

# SDG Indicator Review:

12.4.2 on Hazardous waste, 12.5.1 on recycling and linkages to  
11.6.1 on Municipal Solid Waste and 12.3.1 on food waste

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# Introduction – SDG 12.4.1

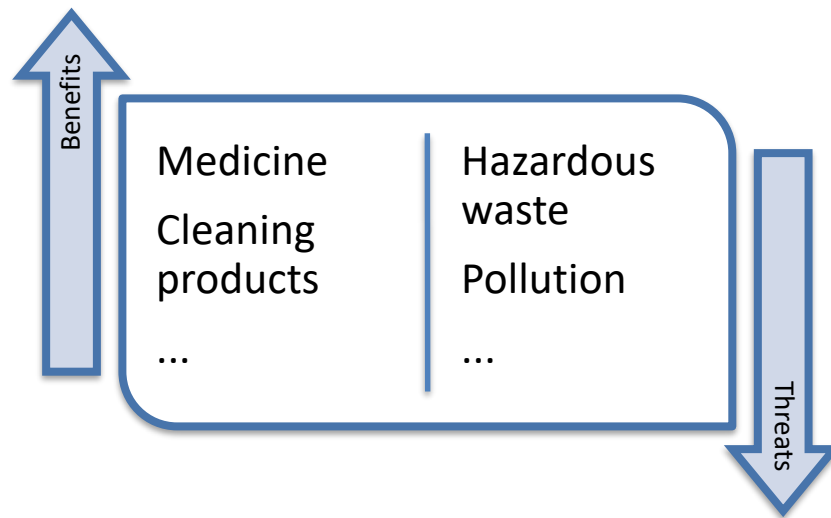
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<b>Goal 12:</b>	<b>Ensure sustainable consumption and production patterns</b>
<b>Target 12.4:</b>	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
<b>Indicator 12.4.2</b>	Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment

# Rationale

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Hazardous materials are part of everyday life and are used in all economic sectors globally, but their use has both benefits and potential adverse impacts.



- Rapid increase in generation of hazardous waste
- Multiple sources of hazardous waste (industrial, commercial, medical, households, etc.)
- Potential for contamination of air, water, soil, as well as non-hazardous waste streams. => waste separation is crucial

# Concepts and definitions - I

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**Hazardous waste** - waste with properties that make it hazardous or capable of having a harmful effect on human health or the environment, as per Basel Convention.

**Hazardous waste generated** - quantity of hazardous waste that is generated within the country during the reported year, prior to any activity such as collection, preparation for reuse, treatment, recovery, including recycling, or export, no matter the destination of this waste.

**Environmentally sound treatment of hazardous waste** – Waste treated according to technical guidelines adopted by the Conference of Parties to the Basel Convention, or according to nationally defined standards.

# Concepts and definitions - II

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**Treatment of hazardous waste** – ‘Disposal’ (D1-D15) and ‘Recovery’ (R1-R13) operations included in Annex IV of the Basel Convention.

**Recycling** - Any reprocessing of waste material that diverts it from the waste stream, except reuse as fuel. Reprocessing is included. Recycling within industrial plants i.e. at the place of generation should be excluded.

**Incineration** - the controlled combustion of waste, with or without energy recovery.

**Landfilling** - final placement of waste into or onto the land in a controlled or uncontrolled way.

Controlled landfill - waste disposal site that is authorized and operates under applicable national or international legal requirements

# Data Sources – data reporting flow pyramid

Data reporting

UN/BRS Focal Point

Data verification,  
aggregation

Line Ministries

National Statistics

Data providers

Municipal Waste  
Management Dept.

Chamber of  
Commerce/ Customs  
office

City Sanitation  
Departments

Waste Collection,  
Waste Treatment  
Facility Managers

Industrial  
Waste  
Producers

Private Waste  
Management  
Companies

Waste Water  
Treatment  
Facilities

Environmental  
Enforcement  
Officers

# Proposed sub-indicator levels

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## Indicator 12.4.2 – Hazardous Waste

**Level 1** –modelling of data gaps, based on national official statistics

**Level 2** - reporting of national data and meaningful sub-indicators, such as:

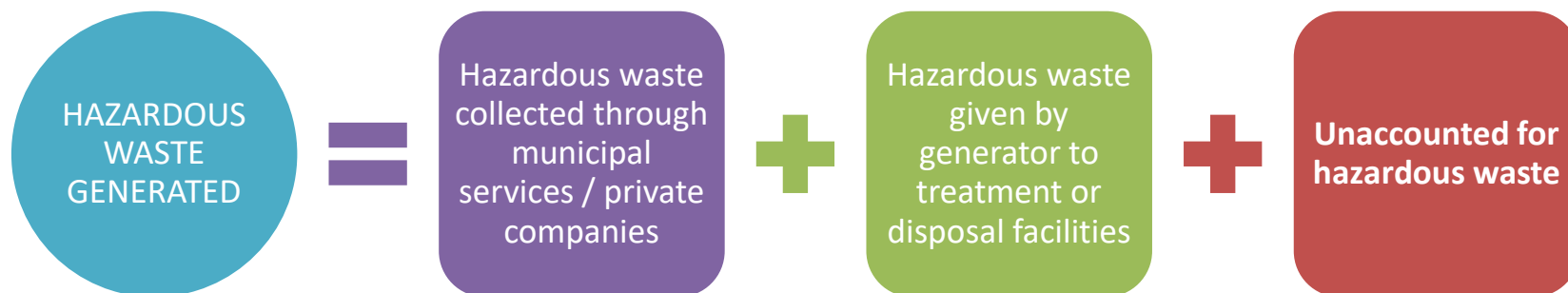
- A. Country capacity for sound treatment of own hazardous waste within the country.*
- B. Country capacity for treatment of hazardous waste from other countries*
- C. Hazardous waste exported in order to be soundly treated*
- D. Hazardous waste intensity of production*

## 12.4.2 Hazardous Waste sub-indicators

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*Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment.*

Level 1 –



**N.B.1** The above includes exports and excludes imports

**N.B.2** In absence of country-specific data, generic rates of hazardous waste generation are suggested as gap-fillers – mostly obtained from EU countries

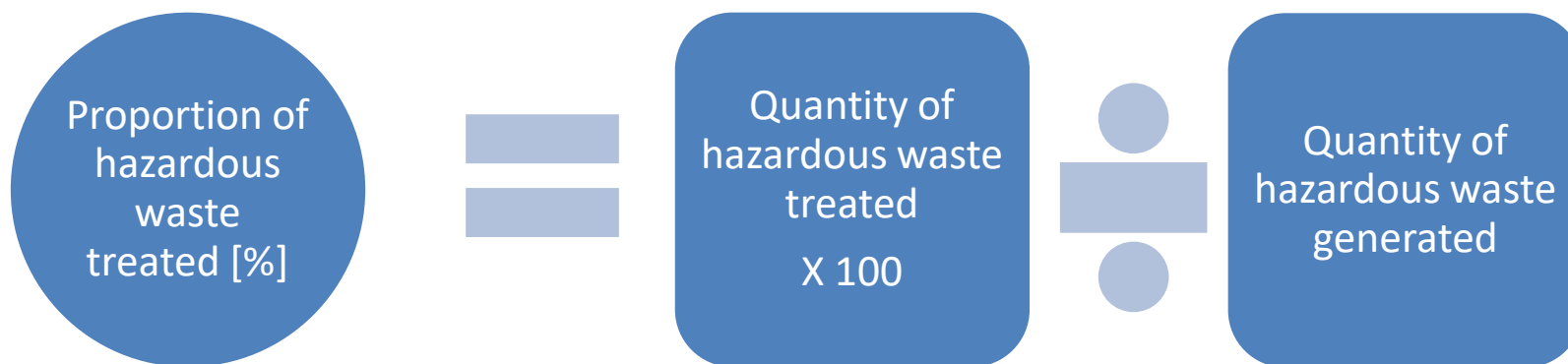


## 12.4.2 Hazardous Waste sub-indicators

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*Hazardous waste generated per capita and **proportion of hazardous waste treated, by type of treatment.***

Level 1 –



N.B. 1 Excluding exports  
but including imports

N.B. 2 All quantities for the  
reference reporting year

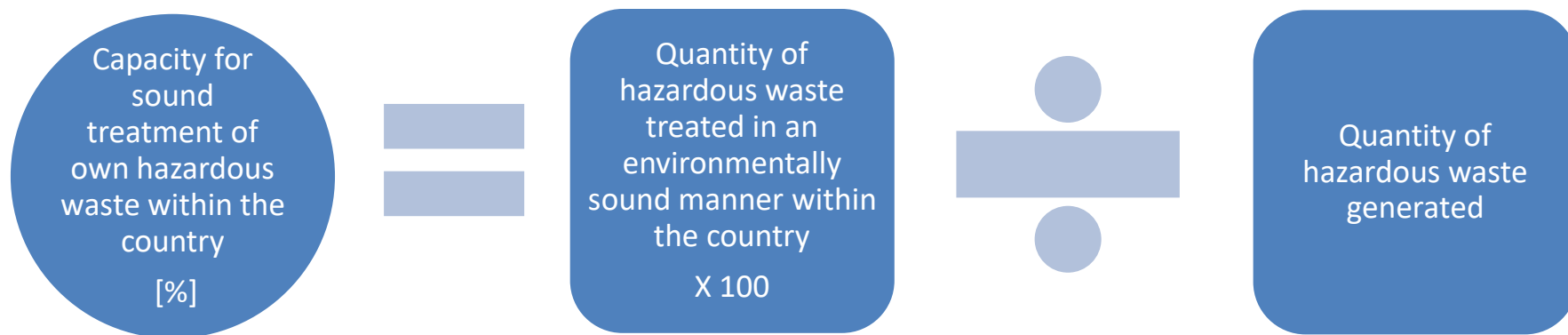
## 12.4.2 Hazardous Waste sub-indicators

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**Level 2** – reporting of national data and meaningful sub-indicators, such as:

**A) Country capacity for sound treatment of own hazardous waste within the country**

*Purpose: to acknowledge countries who treat hazardous waste within their country*



*( expressed as a % for the reference year )*

**N.B.** Excluding exports,  
excluding imports

## 12.4.2 Hazardous Waste sub-indicators

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*Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment.*

**Level 2** – reporting of national data and meaningful sub-indicators, such as:

**B) Country capacity for treatment of hazardous waste from other countries**

*Purpose: to acknowledge countries which have developed their capacity to import and treat hazardous waste from other countries*

**C) Hazardous waste exported in order to be soundly treated**

*Purpose: to acknowledge countries which have taken the initiative to export their hazardous waste for sound treatment, rather than dispose of it inadequately*

# Disaggregation

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Indicators could be further disaggregated depending on the country's policy information needs:

- By generating sector / by ISIC codes;
- By type of landfilling: controlled vs. uncontrolled, specialized hazardous waste landfills, etc.
- By type of treatment per each generating sector;
- By type of recycling operation;
- By territorial division;
- Etc.

# Data sources and collection process

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## Data sources:

- Hazardous waste generators;
- Hazardous waste collectors/operators;
- Hazardous waste treatment facilities;
- Environmental protection authorities;
- Basel Convention focal points;
- Statistics office.

## Data collection process:

- Official reports at national/entity/generator level;
  - Questionnaires
  - Sample studies extrapolated at sector/national level.
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# Introduction – 12.5.1 on recycling

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<b>Goal 12:</b>	<b>Ensure sustainable consumption and production patterns</b>
<b>Target 12.5:</b>	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
<b>Indicator 12.5.1</b>	National recycling rate, tons of material recycled

# Rationale

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Moving towards lower waste generation through minimization, prevention, reduction, reuse, repair and recycling, in both production and consumption, are primary goals today as we face an overexploitation and depletion of the world's resources and increasing pressure from waste generation on the environment.

Aspects to take into account:

- The recycling value chain
- Changes in quantity and quality along the recycling chain
- Informal activities
- The influence of market prices

# Principles applied when defining the indicator

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- Define a metadata that will ensure as much as possible the monitoring of the goal and target
- Linking to other SDG indicators to enhance the policy information and reduce the reporting burden
- Do not leave anyone behind while also making it possible for countries to improve their reporting



# Concepts and definitions - I

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**Recycling** - Any reprocessing of waste material that diverts it from the waste stream, except reuse as fuel. Reprocessing is included. Recycling within industrial plants i.e. at the place of generation should be excluded.  
– includes composting, excludes non-metallic minerals

**Composting** - biological process that submits biodegradable waste to anaerobic or aerobic decomposition, and that results in a product that is recovered and can be used to increase soil fertility

**Material Flow Accounting (MFA)** – monitoring system for national economies based on methodically organised accounts and denoting the total amounts of materials used in the economy.

# Concepts and definitions - II

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**Extended Producer Responsibility (EPR)**- an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle.

**Domestic Material Consumption (DMC)** - a standard MFA indicator and reports the apparent consumption of materials in a national economy.

**Material Footprint (MF)** – the attribution of global material extraction to domestic final demand of a country. The total MF is the sum of the material footprint for biomass, fossil fuels, metal ores and non-metal ores.

**Total waste generated** - the total amount of waste (both hazardous and non-hazardous) generated in the country during the year

# Concepts and definitions - III

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**Municipal Solid Waste (MSW)** - waste originating from households, commerce and trade, small businesses, office buildings and institutions. It also includes bulky waste and waste from selected municipal services, however excludes waste from municipal sewage network and treatment, municipal construction and demolition waste.

**Non-metallic minerals** – includes industrial minerals and construction minerals.

**Hazardous waste** - waste with properties that make it hazardous or capable of having a harmful effect on human health or the environment, as per Basel Convention.

# Data sources and collection process

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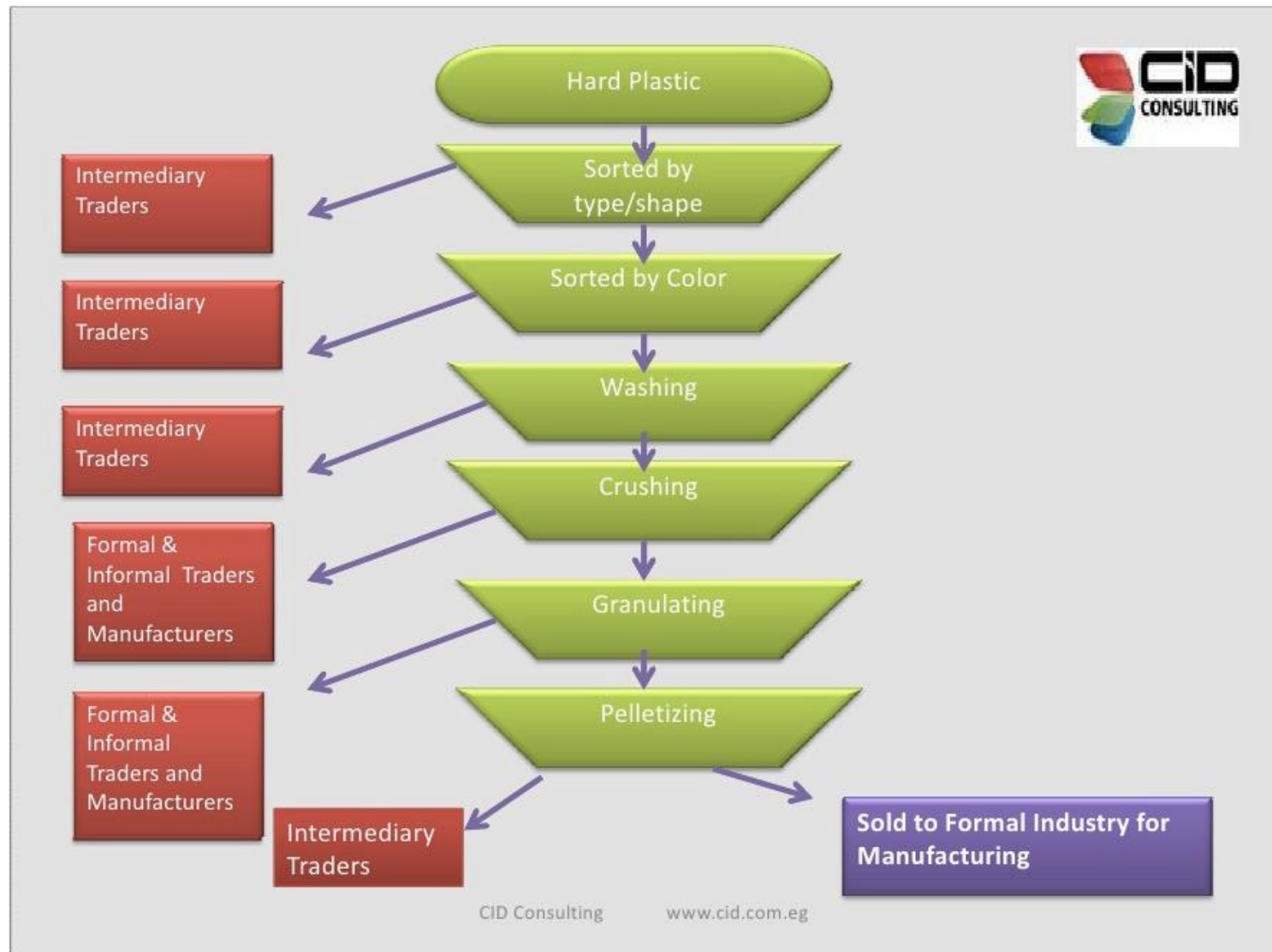
## Data sources:

- Municipal bodies;
- Private contractors;
- NGOs/community organizations;
- Permitted end of recycling chain entities;
- Processing units;
- Customs offices.

## Data collection process:

- Official reports at national/entity/generator level;
- Questionnaires
- Sample studies extrapolated at sector/national level.

# Data Sources – Recycling value chain



# Data Sources – Data reporting flow pyramid

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# Proposed Sub-indicator levels

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## Indicator 12.5.1 – Recycling Rate

**Level 1** – global dataset which includes modelling of data gaps but is based on national official statistics

**Level 2** - reporting of national data and meaningful sub-indicators, such as:

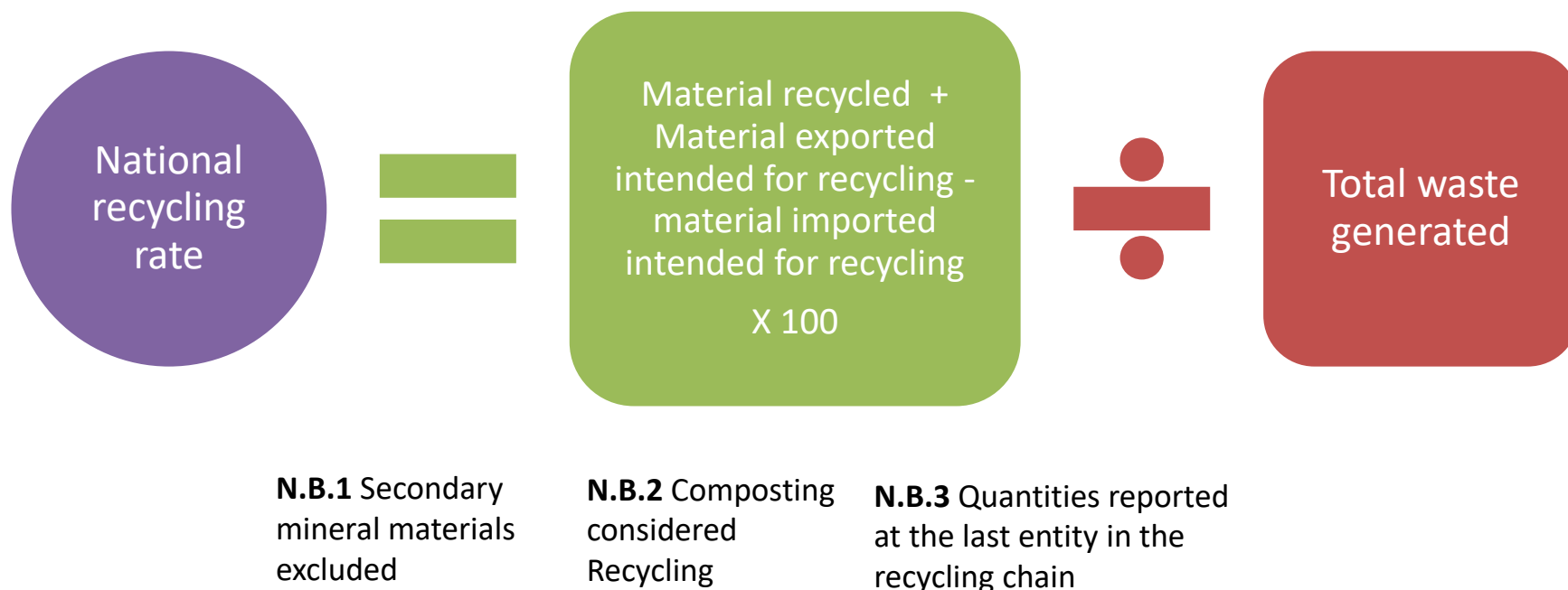
- A. Recycling rate by material flow for metals using DMC*
- B. Packaging waste recycling rate*
- C. WEEE recycling rate*

## 12.5.1 Recycling Rate sub-indicators

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*National recycling rate, tons of material recycled*

**Level 1** – with the use of gap-fillers and country-specific data



*Whenever country-specific data exists, it should replace the gap-fillers.*

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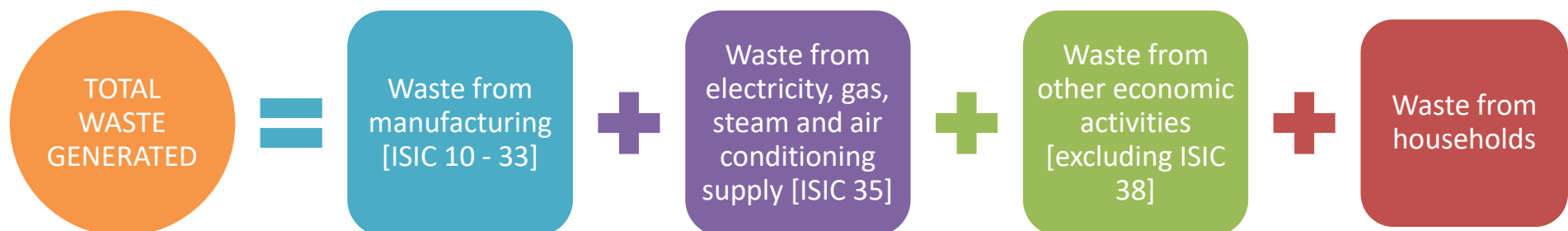


## 12.5.1 Recycling Rate sub-indicators

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*National recycling rate, tons of material recycled*

**Level 1** – with the use of gap-fillers and country-specific data



**N.B.** Excludes Construction waste, agricultural waste and quarrying and mining waste

*Whenever country-specific data exists, it should replace the gap-fillers.*

## 12.5.1 Recycling Rate sub-indicators

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*National recycling rate, tons of material recycled*

**Level 2** – reporting of national data and meaningful sub-indicators, such as:

### B) Packaging waste recycling rate



*( expressed as a % for the reporting year )*

**N.B.** Includes quantities exported for recycling, excludes imports

## 12.5.1 Recycling Rate sub-indicators

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*National recycling rate, tons of material recycled*

**Level 2** – reporting of national data and meaningful sub-indicators, such as:

### B) Recycling rate for E-WASTE



*( expressed as a % for the reporting year )*

**N.B.** Includes quantities exported for recycling, excludes imports

# Disaggregation

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Data for this indicator can be disaggregated at various levels for this indicator in accordance with the country's policy information needs. For instance:

- In country recycling and materials exported destined for recycling
- By recyclable material.
- Disaggregation of Recycling Rate by material flow for metal is possible by disaggregated data for ferrous and non-ferrous recycled materials and material flows.

# Introduction – SDG 11.6.1 and 12.3.1

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<b>Goal 11:</b>	<b>Make cities and human settlements inclusive, safe, resilient and sustainable</b>
<b>Target 11.6:</b>	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
<b>Indicator 11.6.1</b>	Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities.
<b>Goal 12:</b>	<b>Ensure sustainable consumption and production patterns</b>
<b>Target 12.3:</b>	By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
<b>Indicator 12.3.1</b>	Global food loss and <b>food waste index</b>

# Concepts and definitions – 11.6.1

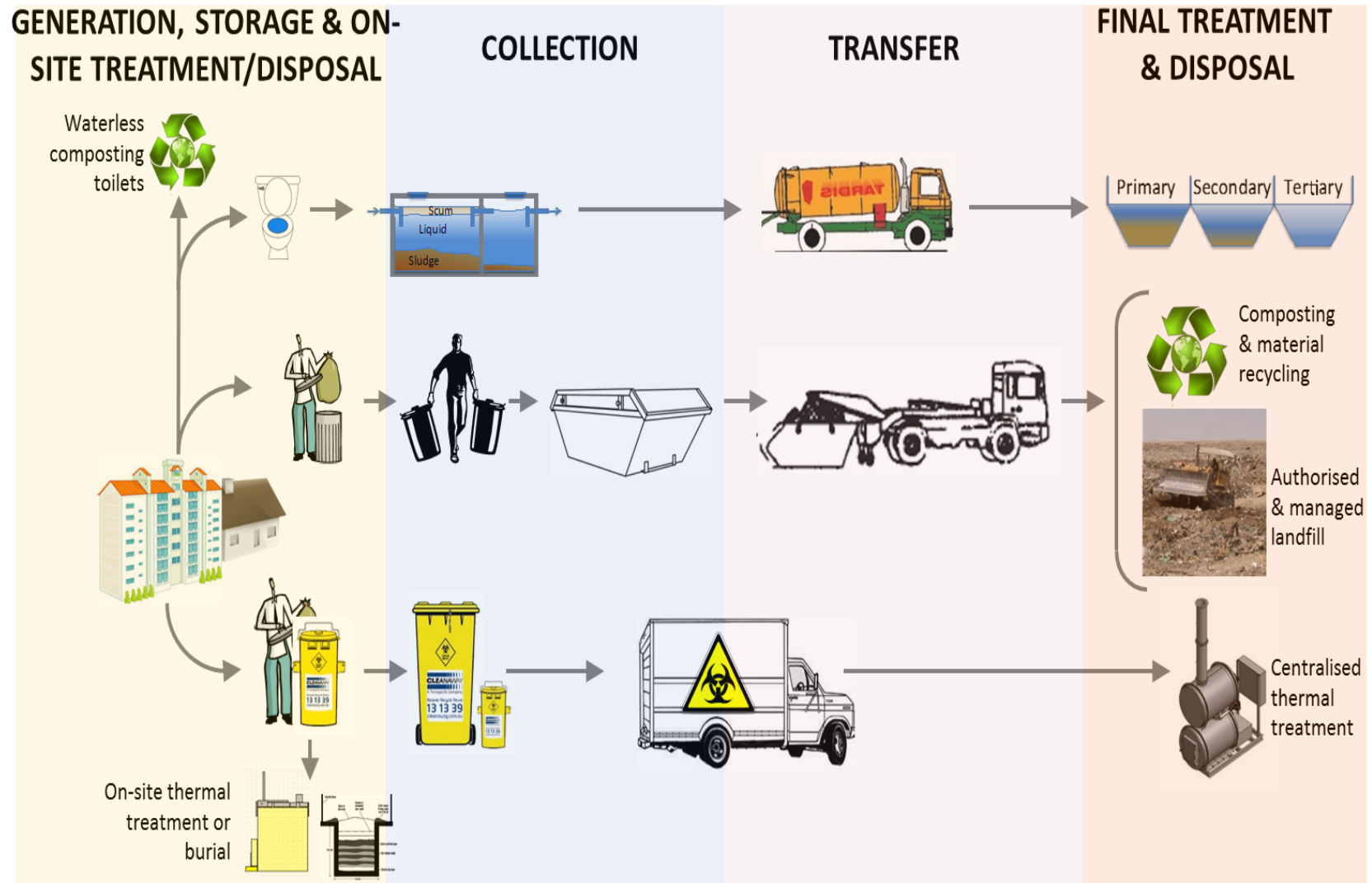
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**Adequate final discharge** - refers to the total municipal solid waste destined for treatment or disposal facilities that at least reached an intermediate level of control. The level of adequacy for a particular facility can be assessed using the qualitative criteria including 1) degree of control over waste reception and general site management; 2) degree of control over waste treatment and disposal and 3) degree of monitoring and verification of environmental control.

**Urban/municipal solid waste** - waste generated by households, and waste of a similar nature generated by commercial and business establishments, industrial and agricultural premises, institutions such as schools and hospitals, public spaces such as parks and streets and construction sites. Generally, it is nonhazardous wastes composed of food waste, garden waste, paper and cardboard, wood, textiles, nappies (disposable diapers), rubber and leather, plastics, metal, glass, and refuse such as ash, dirt and dust.

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# Data Sources – Waste process flow



# Concepts and definitions – 12.3.1

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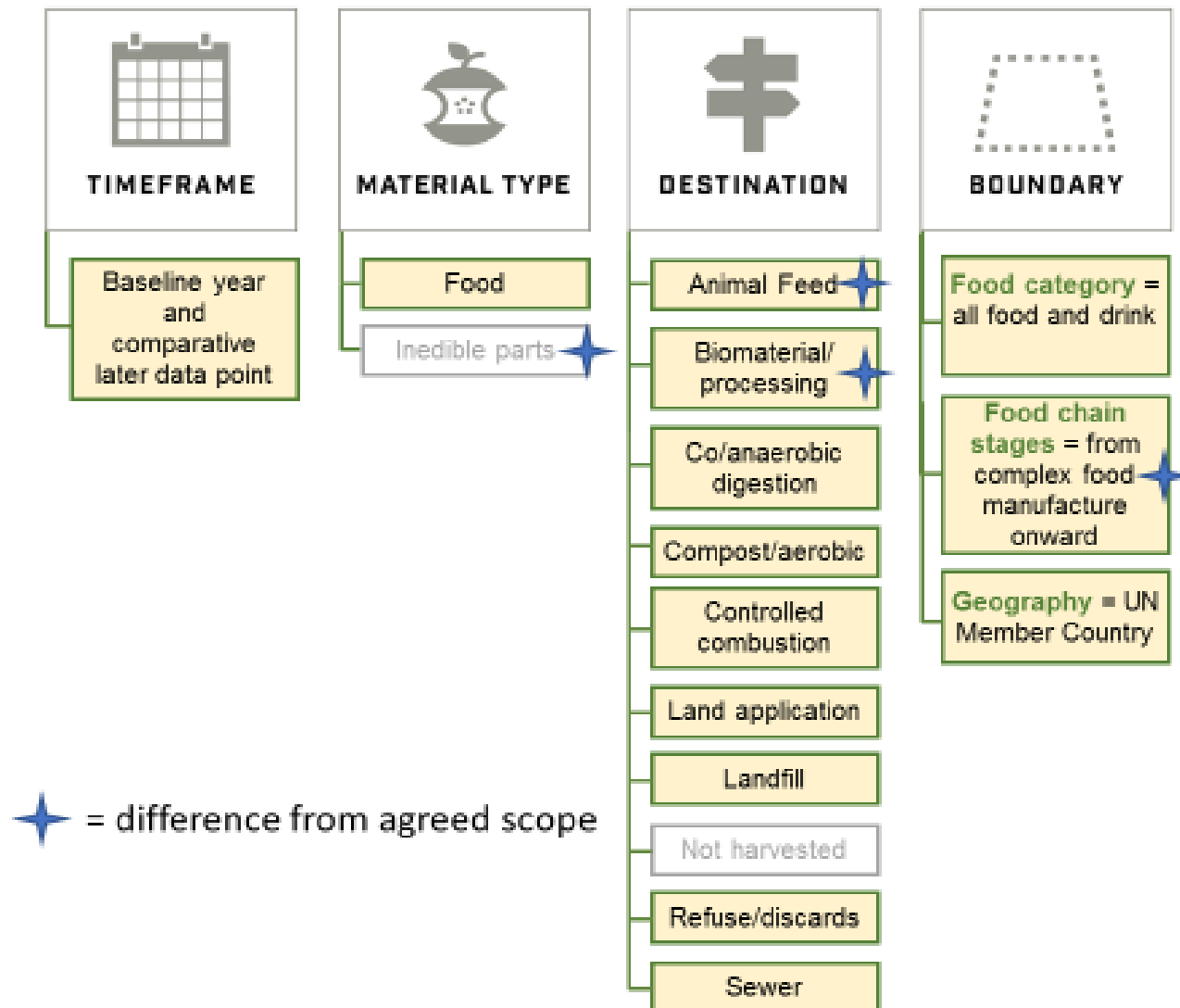
**Food waste** - the food and associated inedible parts removed from the human food supply chain at the following found in the later stages of the food chain:

- manufacturing of food products,
- food retail and wholesale,
- out-of-home consumption and
- in-home consumption.

It comprises material not fed to animals or used industrially as bio-based material or in biochemical processing.



# Food waste – scope



Thank you

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Jillian Campbell, UN Environment

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