

The background of the entire page is a close-up photograph of several apples lying on a bed of dry, brown leaves and twigs. Some of the apples are still red, while others are significantly decayed, showing brown, mushy textures and some holes. The lighting is somewhat dim, creating a somber and naturalistic feel.

Promoting the diversion of organic waste from landfills through composting and the involvement of various stakeholders

A Call to Action for Local Authorities

Acknowledgements	01
01 Executive Summary	02
02 Rationale Behind This Policy Brief	04
03 Where Malaysia Stands on Organic Waste Management	05
04 Community-Led Solutions: Unlocking the Potential of Local Initiatives	10
05 Lessons from Bandung, Indonesia, Taiwan and Singapore	13
06 Concrete Actions: Policy Proposal and Recommendations	15
07 CONCLUSION: THE TIME TO ACT IS NOW	18
Appendix: Glossary of Terms	20
References	21

Acknowledgements

The Zero Waste Malaysia Policy and Research Team would like to warmly thank the 13 local community organisations, including Lydia from Free Tree Society, Irfan from Urban Hijau, Fiona from GreenSteps, Yap Jing Zong from 4Leaf Nursery and Landscape Services, Ili and Ashaari from Kebun Rahmat, Harbir from Ground Control, Iqmal and Aida from Garden 8, Shathis from AFY Organics, Naqib from Eats, Shoots and Roots, Surina and Alice from Didik Alam Society, Adeline and Pavel from Kebun Komuniti Hartamas, Will from Folo Farm and Katy Lee from HOPE worldwide Malaysia, for generously sharing the challenges they face in running composting sites and for their expertise in managing organic waste, which has been invaluable to our research.

We also deeply appreciate Cuifen from Food Citizen in Singapore, Yaksa Pelestari Bumi Berkelanjutan (YPBB) team in Indonesia and Chen, who is involved in the community-supported agriculture (CSA) programme and other contributors from Taiwan for sharing their experiences and insights. Special thanks to Claudia for her extensive editorial support, which greatly supported the refinement of this policy brief.

With thanks, ZWM Policy and Research Team: Aisyah, Laura, Sue Yee and Tasha



01 Executive Summary

16,688
tonnes

Food waste generated
daily in Malaysia ¹

RM2
billion

Allocated annual waste
management cost to
those under Act672 ³

2041

Year when 21
landfills will be FULL ²

5.8%

Malaysia's GHG
emissions from waste ⁴



With landfills in Malaysia expected to reach full capacity within the next two decades, there is an urgency to rethink our waste production and management systems. Decision-makers are increasingly looking to waste-to-energy (WTE) plants as the solution to our waste problem. However, they overlook a key detail in our local context that reduces the effectiveness of this technology, which is that a significant portion of our waste that goes to landfills is **food waste**.

WTE plants cannot efficiently process high-moisture food waste, and if this moisture is added to the plant, toxic dioxin emissions^a will be produced. Alternatively, our proposed solution to compost food waste at source will address four major challenges simultaneously—it will extend landfill life, eliminate methane emissions, reduce costs, and prevent dioxin emissions while creating valuable soil amendments.

To implement this, Malaysia already has proven community models to refer to; regional success stories from Indonesia (Bandung), Singapore, and

Taiwan to learn from; and increasing public awareness amongst locals. Now, the missing piece of the puzzle is policy enablement.

Local authorities must prioritise 3 immediate actions:

Mandate landscape waste composting

Include composting in municipal procurement

Launch composting programmes in schools or residential areas

With decisive action, local councils could potentially divert 44% of waste from landfills^a, save hundreds of millions in operating costs, meet climate targets, and build resilient communities—all while creating local jobs and supporting urban agriculture.

a. 44% refers to the food waste composition of household waste generated.



02 Rationale Behind This Policy Brief

Local councils face a perfect storm: landfills reaching capacity by 2041⁶, waste management costs consuming RM2 billion annually⁷, and mounting pressure to meet climate targets. Food waste—comprising 44% of all waste nationally⁸—is the single largest contributor to this crisis, generating methane emissions and undermining waste-to-energy operations.

Composting offers an immediate, affordable solution that simultaneously addresses landfill capacity, reduces greenhouse gas emissions, and supports climate resilience through soil carbon sequestration. This brief presents evidence-based policy recommendations for local authorities to implement composting as a cornerstone of sustainable waste management.

Background: Zero Waste Malaysia's 2024 Survey

This policy brief was initiated following Zero Waste Malaysia's (ZWM) 2024 survey, which revealed that out of 490 respondents, **40% had never composted before**. This finding points to a larger systemic issue: a significant portion of organic household waste, particularly food waste, continues to be discarded into landfills instead of being returned to the soil.

Malaysia does not only face rising volumes of organic waste, but also significant challenges in managing them^a. The increasing amount of food waste and the shrinking landfill capacity place enormous pressure on local waste systems. This has direct environmental consequences, from methane emissions and leachate pollution to higher costs of waste collection and disposal, all of which are borne by local councils and concessionaires under the Solid Waste and Public Cleansing Management Act 2007 (Act 672).



a. Data from SWCorp in Kai Seng et al. (2021) shows that food waste in Malaysia increased steadily from 8,550 tonnes daily in 2005 to 16,688 tonnes in 2018.

03 Where Malaysia Stands on Organic Waste Management

Malaysia continues to face deep, systemic gaps in how organic waste is managed. Waste is still largely treated as something to be collected and discarded elsewhere—a short-term logistical issue, rather than a resource that can be recovered and reintegrated into the local ecosystem. This disposal-oriented mindset has shaped the country’s waste governance for decades, reinforcing a system that rewards collection and disposal rather than reduction and recovery.

We reviewed several national and local government policies and identified key findings as below:



a. Our observation indicates that efforts by local authorities to manage organic waste generally mirror the national landscape, characterised by pilot projects, voluntary participation, and fragmented implementation.

At the same time, funding structures continue to prioritise large-scale, downstream infrastructure such as WTE facilities. These projects are capital-intensive, often financed through federal loans or public-private partnerships, and have limited transparency in cost recovery. For local councils already struggling with debt and constrained budgets, such investments divert attention and resources from low-cost, high-impact solutions like household composting or community-based organic waste recovery.

Composting in Malaysia directly supports the Global Methane Pledge by **preventing** landfill methane

Why Local Authorities Should Prioritise Upstream Food Waste Management

1 Landfill Capacity Crisis

Malaysia generates approximately 16,688 tonnes of food waste⁹ daily, with food waste accounting for 44% of all municipal waste. At the current rate, 21 landfills¹⁰ managed by SWCorp are projected to reach full capacity between 2025 and 2041. Original projections of landfills lasting until 2050 have been revised to 2041—**9 years earlier than expected**.

The Sarimukti Regional Landfill in West Java, Indonesia, reached near-maximum capacity by¹¹ the end of 2023 due to insufficient measures for reducing organic waste. This serves as a warning for Malaysian landfills if no action is taken.

2 Financial Burden on Local Authorities

The financial burden of managing food waste is becoming unsustainable. According to SWCorp and the Ministry of Housing and Local Government (KPKT), the country spends RM2 billion annually on solid waste management. In Kuala Lumpur alone, waste management costs have reached RM220 million, and up to 60% of local authority budgets¹² are consumed by waste collection and disposal^a. Many local councils

a. In 2013, The Edge Malaysia reported that Selangor spends RM343.77 million annually to collect and dispose domestic waste in 12 local authorities.

already struggle with debt, with SWCorp^b facing over RM200 million¹³ in unpaid debts from local authorities.

These costs are largely covered through assessment tax paid to local authorities. As waste volumes increase, local authorities face increasing operational costs. These financial strains may force local councils to raise assessment taxes or impose service charges.

3 Climate Emergency

Waste is one of the sources of methane emissions, accounting for 31% (453 kt) of Malaysia's total 1,484 kt methane emissions¹⁴. This makes waste the second-largest methane emitter after the energy sector (55%), surpassing the agriculture sector (13%).

Methane has a global warming potential 80 times more potent than CO₂¹⁵ over a 20-year period. Composting in Malaysia directly supports the Global Methane Pledge by **preventing** landfill methane, while the resulting compost **sequesters** carbon—approximately 16.6 tonnes per hectare¹⁶ for every 1% rise in soil organic matter (SOM).

According to YPBB and GAIA study in Bandung¹⁷:

GHG emissions from landfills could reach **2,567,476 tonnes CO₂eq by 2030** without intervention

Banning organic waste from landfills can reduce GHG emissions by 22% (575,428 tonnes CO₂eq), nearly equivalent to the ambitious 29% reduction target in West Java's Regional Low Carbon Development Plan

Waste management prioritising composting over landfilling reduces carbon emissions by 90% compared to business-as-usual scenarios

Soil scientists report that the ability of soil to hold an estimated **145,530 litres of water**¹⁸ **per acre** for every 1% increase in organic matter is a core principle of **soil regeneration to address food insecurity**, which simultaneously contributes to **flood mitigation** by slowing and absorbing surface runoff.



b. SWCorp is the federal agency responsible for regulating and implementing solid waste management under Act 672. Local authorities in these states are required to pay SWCorp for services provided by concessionaires.



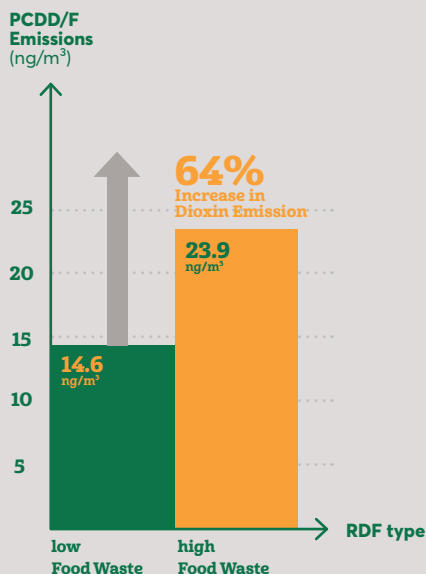
Waste-to-Energy (WTE) Limitations & Dioxin Risk

Many local authorities are considering WTE incineration as a solution. However, food waste undermines WTE efficiency and creates serious health risks. Food waste contains 60-80% moisture¹⁹. High moisture content requires significantly more energy for combustion. This leads to incomplete burning and reduced energy recovery efficiency.

Incomplete combustion at lower temperatures creates ideal conditions for **dioxin formation**. **Dioxins are Group 1 Carcinogens** (WHO classification²⁰): highly toxic compounds causing cancer, reproductive problems, immune system damage, and hormonal disruption.

PCDD/F (dioxins) Emissions from Refuse-derived fuel (RDF) by Food Waste Content

based on Research²¹



A study²² in China demonstrated that an **86.8% reduction in dioxin emissions by 2050** could be achieved through maximum air pollution control upgrades **combined with food waste diversion**. Singapore²³ specifically promotes waste separation before WTE incineration to improve efficiency and reduce emissions.

a. RDF is fuel that is produced from combustible components that the industry calls Municipal Solid Waste – MSW for short

Composting offers a practical solution: it diverts food waste from landfills, reduces greenhouse gas emissions, and produces nutrient-rich compost that can be used in agriculture and landscaping.



04 Community-Led Solutions: Unlocking the Potential of Local Initiatives

Across Malaysia, community-led initiatives from urban gardens to neighbourhood composting collectives have demonstrated that food waste can be managed effectively at the source. For this policy brief, we consulted **13 community organisations** from June to August 2025, including:



to understand the challenges and opportunities of grassroots organic waste management. 13 community organisations highlighted key challenges in managing organic waste management include restricted land access, unclear or slow permitting processes, operational constraints such as limited funding and manpower, and a circularity gap where compost outputs often have no practical outlet.

They also highlighted the lack of public participation due to inconsistent awareness, limited education, and a perception that composting yields little immediate benefit.

Communities are ready, but face structural barriers.
We summarised solutions put forward by 13 community organisations that recommend the following priority actions:

1 Bureaucratic and Policy Barriers

Challenges

Permitting processes are often unclear or slow, and existing regulations rarely accommodate small-scale or community composting models.

Solutions

- Streamline permitting processes and formally recognise community composting as part of municipal waste strategies.
- **Prioritise enforcement of waste segregation at source**, which is critical for composting and any downstream initiatives like WTE.

2 Land Access and Spatial Governance

Challenges

Urban land is scarce and often regulated. Hurdles in securing public or private land for composting ground.

Solutions

- **Allocate urban and peri-urban land** for community composting, edible gardens, and urban agriculture.
- Work with developers to **reserve land for composting in residential and new housing areas**.
- **Repurpose underutilised land**, such as areas under highways or electric lines, for community-managed gardens and composting sites.

3 Public Perception and Participation

Challenges

Stigma, misinformation, and low awareness.

Participation often fades without sustained education and engagement.

Solutions

- **Integrate environmental education in schools and community programmes**, including parental involvement.
- **Shift metrics of success** from short-term monetary gain to nutrition, soil health, and long-term sustainability.
- **Implement public campaigns** and school partnerships to sustain engagement and build awareness.

4 Operational Constraints and Resource Gaps

Challenges

Inconsistent funding, limited access to equipment, and a shortage of trained personnel. Without reliable support, these efforts risk burnout or collapse, despite strong local interest among the communities consulted.

Solutions

- **Provide incentives** such as subsidised composting bins (including composting approach without purchasing a composting machine), Pay-As-You-Throw (PAYT) waste bags, or other support mechanisms.
- **Support community-led operations** with funding, training, and technical guidance.
- **Encourage decentralised waste management** by empowering community groups to manage engagement programmes and sustain facilities.

5 Circularity Gap

Challenges

- Communities produce compost but lack outlets for its use.
- Compost product is not reintegrated into the food system or used in landscaping, agriculture, or parks.

Solutions

- **Ensure compost outputs are reintegrated** into the local food system, landscaping, municipal greenery projects, and community gardens.
- **Partner with farms, schools, and institutions** to create sustainable outlets for compost use.
- **Promote home and community-scale composting solutions** such as composting towers or Biopore systems, especially where land access is available.

Everyone agrees that each residential area should have a community garden with composting facilities

Image Source: Kebun Komuniti Hartamas



05 Lessons from Bandung, Indonesia, Taiwan and Singapore

In addition to the efforts of local communities in Malaysia, we also briefly highlight 3 countries (Indonesia, Singapore and Taiwan) with **different models of organic waste management** that we found interesting for further study and potential adaptation in Malaysia.

It is important to note that while some of these countries may still be grappling with organic waste challenges, we believe Bandung, Indonesia, offers a strong starting point for implementing effective organic waste management. Similarly, although the Singaporean model may not be a complete success story, certain initiatives by the Singaporean government are noteworthy and provide valuable lessons for local authorities.

1. Bandung, Indonesia:

Institutionalising Community Composting

Bandung's model is particularly relevant to Malaysia because it emerged from similar conditions with limited landfill space, high organic waste generation, and strong community activism. The city government, through collaboration with the local NGO YPBB, restructured its waste management strategy by placing organic waste reduction at the centre of local policy. YPBB supported communities to establish decentralised composting sites while the municipal government integrated these into the city's waste collection system. Importantly, **composting is recognised in Bandung's regional regulations (Peraturan Daerah) as a municipal waste management method**, supported by land allocation and incentives for neighbourhood-scale operations.

Lesson for Malaysia:

Policy support + community partnerships + legal recognition = scalable success. Shows that even cities with limited resources can achieve a significant impact when composting is institutionalised.

2. Singapore:

Policy-Enabled Pilots and Circular Economy Integration

Singapore adopts a hybrid model where national policy sets direction, while community and private initiatives pilot solutions. [The Zero Waste Masterplan](#)²⁴, Food Waste Minimization Guidebook and [Food Waste Segregation and Treatment Guidebook](#)²⁵ provides regulatory and guidance for food waste management in Singapore which **mandates food waste segregation for large commercial premises** and encourages best practices across food retail, manufacturing and hospitality sectors. These policies are also complemented by the government grants for on-site treatment systems and composting such as digesters and composters.

Singapore's multi-sectoral collaboration works with non-profit organisations, social enterprises, and community groups to pilot innovative solutions such as small-scale composting, food redistribution networks, and closed-loop systems. Grassroots organisations such as Food Citizen and Project Black Gold play an important role in bridging policy and lived experience. They engage residents, facilitate hands-on experimentation with composting, and model circular practices in dense urban environments.

Lesson for Malaysia:

Top-down regulation + bottom-up innovation works. Balance technology solutions with natural, accessible composting methods. Link food waste separation laws to waste management strategies while providing low-cost alternatives for small businesses.

3. Taiwan:

Strong Regulatory Backbone and Citizen Accountability

Taiwan's success stems from a top-down policy framework that mandates waste separation and composting, coupled with public accountability. The **Waste Disposal Act** and the **4-in-1 Recycling Programme** clearly assign responsibility for organic waste recovery to both households and local governments.

In Taiwan, the government manages waste centrally with strict rules such as its **“no garbage on the ground” policy**, which requires residents to bring segregated waste directly to collection trucks. Only Taipei (and parts of New Taipei) have implemented a **‘polluter pays’ principle** requiring special bin liners for general waste, while some other municipalities determine waste management fees via the household's average water consumption.

To encourage composting as a way to manage organic waste, the government also offers incentives to farmers to use compost instead of chemical fertiliser, and to community initiatives that provide upcycled wood compost bins to households.

Taiwan relies heavily on WTE due to limited land, making it **essential to remove organic waste before burning** to prevent dioxin emissions.

Lesson for Malaysia:

Strong enforcement works but requires infrastructure readiness and sustained public education. ‘Polluter-pays’ models reduce waste generation significantly - clear linkage between composting incentives and waste management efficiency.

06 Concrete Actions:

Policy Proposal and Recommendations

In response to the challenges identified in this brief, we propose the following policy recommendations to build on Malaysia's current waste management system. These recommendations prioritise upstream interventions, such as composting, as the primary method of managing organic waste

IMMEDIATE ACTIONS: Quick Wins

1 Mandate Landscape Waste Composting

Actions

Direct all municipal parks and road maintenance landscape waste to composting facilities such as community gardens, instead of landfills

The WHY

Zero household behaviour change needed; immediate waste diversion

Cost

Minimal—leverage available spaces at public parks

2 Include Composting in Municipal Procurement

Actions

Require municipal contractors to use compost in all landscaping projects

The WHY

Creates immediate demand for compost, closing the circular loop

The Potential

Market development for community-produced compost

3 Launch School/ Residential Area Composting Programme

Actions

Partner with 5 areas/ schools per district for composting education and implementation

The WHY

Educational impact + measurable waste diversion + behaviour change in families

The Potential

10 school canteens produce 162.8kg of waste per day²⁶; long-term cultural shift

MEDIUM-TERM STRATEGIES

1 Incentivise Household and Business Composting

Actions

Provide tax deductions or cash rebates for composting adoption in businesses and households

Model

Similar to [Assessment Tax Rebate For Eco-friendly House Owners](#)²⁷

The Potential

Households and businesses demonstrating regular composting

2 Drive Top-Down Compost Demand

Actions

Introduce incentives for agribusinesses, plantations, farmers, and nurseries to switch from chemical fertilisers to compost

The WHY

Creates a sustainable market and demand for compost; supports agricultural sustainability

Mechanism

Tax incentives, subsidised compost, technical support

Expected impact

Reduced fertiliser imports, improved soil health, and market stability for compost producers

3 Enforce Waste Segregation at Source

Actions

Implement mandatory 3-bin system (organic, recyclable, residual) for all households and businesses

The WHY

Essential for composting

Support

We already have existing regulation in place, enforcement is the next step

Enforcement

Graduated penalties with an education-first approach



LONG-TERM STRATEGIES

1 Create Land-Use Guidelines

Actions

Require all new residential and commercial developments to allocate space for composting

The WHY

Embeds waste recovery infrastructure from the start

Implement

Through updated local planning regulations

2 Decentralised Waste Management System

Actions

Outsource organic waste collection and composting to communities and social enterprises with government subsidies

The WHY

Reduces municipal burden, creates jobs, builds local ownership

Model responsibility redistribution:

- a. **Individuals/Households:**
Segregate waste, compost at home
- b. **Communities/Social Enterprises:**
Collect segregated waste, operate composting facilities
- c. **Local Councils:**
Collect remaining waste, manage recyclables, and actively keep track of non-recyclables and create action plans to reduce

3 Ban Organic Waste Sent to Landfills

Actions

Phase in a complete ban on organic waste in landfills, starting with commercial generators

The WHY

Force system transformation

Prerequisites

Infrastructure and education must be in place first

Timeline

- **Year 1:** Large commercial generators (hotels, malls, food manufacturers)
- **Year 2-3:** Medium businesses and institutions
- **Year 4-5:** Complete ban including households



07 CONCLUSION:
THE TIME TO ACT IS NOW





5Rs' principle
REFUSE
REDUCE
REUSE
RECYCLE
ROT

Did you know?
Malaysians produce
38 million tonnes
of waste daily.
That's equivalent
to stacking up
7000 elephants
worth of trash.

 Zero Waste
Malaysia

kak Repair

Appendix:

Glossary of Terms

Compost	Decomposed organic matter used as soil amendment and fertiliser.
Dioxin (PCDD/F)	Highly toxic organic compounds formed during incomplete combustion, classified as Group 1 carcinogens by the World Health Organisation (WHO).
Food Waste	Edible or inedible organic material discarded at any stage from production to consumption, including food scraps, plate waste, spoiled food, and preparation waste.
GHG (Greenhouse Gas)	Gases that trap heat in the atmosphere, including CO ₂ , methane (CH ₄), and nitrous oxide (N ₂ O).
Leachate	Liquid that drains from landfills, containing dissolved and suspended material that can contaminate groundwater.
Methane (CH₄)	A potent greenhouse gas with 80x the warming potential of CO ₂ over 20 years, produced by anaerobic decomposition of organic waste.
Organic Waste	Compostable waste, including food waste, garden waste, and other plant/animal-based materials.
Landscape Waste	Organic, plant-based residues generated from the maintenance, cleaning, or clearing of gardens, parks, and landscapes.
Pay-As-You-Throw (PAYT)	Waste management system where households pay fees based on the amount of waste generated, incentivising reduction.
Refuse-Derived Fuel (RDF)	Processed waste used as fuel in WTE facilities.
Soil Organic Matter (SOM)	Organic component of soil consisting of decomposed plant and animal materials, crucial for soil health.
Source Separation	Segregating waste into different categories (organic, recyclable, residual) at point of generation.
Waste-to-Energy (WTE)	Incineration of waste to generate electricity or heat.

References

- 1 <https://www.bernama.com/en/news.php?id=2402668>
- 2 <https://www.thestar.com.my/news/nation/2025/07/31/landfills-to-hit-full-capacity-by-2041>
- 3 <https://www.freemalaysiatoday.com/category/nation/2025/08/21/ministry-exploring-set-up-of-single-agency-for-waste-management>
- 4 <https://unfccc.int/sites/default/files/resource/MALAYSIA%27S%20FIRST%20BIENNIAL%20TRANSPARENCY%20REPORT.pdf>
- 5 <https://www.sciencedirect.com/science/article/abs/pii/S0016236114004268>
- 6 <https://www.thestar.com.my/news/nation/2025/07/31/landfills-to-hit-full-capacity-by-2041>
- 7 <https://www.freemalaysiatoday.com/category/nation/2025/08/21/ministry-exploring-set-up-of-single-agency-for-waste-management>
- 8 <https://journals.hh-publisher.com/index.php/MJAE/article/download/327/188#:~:text=According%20to%20the%20National%20Solid.Poverty%20Pollution%20Persecution%2C%202019>
- 9 <https://www.bernama.com/en/news.php?id=2402668>
- 10 <https://www.thestar.com.my/news/nation/2025/07/31/landfills-to-hit-full-capacity-by-2041>
- 11 <https://ypbb.web.id/resources/pelarangan-sampah-organik-ke-tpa-sebagai-solusi-krisis-pengelolaan-sampah-regional-sekaligus-langkah-mitigasi-perubahan-iklim/>
- 12 <https://files.core.ac.uk/download/162013640.pdf>
- 13 <https://www.malaymail.com/news/malaysia/2025/10/02/minister-warns-local-authorities-over-rm200m-swcorp-debt-says-could-cripple-malaysias-trash-collection-services/193129>
- 14 <https://www.iea.org/data-and-statistics/data-tools/methane-tracker>
- 15 <https://www.ccacoalition.org/short-lived-climate-pollutants/methane>
- 16 <https://www.nrdc.org/bio/darby-hoover/compost-climate-solution>
- 17 <https://ypbb.web.id/resources/pelarangan-sampah-organik-ke-tpa-sebagai-solusi-krisis-pengelolaan-sampah-regional-sekaligus-langkah-mitigasi-perubahan-iklim/>
- 18 https://www.canr.msu.edu/news/compost_increases_the_water_holding_capacity_of_droughty_soils
- 19 https://www.researchgate.net/publication/360665408_Food_waste_type_and_moisture_content_influence_on_the_Hermetia_illucens_L_Diptera_Stratiomyidae_Larval_Development_and_Survival
- 20 <https://www.who.int/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health>
- 21 <https://www.sciencedirect.com/science/article/abs/pii/S0016236114004268>
- 22 <https://www.sciencedirect.com/science/article/abs/pii/S0304389422008652>
- 23 <https://www.sciencedirect.com/science/article/abs/pii/S1364032118306580#:~:text=solutions%20are%20proposed-.Abstract.on%20top%20of%20energy%20production>
- 24 <https://isomer-user-content.bygov.sg/23/85029cae-9ba1-4144-8a52-26c7f86c04ba/zero-waste-masterplan.pdf>
- 25 <https://www.nea.gov.sg/our-services/waste-management/3r-programmes-and-resources/food-waste-management/food-waste-management-strategies>
- 26 <https://www.planningmalaysia.org/index.php/pmj/article/view/717>
- 27 <https://www.seda.gov.my/government-introduced-solar-for-rakyat-incentive-scheme-solaris-and-offers-additional-quota-for-nem-rakyat/>

