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TO REDUCE SHORT-LIVED
CLIMATE POLLUTANTS

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Recommendations on Policy and Legislation to End Open Burning of Waste in Iraq

Rzgar Bewani

Date: Thursday, 18th December 2025

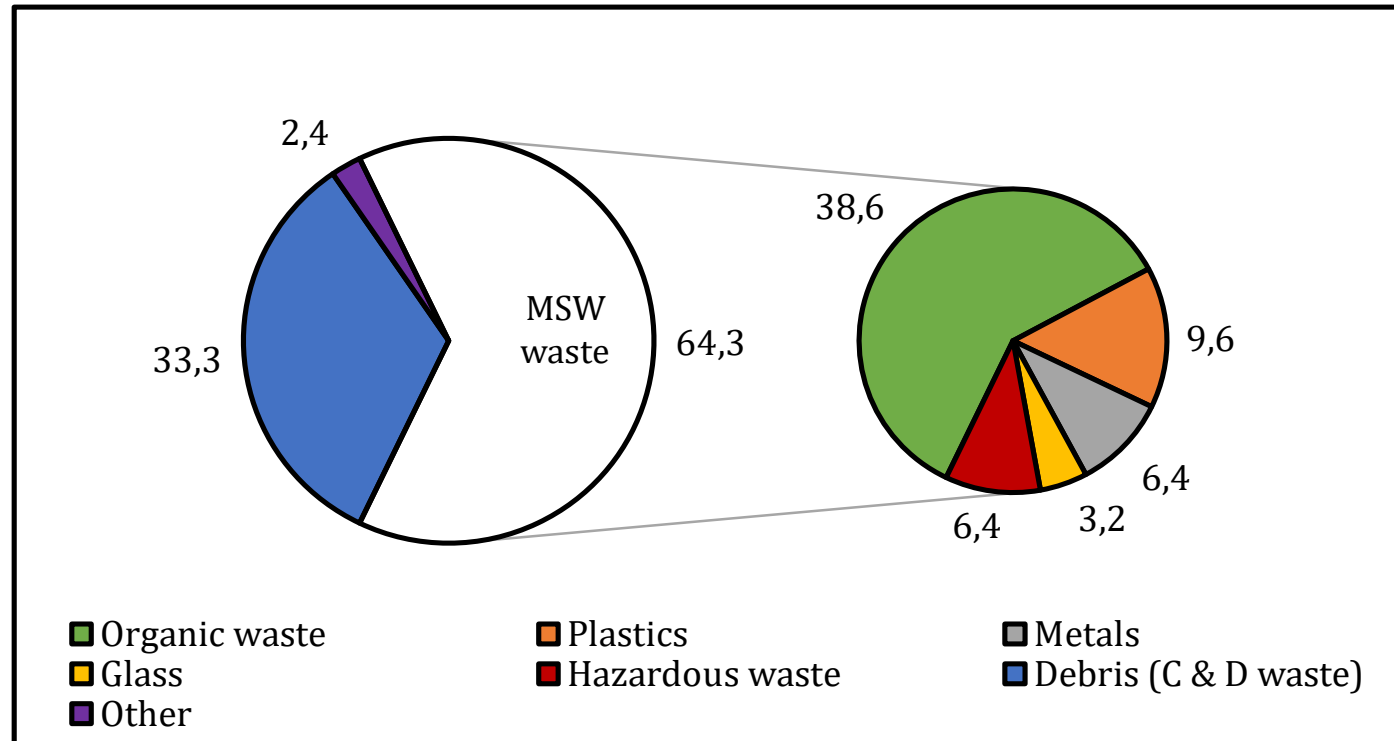
Format: Online

Time: 10:40 – 11:10

Overview of types and composition of MSW generated in Iraq



- Total amount of waste to landfill: 17,3 – 19,7 million tons per year
- Regular waste (including municipal solid waste) makes up 64% of the total waste in Iraq (>11 million tons/year).
- Construction and demolition waste from construction material (production, end-of-life) accounts for 33% (approx. 6 million tons/year)
- Source separation of MSW (organic, recyclables) at the source is not practised.

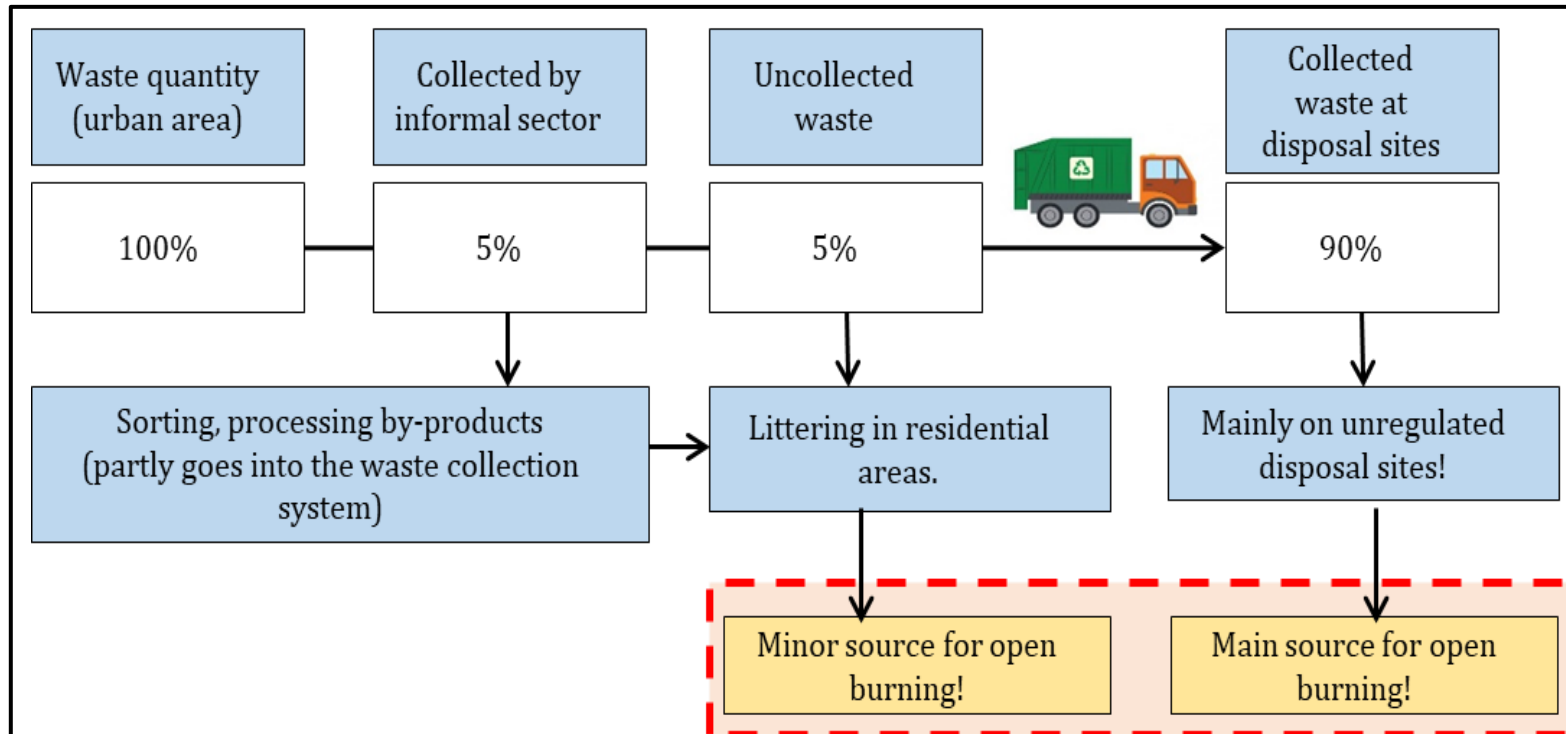


Source 1: Rzgar Bewani, adopted from The Ministry of Planning, National Development Plan 2024-2028, republic of Iraq, 2024
Source 2: Rzgar Bewani, adopted from National Strategy for the Protection and Improvement of the Environment in Iraq 2024-2030, 2024.

Identification of the OWB source in the Urban Area in Iraq



- Approximately 90% of the MSW is collected in the urban areas.
- Recyclables collected by the informal sector are estimated to be 5% of the total MSW (examples: paper and cardboard, metals)
- About 5% of the MSW remains uncollected in the urban areas.



Source: Rzgar Bewani

Overview of MSW disposal in Iraq

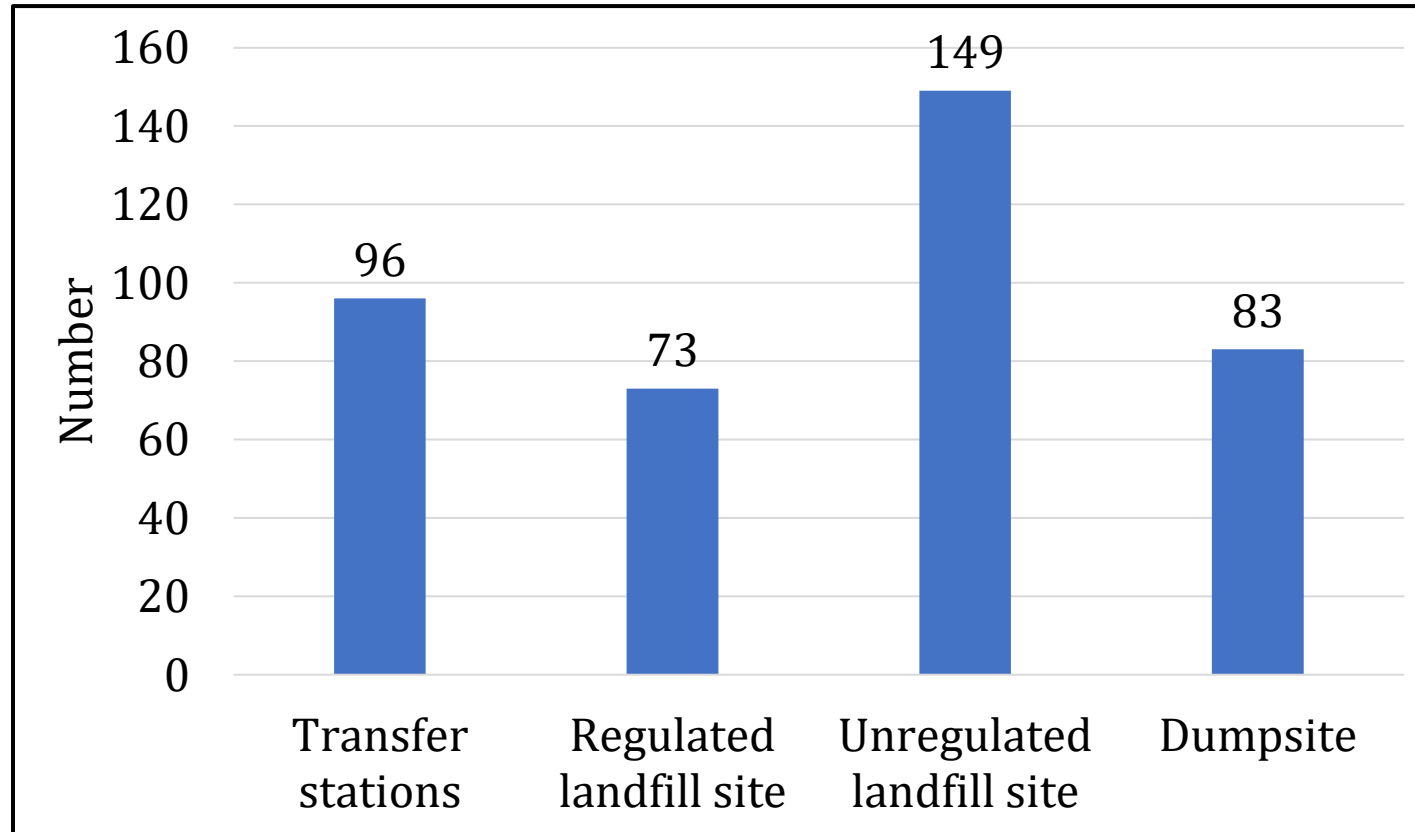


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- Landfilling and open burning are the common disposal methods in Iraq.
- No large-scale centralised recycling facilities (MRF, MBT, composting, AD, or incineration plants) exist.
- Two MBT facilities treat 450,000 – 500,000 tons of MSW annually (in the Kurdistan Region)



Source: Rzgar Bewani, based on data from CS, 2023

Asia Roadmap: Core Principles



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- Policy
- Improve governance, data, and enforcement
- Eliminate open burning by addressing root causes
- Strengthen waste collection & disposal systems
- Sustainable financing mechanism
- Promote circular economy pathways

Policy	- Lack of integrated planning due to fragmented and siloed policies for waste, air quality, and climate change - Weak political will and enforcement coupled with absent operational guideline and environmental standard limited inspections, unclear penalties, and inadequate oversight - Lack of explicit policy targeting OWB
Governance & Institution	- Fragmented responsibilities across national, provincial, and local level Decentralization without adequate financial, technical, and administrative resources in local government
Data, Monitoring & Information	- Sparse, unreliable, or incomplete data on OWB occurrence, waste composition and emissions - Limited air quality monitoring, especially for PM2.5, black carbon, and SLCPs - Weak Monitoring, reporting, and verification (MRV) systems - Few researches about OWB on air pollution and health impact hinder evidence-based planning
Infrastructure	- Insufficient waste collection and transportation - Lack of sanitary land and treatment facilities
Finance	- Lack of sustainable financing models (polluter-pays, pay-as-you-throw principles) - Limited public funding for operational and capital expenses - Limited private sector investment due to perceived financial risks, low profitability unclear regulation, and lack of scalable projects - Operating modern technologies often exceeds budget, placing a financial burden

Source: Regional Roadmap to End Open Burning of Waste in Asia, 2025

ASESSMENT AND PROPOSED POLICIES



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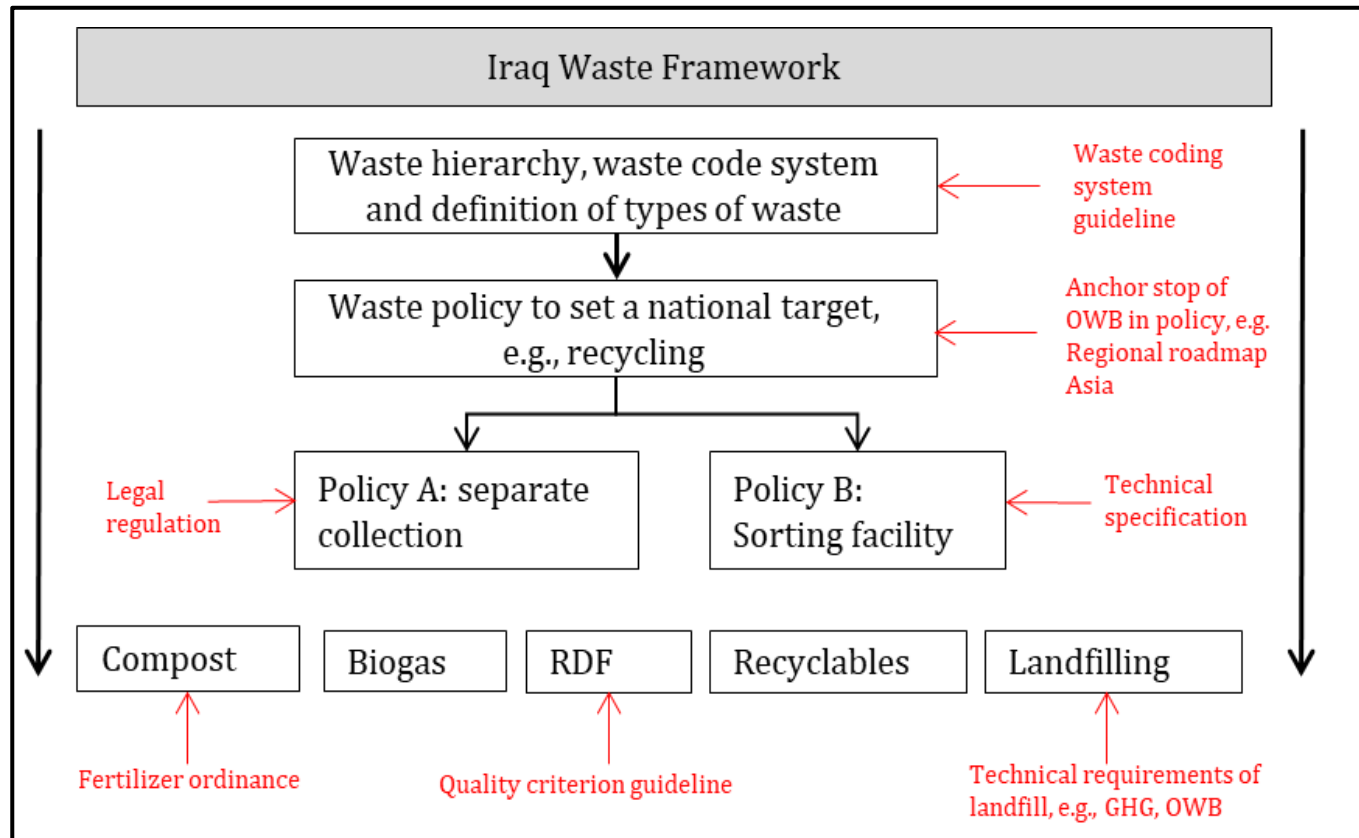


- **POLICY 1: IRAQ WASTE FRAMEWORK (IWF)**
- **POLICY 2: NATIONAL INSTITUTIONAL FRAMEWORK STRUCTURE**
- **POLICY 3: WASTE TRATMENT AND DISPOSAL**
- **POLICY 4: NATIONAL WASTE BUDGETING MECHANISM**
- **POLICY 6: NATIONAL MONITORING PROGRAM AND PUBLIC ENGAGEMENT**

Policy 1: Iraq Waste Framework (IWF)



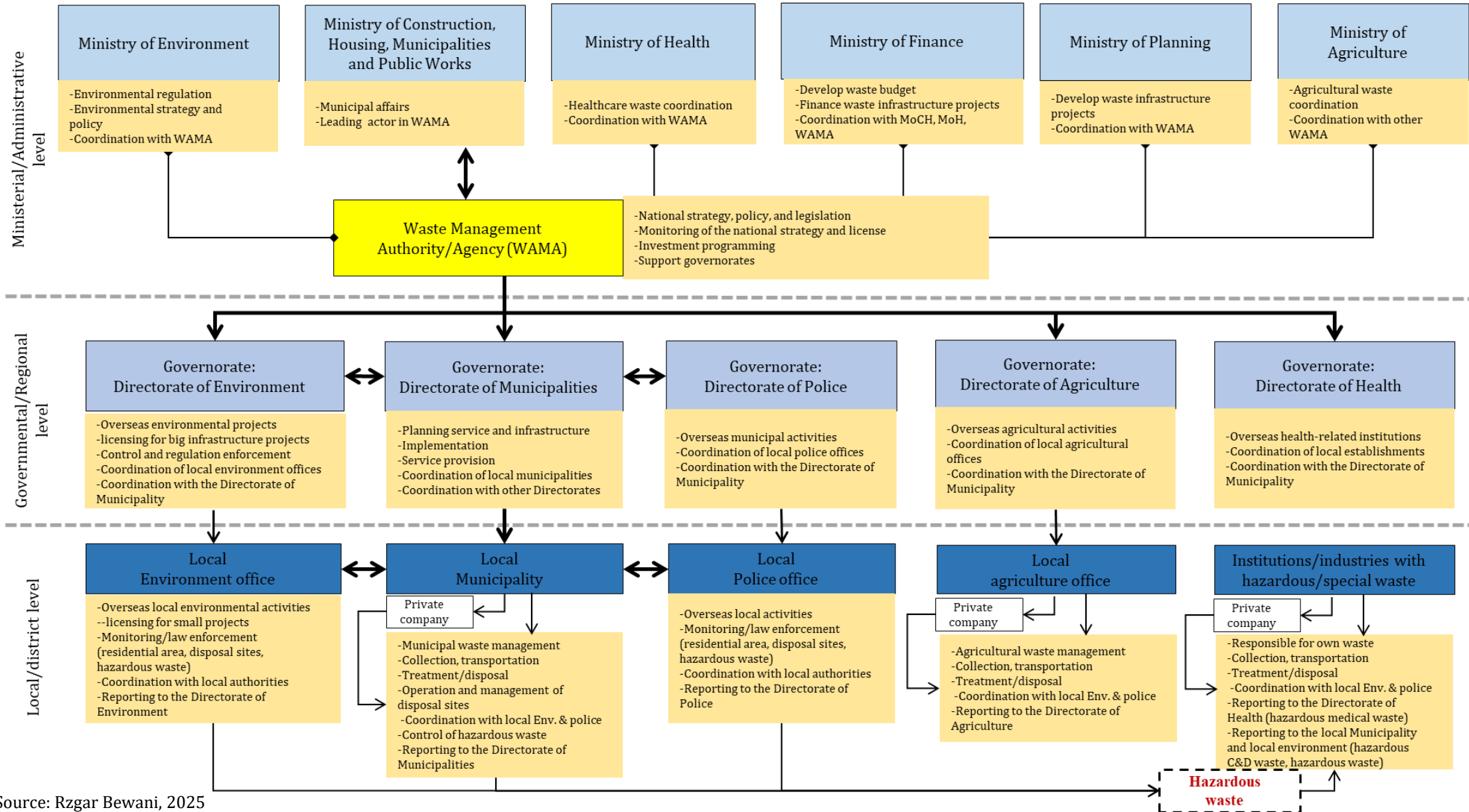
- IWF is a comprehensive system to contain all aspects of solid waste to end open waste burning.
- It is planned based on a proposed Waste Coding Catalogue (WCC) for different waste streams: MSW, medical waste, hazardous, C&D waste, E-Waste
- It oversees the demand for future regulatory frameworks (e.g., landfill technical requirements, RDF quality guideline, fertilizer ordinance etc)



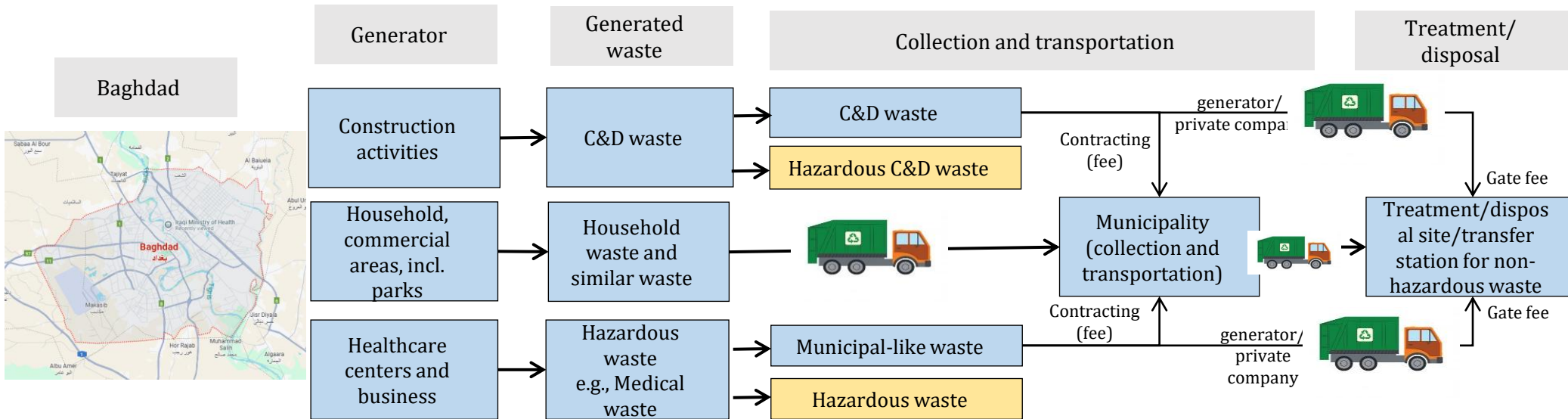
Example: waste code catalogue (WCC)

- 01 municipal solid waste
- 01 01 Waste from households
- 01 01 01 Residual household waste (from daily activities without hazardous components)
- 01 01 02 Separately collected organic waste (biowaste, green waste)
- 01 01 03 Separately collected recyclables (paper and cardboard, plastics, etc.)
- 01 01 04 Household construction and demolition waste (from households without hazardous components)
- 02 Healthcare and pharmaceutical waste
- 02 01 Non-hazardous medical waste (residual waste without hazardous components)
- 02 02 Hazardous medical waste (waste contaminated with infectious, chemical, or other hazardous substances posing a risk to public health and the environment)
- 02 03 Pharmaceutical waste (expired medicines or pharmaceutical residues contaminated with hazardous substances that pose a risk to public health and the environment)
- 03 Construction and Demolition Waste (C&D Waste)
- 03 01 Inert mineral waste free of hazardous substances
- 03 01.01 Concrete waste
- 03 01.02 Cement-based waste
- 03 01.03 Sand and soil
- 03 01.04 Brick waste
- 03 01.05 Tiles and ceramics
- 03 02 Ferrous and non-ferrous metal waste (free of hazardous components)
- 03 03 Plastic and rubber waste (including PVC)
- 03 04 Wood waste (free of hazardous substances)
- 03 05 Mixed construction and demolition waste
- 03 06 Hazardous waste (waste contaminated with infectious, chemical, or other hazardous substances posing a risk to public health and the environment)
- 04 WEEE - Waste Electrical and Electronic Equipment
- 04 01 Large household appliances (e.g. refrigerators, freezers)
- 04 02 Flat display equipment (e.g. televisions, monitors)
- 04 03 Small IT and telecommunication equipment with integrated batteries (e.g. mobile phones, tablets)

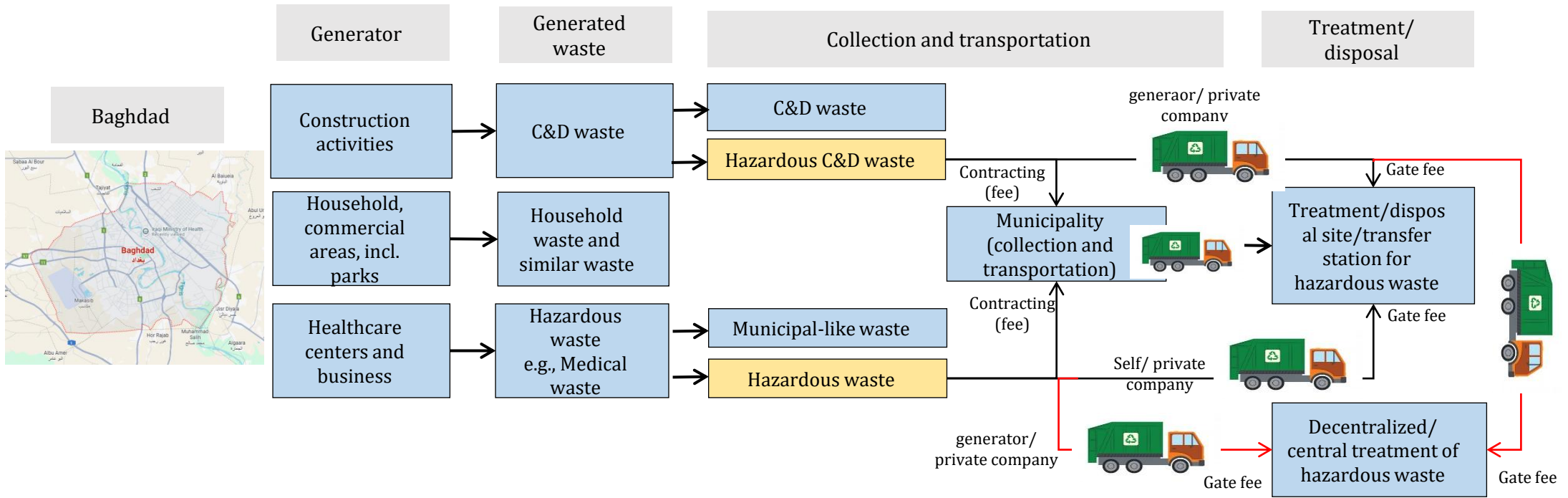
Policy 2: Institutional framework and responsibility



Policy 2: responsibility of collection and transportation of non-hazardous waste



Policy 2: responsibility of collection and transportation of hazardous waste



Policy 3: Waste treatment and disposal

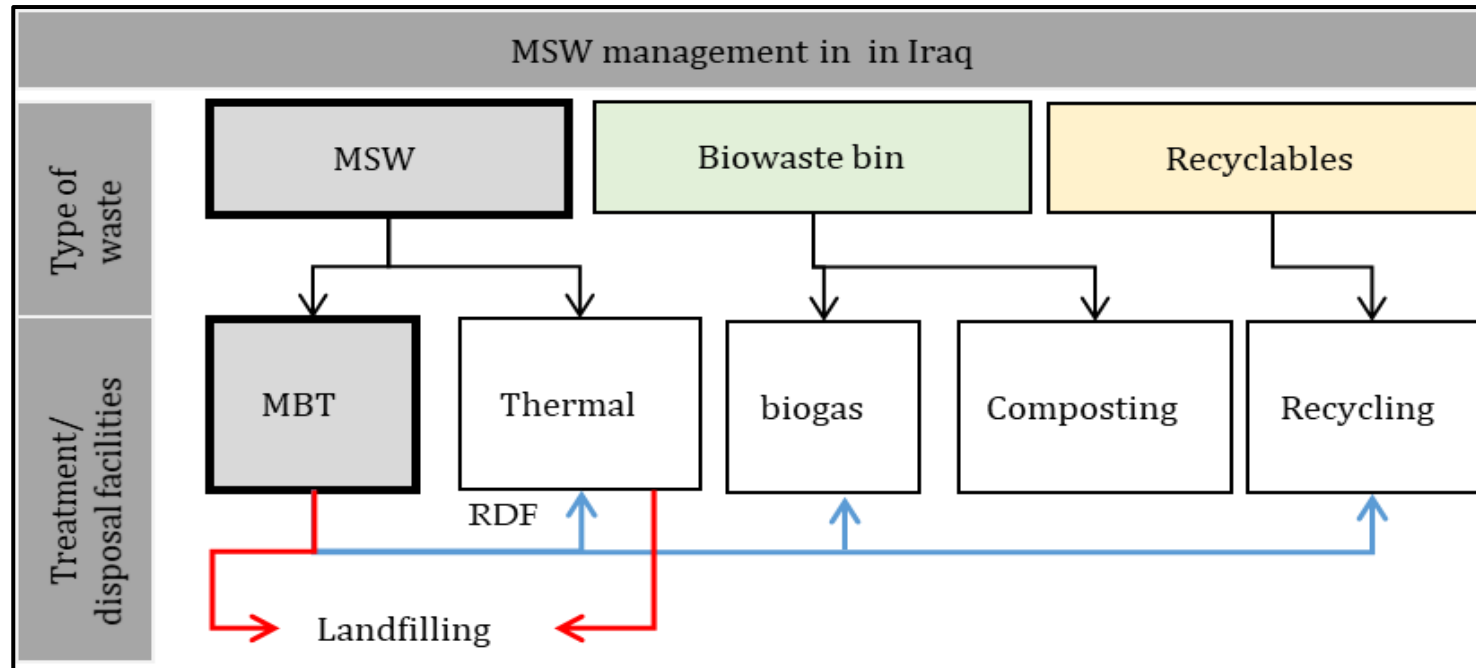


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- Introduction of a separate collection of MSW is the priority in the Asia regional roadmap and Iraq NDC 2025.
- Organic waste will be treated at a combined anaerobic digestion and composting to generate biogas and produce compost from digestate (7 million tons of organic waste = 735 million m³ biogas and 2 million tons compost).
- Recyclables (PPK, plastics, metals, etc) can be filled in local informal recycling activities, and be exported.
- Remaining residual MSW (hygiene, single-use plastic, contaminated PPK) is processed at MBT and incineration plant.

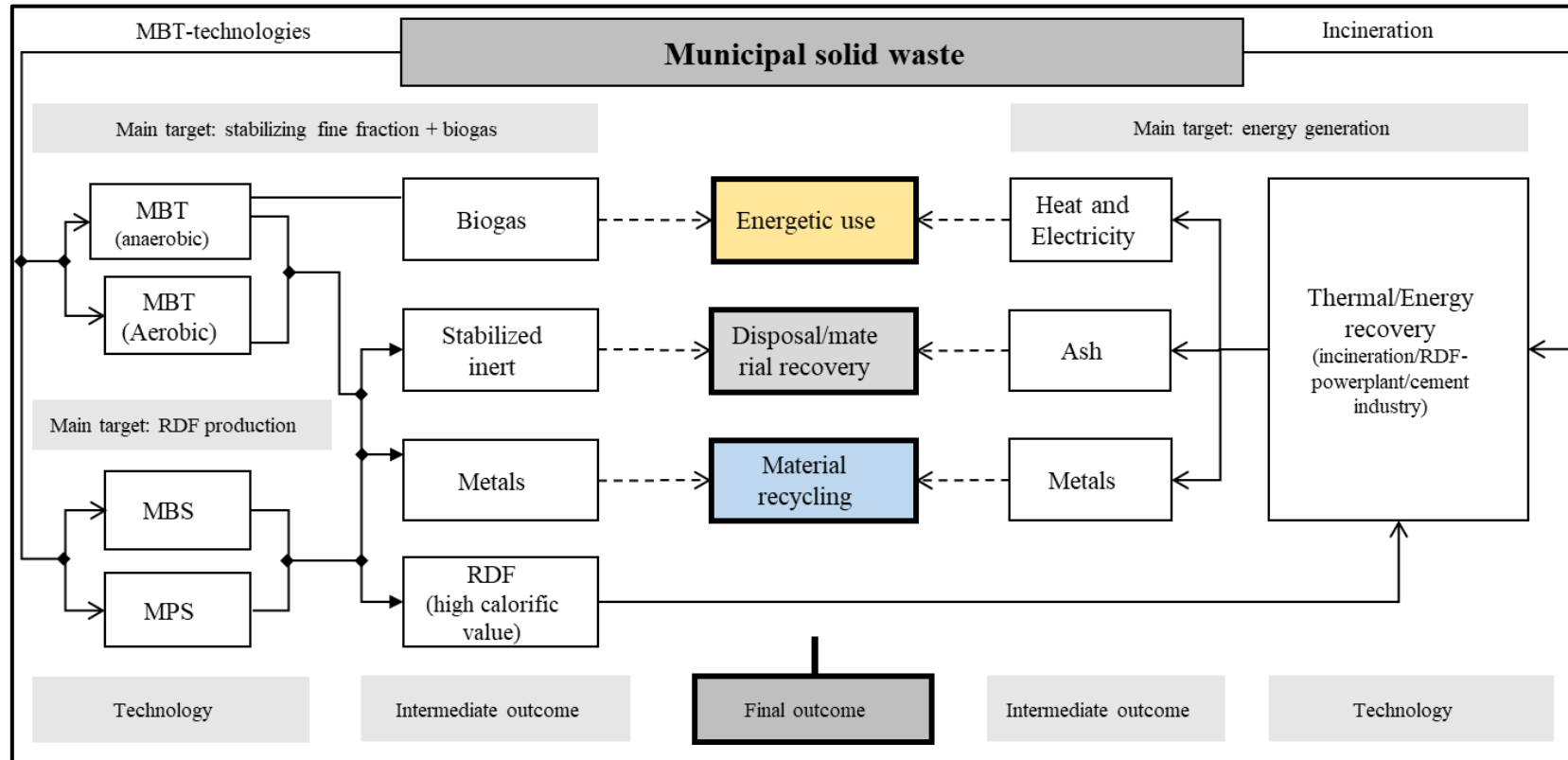


Source: Rzgar Bewani, 2025.

Policy 3: Waste treatment and disposal



- Residual MSW (hygiene, not recyclables) at MBT and incineration
- Outputs of MBT plant: energy, recyclables (if any in MSW), stabilised inert material that does not generate GHG (no OWB).
- output of incineration: energy, ash, and others that need specific disposal sites.



Source: Rzgar Bewani, PhD Dissertation, 2025.

Policy 3: Waste treatment and disposal



- Construction of sanitary landfill.

Source, photo:
Rzgar Bewani



Unregulated disposal site with

- not controlled, no fence
- open burning by the informal sector

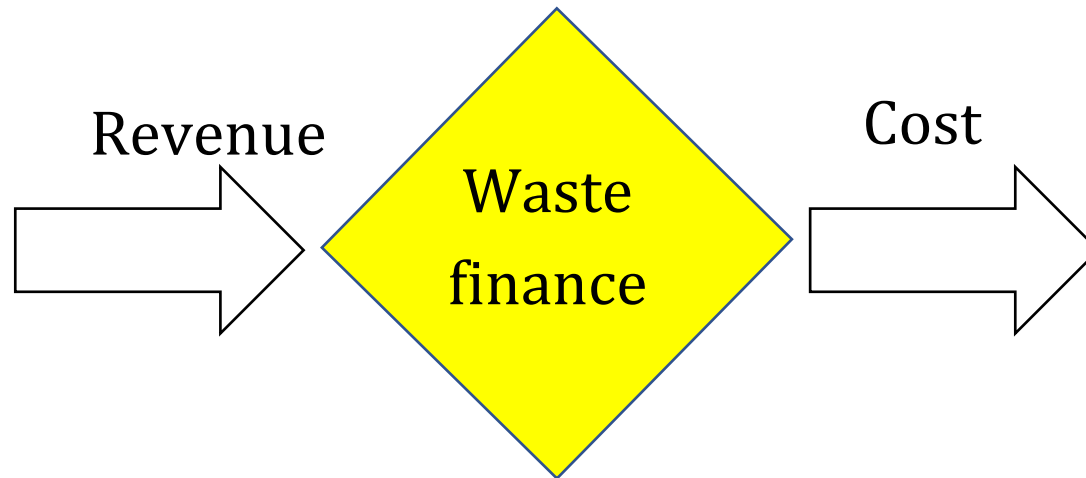


Source, photo:
Rzgar Bewani

Sanitary landfill

- controlled, fence
- registered informal waste picker

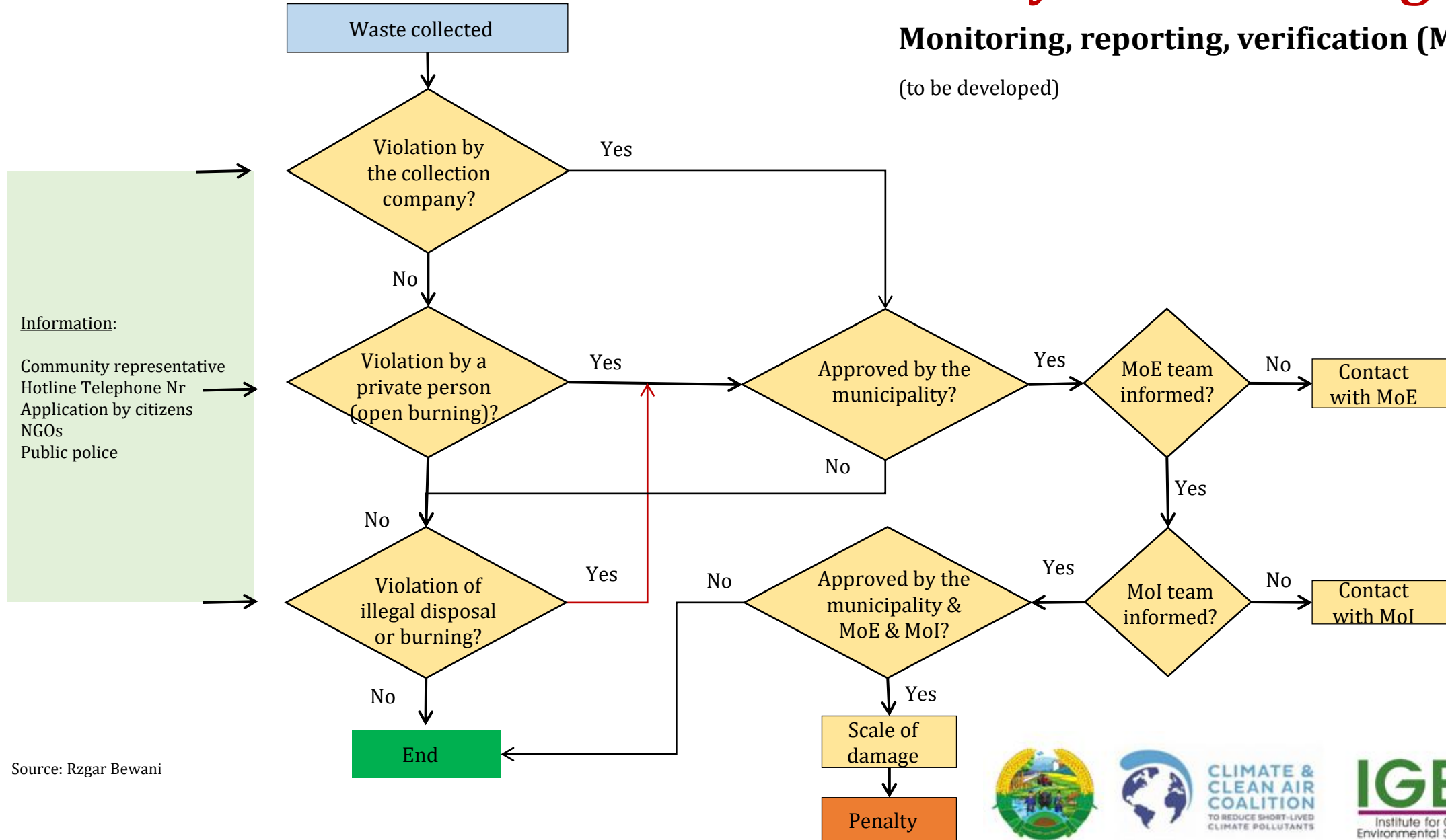
Policy 4: National Waste Budgeting Mechanism



Policy 5: Monitoring

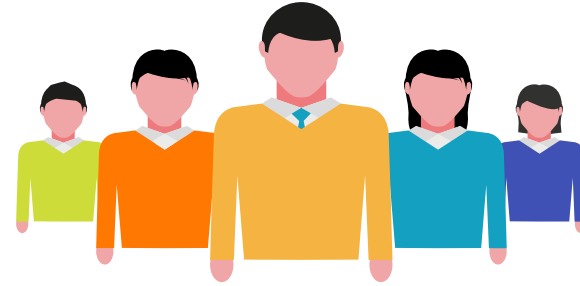
Monitoring, reporting, verification (MVR)

(to be developed)



Source: Rzgar Bewani





Thank you for your participation

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