SDG Indicator 12.4.2

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

Introduction

Goal 12:	Ensure sustainable consumption and production patterns
Target 12.4:	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
Indicator 12.4.2	Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment

Rationale

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

Benefits

Medicine	Hazardous waste
Cleaning products	Pollution
...	...

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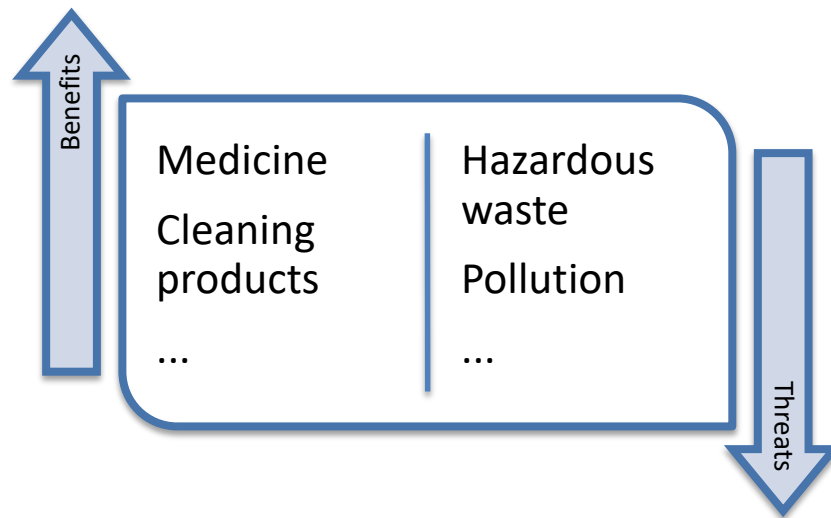
- Rapid increase in generation of hazardous waste
- Multiple sources of hazardous waste (industrial, commercial, medical, households, etc.)
- Potential for contamination of air, water, soil, as well as non-hazardous waste streams. => waste separation is crucial

Hazardous waste data

Challenges related to waste management data:

- Lack of internationally agreed and harmonized definitions and methodologies, leading to poor comparability of data among countries
- Difficulty in capturing household-level waste management practices, informal or semi-formal activities, as well as illegal waste related activities
- Hazardous waste is a multi-sector, multi-level and multi-stakeholder subject
- Different life-cycle depending on type and source of hazardous waste
- Data and information demonstrating the linkages and identifying trends to inform policy action are essential, but often non-existent or scattered among different institutions
- Often lack of transparent institutional cooperation between national, regional and local authorities for the production and use of national environment statistics
- Difficulty in linking the use of chemicals with hazardous waste (example: solvent-based paint)

Concepts and definitions - I

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

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

Proposed sub-indicator levels

Indicator 12.4.2 – Hazardous Waste

Level 1 – global dataset which includes modelling of data gaps but is based on national official statistics
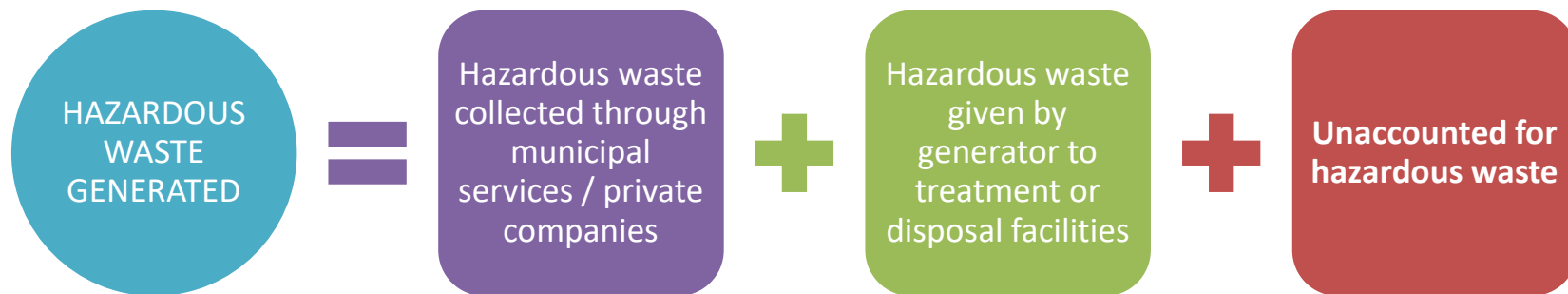
Level 2 - reporting of national data and meaningful sub-indicators, such as:

A. *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

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

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

| HAZARDOUS WASTE GENERATED | = | Hazardous waste collected through municipal services / private companies | + | Hazardous waste given by generator to treatment or disposal facilities | + | **Unaccounted for hazardous waste** |

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

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

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

Proportion of hazardous waste treated [%]	=	Quantity of hazardous waste treated X 100	÷	Quantity of hazardous waste generated
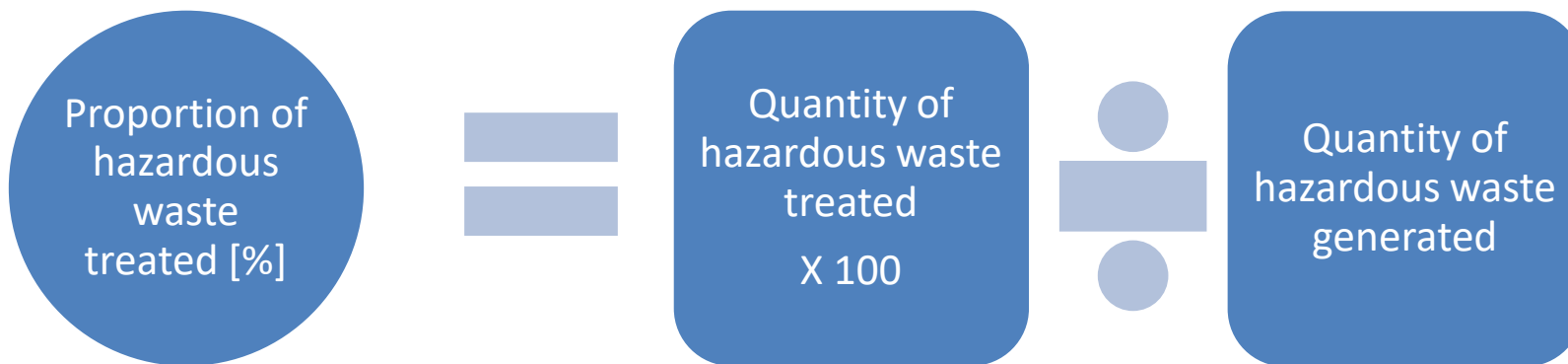
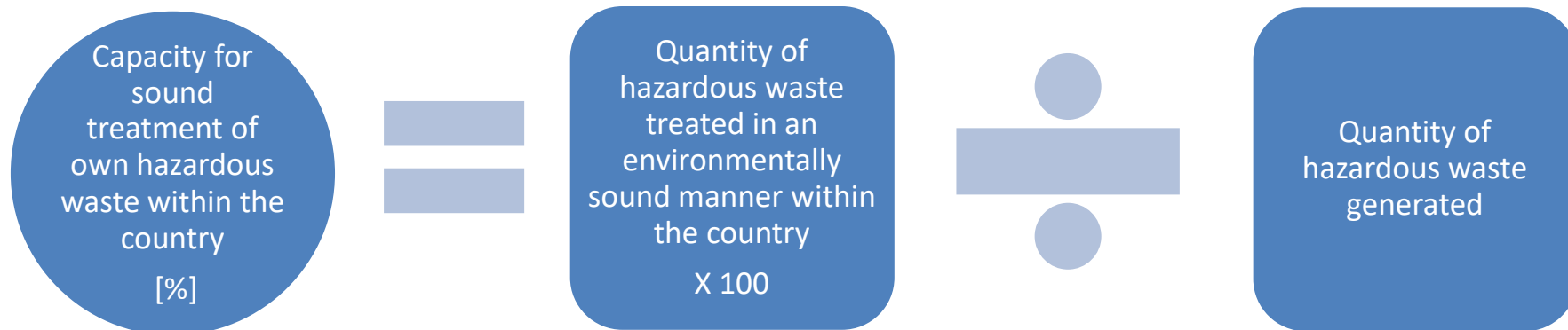N.B. 1 Excluding exports but including imports

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

12.4.2 Hazardous Waste sub-indicators

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

Capacity for sound treatment of own hazardous waste within the country [%]

=

Quantity of hazardous waste treated in an environmentally sound manner within the country X 100

÷

Quantity of hazardous waste generated

(expressed as a % for the reference year)

N.B. Excluding exports, excluding imports

12.4.2 Hazardous Waste sub-indicators

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

12.4.2 Hazardous Waste sub-indicators

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

D) Hazardous Waste Intensity of Production

Purpose: to characterize how 'clean' a country's production processes are by linking hazardous waste generation to the Domestic Material Consumption

Hazardous waste intensity of production = Quantity of hazardous waste generated during the reporting year ÷ DMC in the reporting year

(expressed as a number for year Y)

N.B. A lower score is better –> less hazardous waste generated per unit of DMC

Disaggregation

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

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.

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

SDG Indicator 12.5.1

National recycling rate, tons of material recycled

Introduction

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

Rationale

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

- 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

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

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

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.

Proposed Sub-indicator levels

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

National recycling rate, tons of material recycled

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

National recycling rate **=** Material recycled + Material exported intended for recycling - material imported intended for recycling X 100 **÷** Total waste generated

N.B.1 Secondary mineral materials excluded
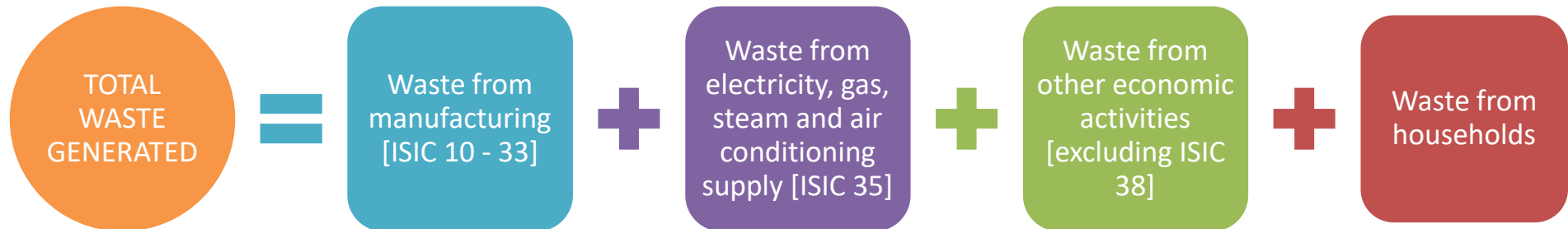
N.B.2 Composting considered Recycling

N.B.3 Quantities reported at the last entity in the recycling chain

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

12.5.1 Recycling Rate sub-indicators

National recycling rate, tons of material recycled

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

TOTAL WASTE GENERATED **=** Waste from manufacturing [ISIC 10 - 33] **+** Waste from electricity, gas, steam and air conditioning supply [ISIC 35] **+** Waste from other economic activities [excluding ISIC 38] **+** Waste from households
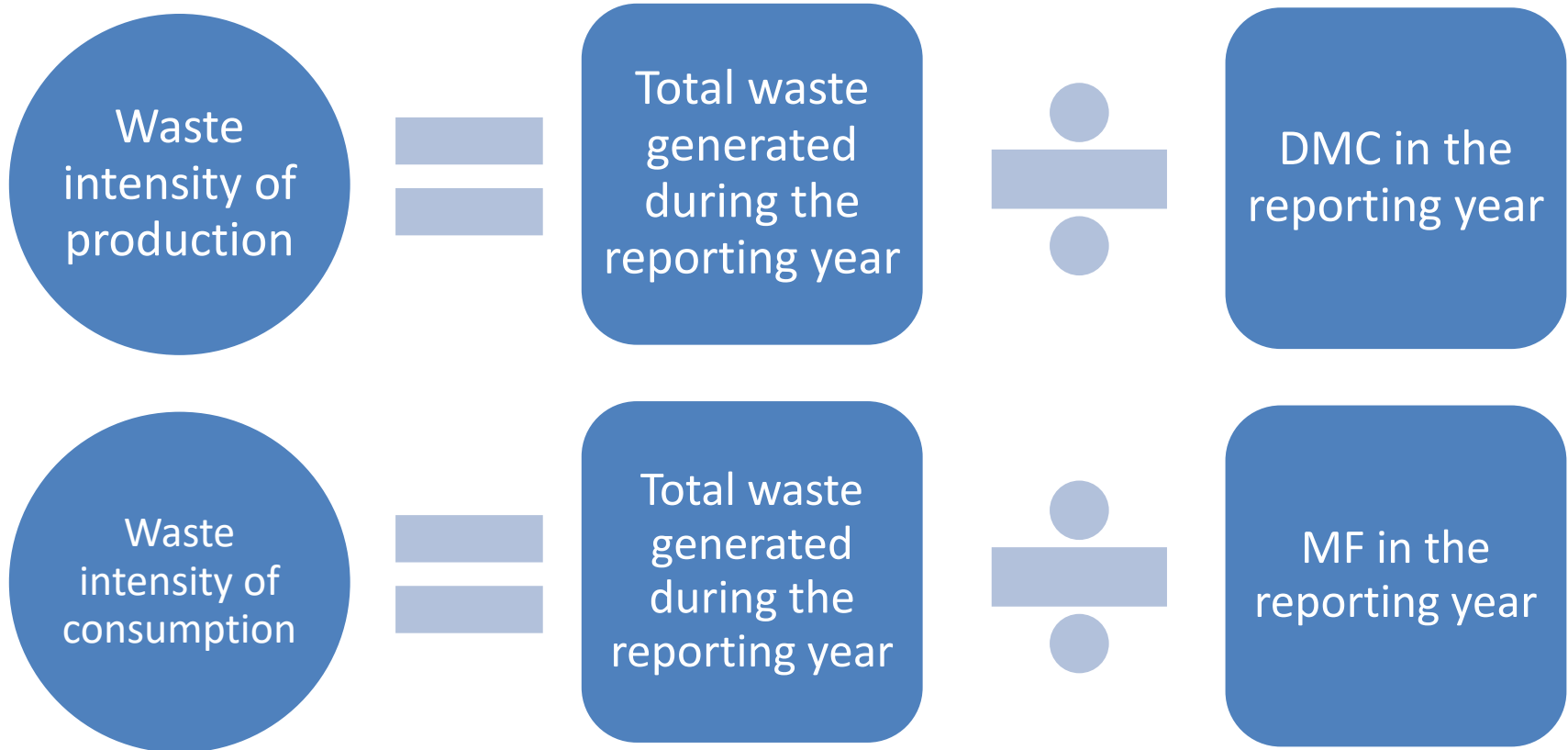
N.B. Excludes Construction waste, agricultural waste and quarrying and mining waste

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

12.5.1 Recycling Rate sub-indicators

National recycling rate, tons of material recycled

Waste intensity of production = **Total waste generated during the reporting year** ÷ **DMC in the reporting year**

Waste intensity of consumption = **Total waste generated during the reporting year** ÷ **MF in the reporting year**

(expressed as a % for the reporting year)

N.B. A lower score is better –> less waste generated per unit of DMC/MF

12.5.1 Recycling Rate sub-indicators

National recycling rate, tons of material recycled

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

A) Recycling rate by material flow for metals using DMC

National recycling rate for metals = Total quantity of metals recycled ÷ DMC of metal ore

(expressed as a % for the reporting year)

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

12.5.1 Recycling Rate sub-indicators

National recycling rate, tons of material recycled

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

B) Packaging waste recycling rate

Packaging waste recycling rate **=** Tons of packaging waste recycled + exported for recycling **÷** Tons of packaging waste generated

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

(expressed as a % for the reporting year)

12.5.1 Recycling Rate sub-indicators

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

$$\text{E-Waste recycling rate} = \frac{\text{Tons of E-Waste recycled + exported for recycling}}{\text{Tons of E-Waste generated}}$$

(expressed as a % for the reporting year)

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

Disaggregation

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.

# Data sources and collection process

Data sources:

- Municipal bodies;

- Private contractors;

- NGOs/community organizations;

- Permitted end of recycling chain entities;
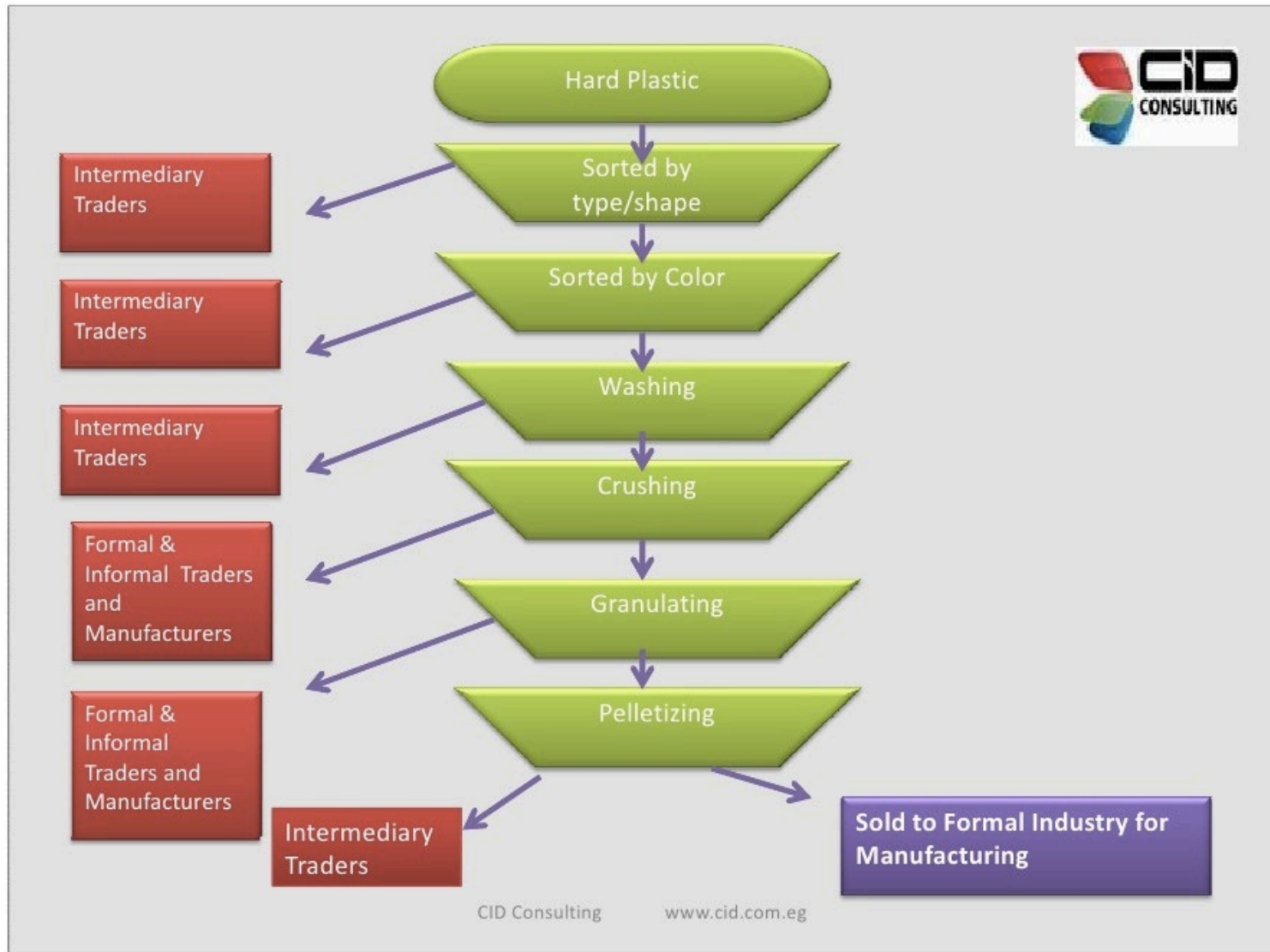
- Processing units;

- Customs offices.

Data collection process:

- Official reports at national/entity/generator level;

- Questionnaires

- Sample studies extrapolated at sector/national level.

Data Sources – Waste process flow
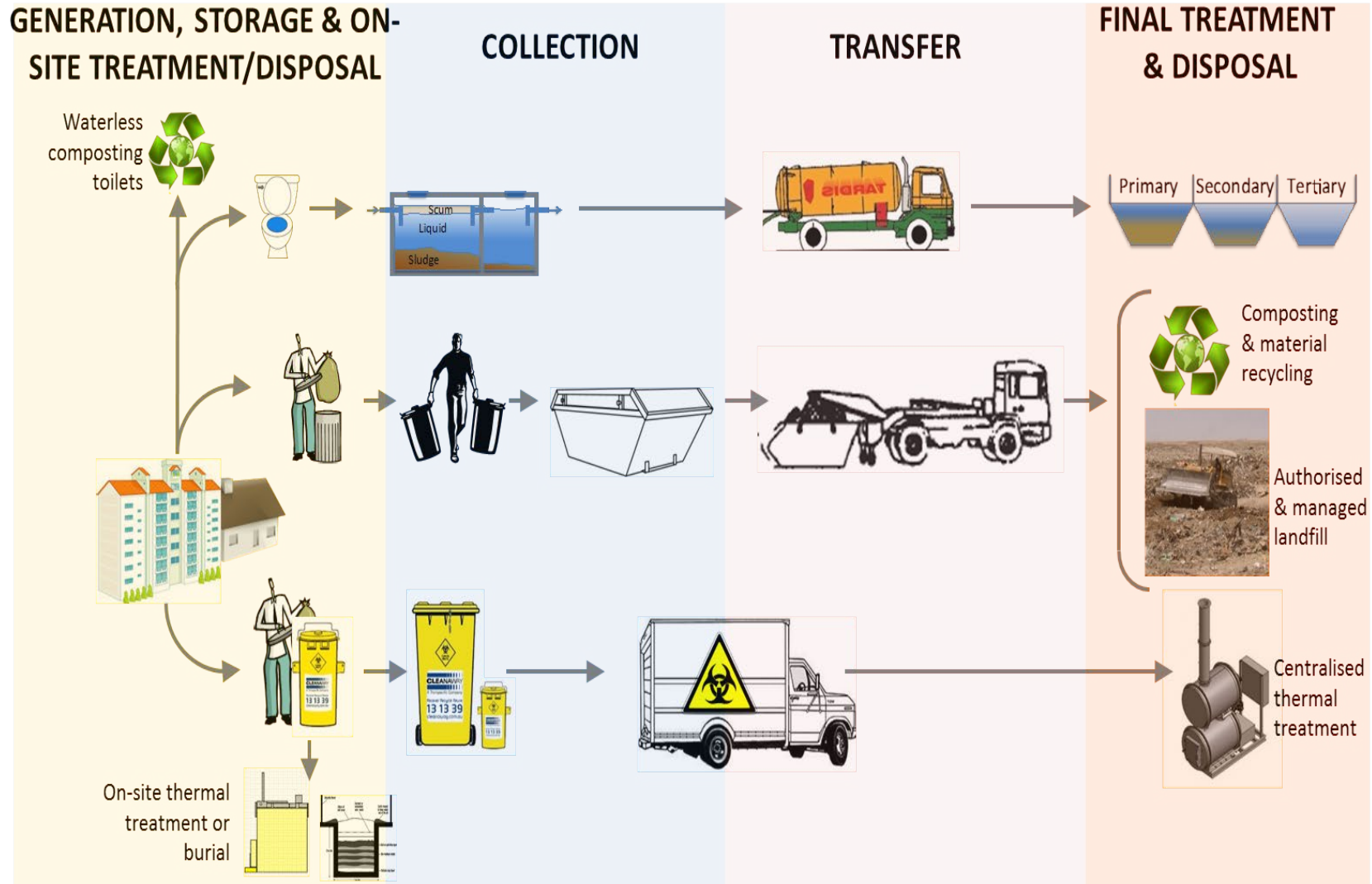
Data Sources – Recycling value chain

CID Consulting   www.cid.com.eg

Data Sources – Data reporting flow pyramid

Data reporting

UN Focal Point

Data verification, aggregation

Line Ministries

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Data providers

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