby increasing road traffic
- Food waste contaminates recyclable materials like plastic containers and cardboard cartons. Separating food waste will increase recycling
- Food waste can be converted into useful resources/products

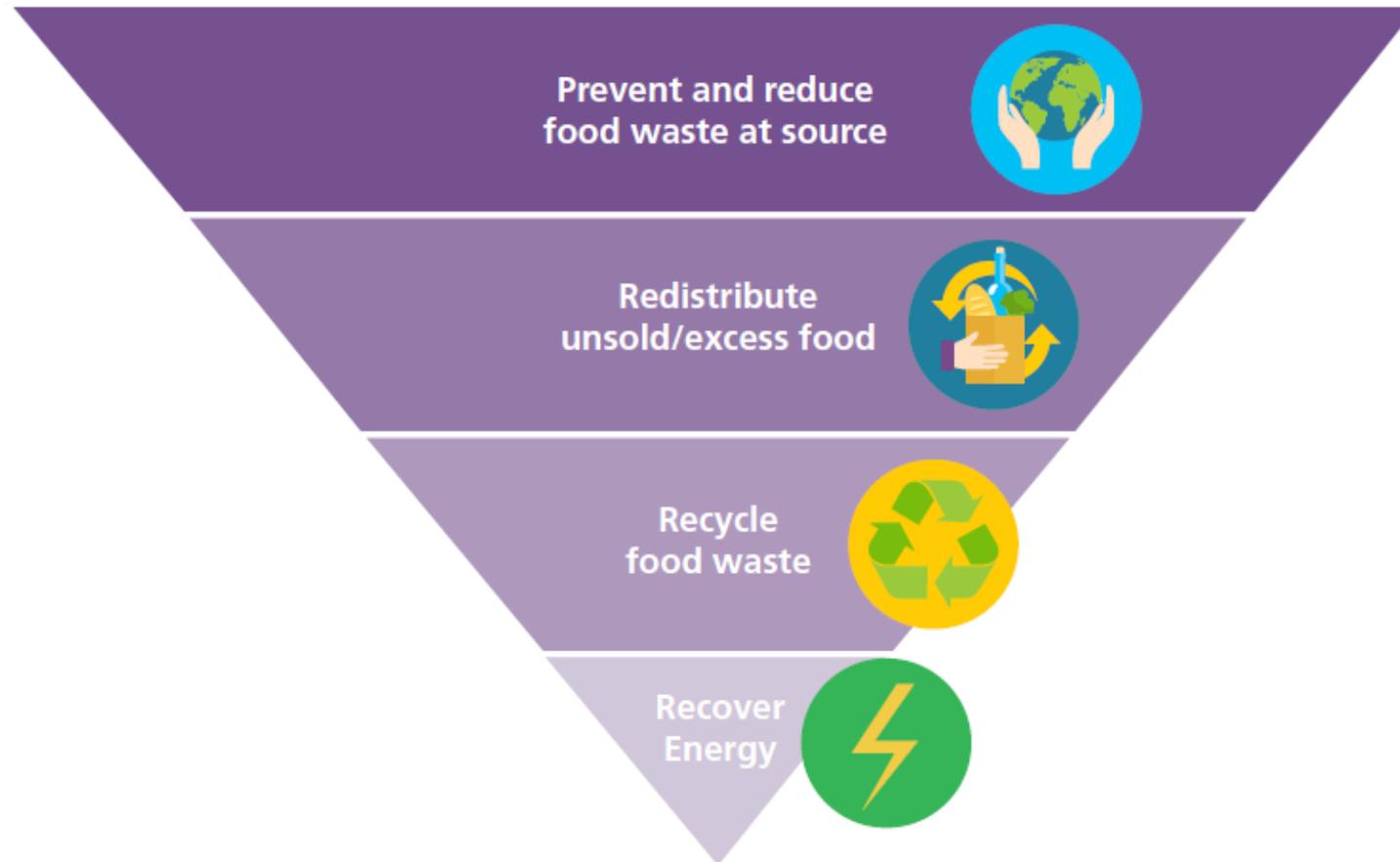


Food Waste Statistics (2021)

Food waste is one of the biggest waste streams in Singapore. It accounts for about 12 per cent of the total waste generated in Singapore.



Food Waste Management Strategy



Source: Food waste segregation and treatment guidebook (National Environment Agency, May 2020)

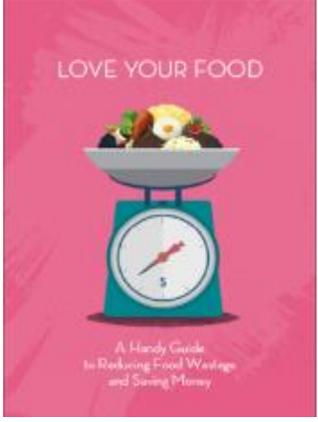
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Strategy 1 – Prevent and Reduce Food Wastage at Source

Food Waste Reduction Outreach Programme (since 2015)

- Aims to increase awareness of the food waste situation in Singapore
- Encourage consumers to adopt smart food purchase, storage and preparation habits that can help to minimise food wastage



Online handy guide



Poster



Table top stickers



'Waste Less, Save More' Video



Poster



Say Yes To Waste Less – Food Waste Reduction

- Aims to encourage public to reduce excessive use of disposable and food wastage.
- More than 1,600 premises joined the movement to encourage public to reduce the use of disposal and/or food wastage.

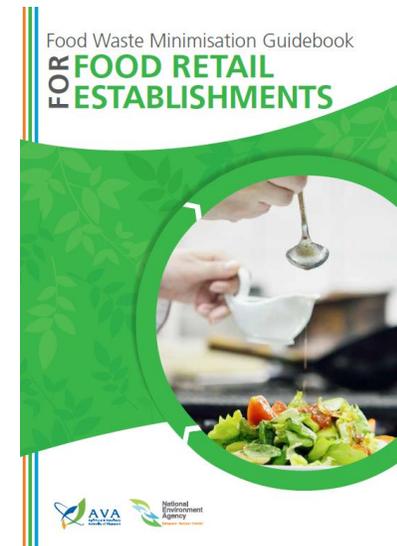
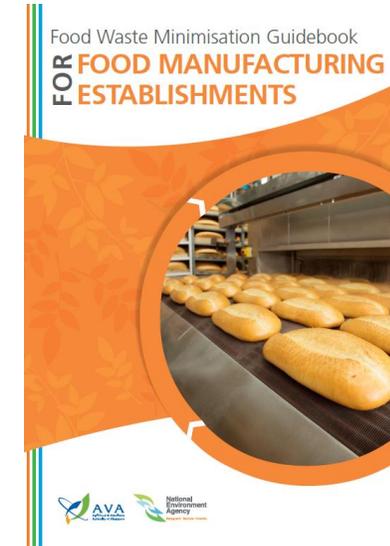
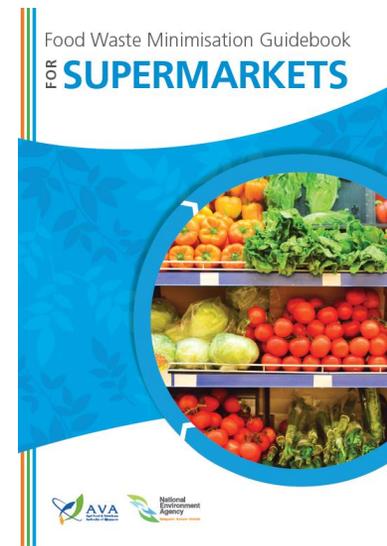
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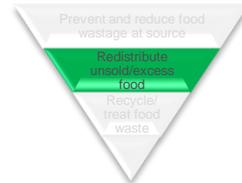


Strategy 1 – Prevent and Reduce Food Wastage at Source

Food Waste Minimisation Guidebooks

- Guides supermarket, food retail establishments and food manufacturing establishment towards developing their own food waste minimisation plan
- Outlines possible areas and strategies to minimise food waste
- Step-by-step guide and features case studies of initiatives by industry players





Strategy 2 – Redistribute Unsold/Excess Food

Food distribution organisations

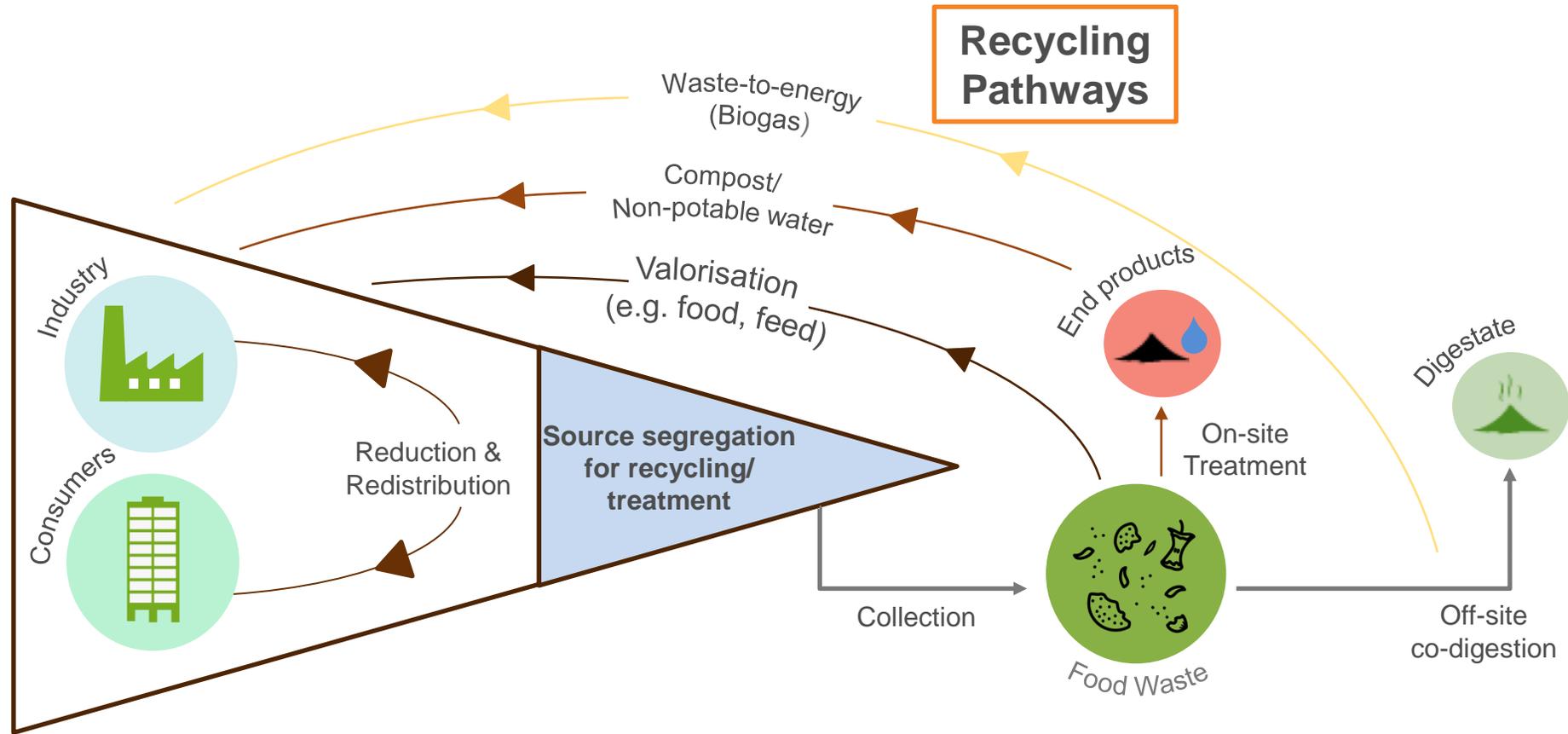
- Encourages both organisations and members of public to donate their unsold and excess food to food distribution organisations
 - Placement of food boxes at premises which allows individual to drop off their excess food items that have not expired at designated collection points
- Encourage food retail establishments to tap on **food distribution apps** to sell excess food
- Guidelines on the proper handling and re-distribution of unsold and excess food incorporated into food waste minimisation guidebooks





Strategy 3 – Recycle/Treat Food Waste

Closing the Food Waste Loop





Strategy 3 – Recycle/Treat Food Waste

Food waste recycling/treatment solutions

- Promote recycling of homogeneous food waste into higher value-added product such as spent grains from beer brewing into animal feed
- Explore cost-effective treatment solutions to valorise homogenous food waste/by products



Conversion of homogeneous food waste into animal feed



Conversion of soya bean waste into okara floss



Strategy 3 – Recycle/Treat Food Waste

Encourage adoption of on-site food waste treatment system for mixed food waste

- Segregation of food waste at source for on-site treatment to minimise transportation
- Converts food waste into compost/fertiliser for landscaping or water for non-potable use
- Adopted by ~150 premises, such as hawker centres, hotels, shopping malls, supermarkets, educational institutions



Ang Mo Kio Ave 4 Market and Food Centre

Food Waste Segregation and Treatment Guidebook

- To guide premises owners and operators on implementing proper food waste segregation and adopting food waste recycling/treatment.
- Guidebooks feature case studies on food waste segregation and treatment



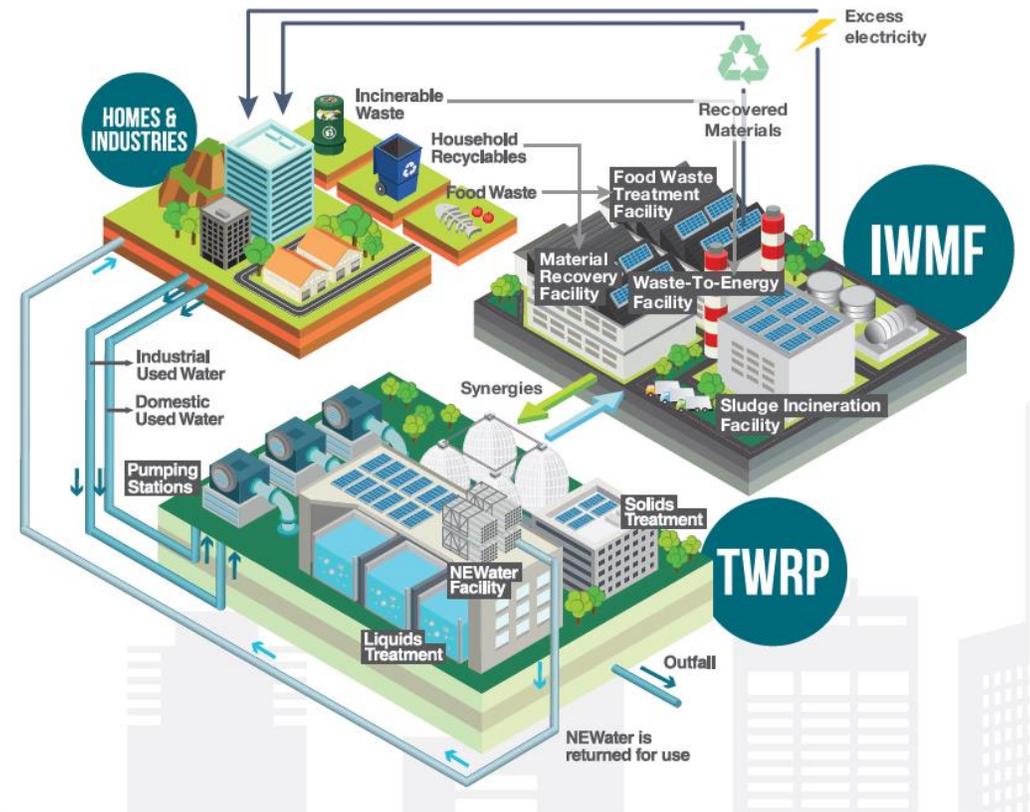


Strategy 3 – Recycle/Treat Food Waste

- Demonstration project to co-digest food waste with used water sludge
- Results have shown that the process can triple the biogas yield vs. the treatment of used water sludge alone



- Co-digestion approach will be implemented in Tuas Nexus – a co-located facility of NEA's future Integrated Waste Management Facility (IWMF) and PUB's Tuas Water Reclamation Plant (TWRP)



Our Environment
Safeguard • Nurture • Cherish

