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**UNU-VIE** SCYCLE  
Sustainable Cycles Programme

## Municipal Waste Statistics

Information needs, main concepts, key terminology and classifications

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## Programme



# MSW

- Background
- Definitions
- Key terminology
- Observations on comparability
- dissemination

# Long history of international statistics on MSW

- From 1988 to 2003 - waste statistics collection based on the OECD / Eurostat Joint Questionnaire on waste
- Since 2004 municipal waste data collection continues based on a subset of the Joint Questionnaire
- Municipal waste generation and treatment
- Share of population served by MW collection schemes
- Unit: kg per capita and year

# SDG 11

- Goal 11:
  - Make cities and human settlements inclusive, safe, resilient and sustainable
- Target 11.6:
  - 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
- Indicator 11.6.1:
  - Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities

# Simplest definition of MSW

- Municipal waste covers household waste and waste similar in nature and composition to household waste.
- From joint questionnaire Eurostat/OECD

# Longer definition (Eurostat/oecd)

- Includes collected waste from these sources:
  - door-to-door through traditional collection (mixed household waste),
  - fractions collected separately for recovery operations (through door to-door collection and/or through voluntary deposits).
- Includes waste from the same sources and similar in nature and composition which:
  - are collected directly by the private sector (business or private nonprofit institutions) not on behalf of municipalities (mainly separate collection for recovery purposes),
  - originate from rural areas not served by a regular waste service, even if they are disposed by the generator.
- Excludes
  - waste from municipal sewage network and treatment municipal construction and demolition waste.

# MSW in relation to Waste Statistics

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- This definition has evolved over time by operationalising it along the 3 main dimensions for waste statistics:
  - Waste origin
  - waste materials
  - waste collectors
- Waste origin and materials → similar to household waste, but not exclusively
- Waste collectors → collected by or on behalf of municipalities

# Type of materials in MSW

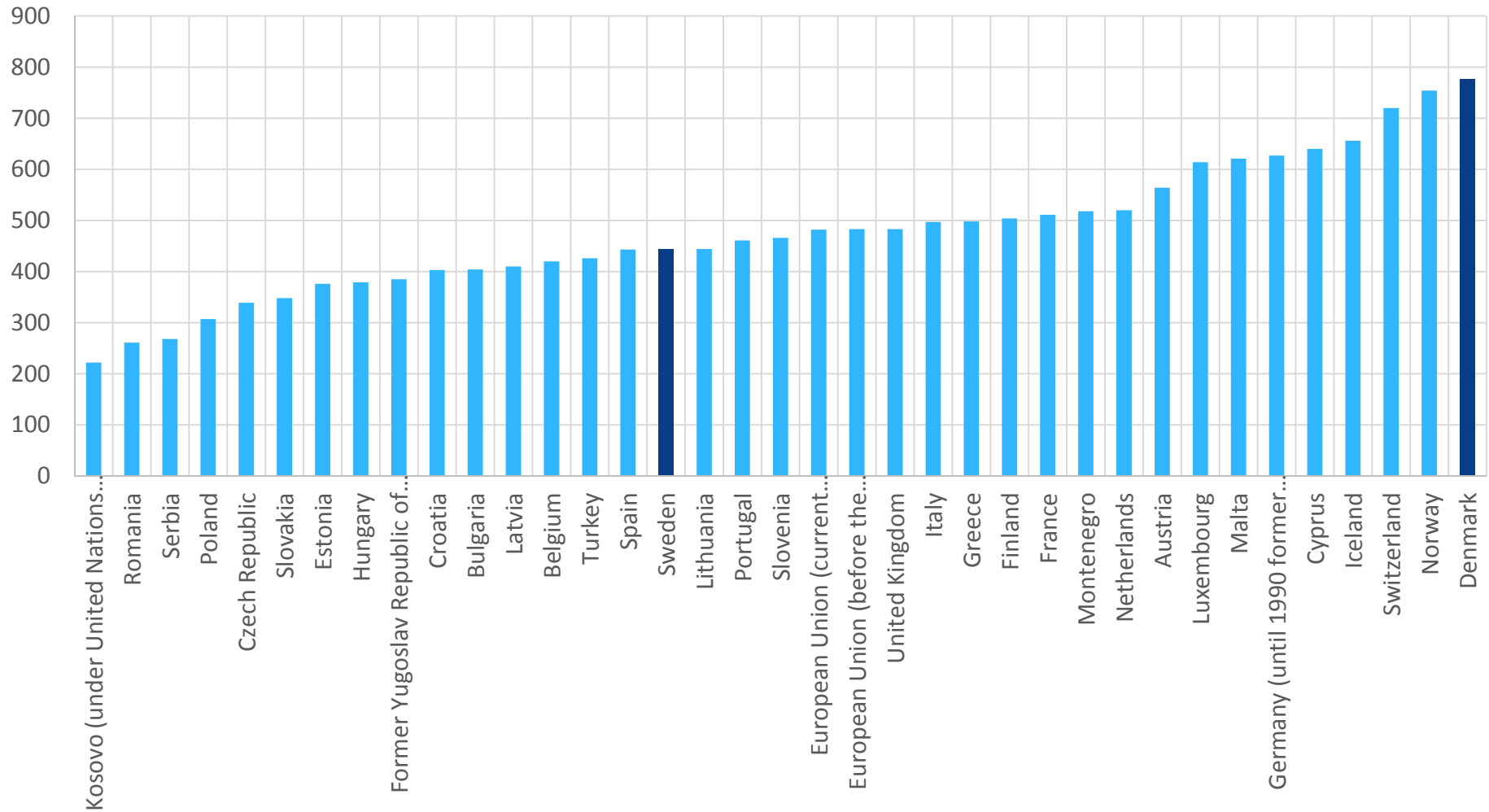
- Household waste and similar
- bulky waste e.g. white goods, old furniture, mattresses yard waste, leaves, grass clippings, street sweepings, the content of litter containers, and market cleansing waste
  - if managed as waste.
- It includes waste originating from:
  - Households commerce and trade, small businesses, office buildings and institutions (schools, hospitals, government buildings).
- It also includes:
  - waste from selected municipal services i.e.waste from park and garden maintenance, waste from street cleaning services (street sweepings, the content of litter containers, market cleansing waste),
  - if managed as waste.



# Results - MSW

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Total MSW in kg/inhabitant



# MSW

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- Not harmonized which wastes are covered, see next slide

# MSW Coverage in 16 EU countries

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Waste	hazard	01 - 02 / A01-A03	03 /B	04 - 13 / C10-C33	14 /D	15 -16 / E36-E39	17 /F	18 / G- U_X_G46 77	19 / G4677	20 / EP_HH	20 / HH, share by EWC-Stat
08.41 - Batteries and accumulators wastes	NHAZ							8		10	0.0%
08.41 - Batteries and accumulators wastes	HAZ							9		11	0.0%
09 (not 9.11, 9.3) - Animal and vegetal wastes	NHAZ							11		14	9.4%
09.11 - Animal waste of food preparation and products	NHAZ										
09.3 - Animal faeces, urine and manure	NHAZ										
10.1 - Household and similar wastes	NHAZ	6	7	7	7	8	7	13	6	16	68.1%
10.2 - Mixed and undifferentiated materials	NHAZ							11		10	2.7%
10.2 - Mixed and undifferentiated materials	HAZ							6			0.0%
10.3 - Sorting residues	NHAZ										
10.3 - Sorting residues	HAZ										
11 (not 11.3) - Common sludges (excluding dredging spoils)	NHAZ									6	0.1%
11.3 - Dredging spoils	NHAZ										
12.1 to 12.5 (not 12.4) - Mineral wastes	NHAZ							6		10	2.2%
12.1 to 12.5 (not 12.4) - Mineral wastes	HAZ										0.0%
12.4 - Combustion wastes	NHAZ										
12.4 - Combustion wastes	HAZ										
12.6 - Contaminated soils and polluted dredging spoils	HAZ										
13 - Solidified, stabilised or vitrified wastes	NHAZ										
13 - Solidified, stabilised or vitrified wastes	HAZ										
total - Total Waste	TOTAL										100%

Legend and Notes:

	6 to 9
	10 to 13
	>13

# Main conceptual problems

- Nature of the stats
- Municipal policies define outcomes
- Comparability of waste generation in kg/inh across countries still limited
  - coverage of materials (packaging waste) and sources (commercial waste)

# MSW is broken down into four treatment categories

- Incineration (separately for with and without energy recovery) (R1 and D10)
- Landfilling (D1-D7, D12)
- Recycling (excluding composting or fermentation)
- Composting/digestion
  - (In EU Waste Framework Directive → composting is recycling)

# Composting/digestion

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- “...the aerobic or anaerobic treatment of biodegradable waste, may be counted as recycled where that treatment generates compost or digestate which, following any further necessary reprocessing, is used as a recycled product, material or substance for land treatment resulting in benefit to agriculture or ecological improvement.”
- Home composting shall be excluded.

- “...means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.”
- Direct recycling within industrial plants at the place of generation should be excluded.

# Not all R operations lead to material or energy recycling !

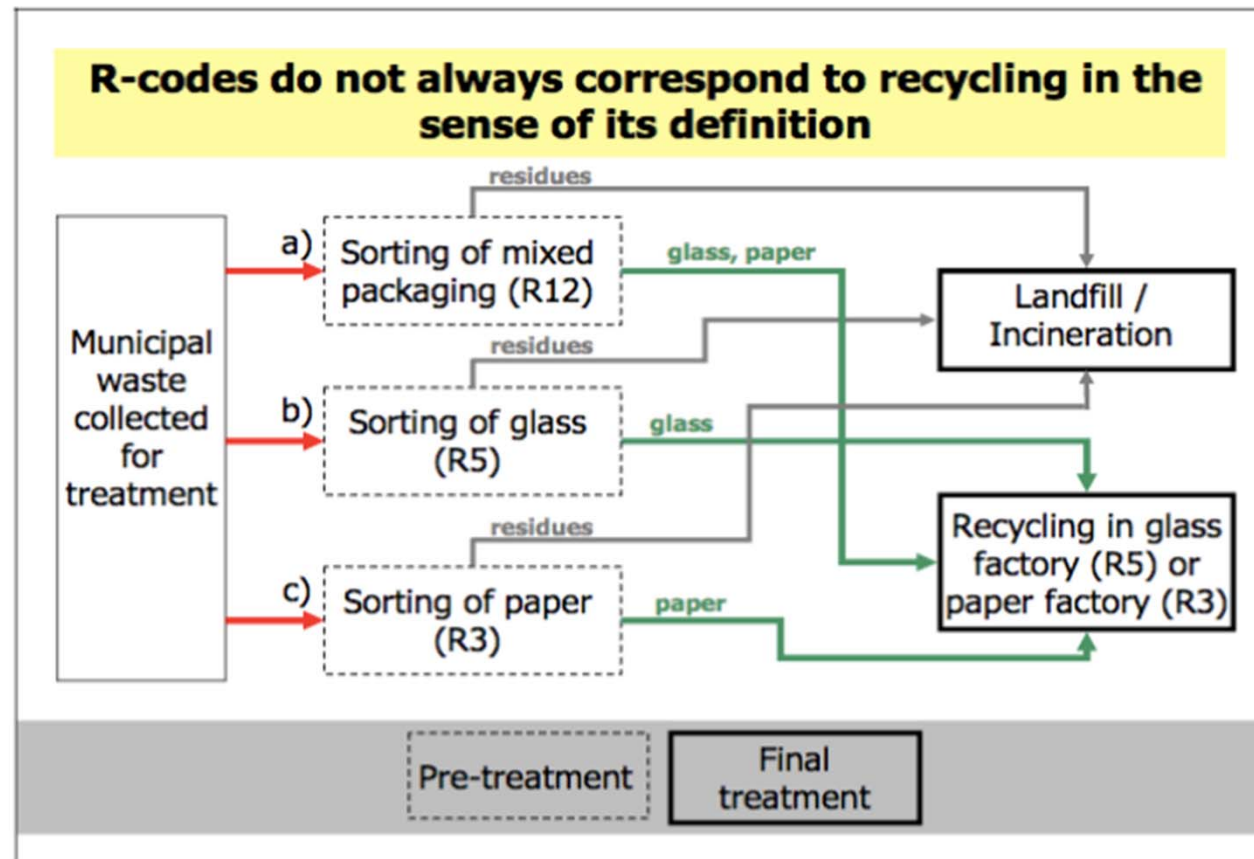


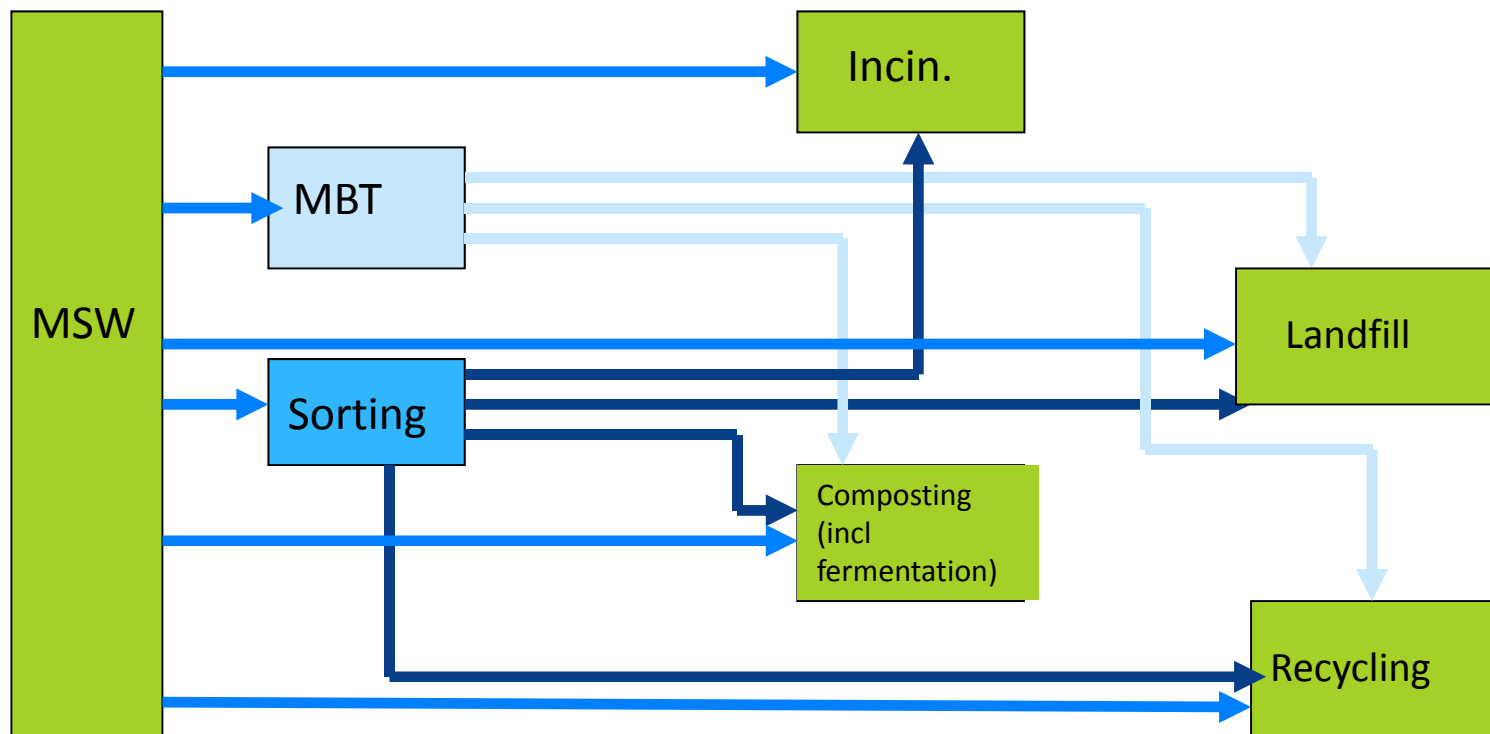
Figure 2: Varying role of sorting in municipal waste treatment classification

Source: Eurostat



# Scoping of MSW in EU and OECD

## Green needs to be reported



# System boundaries – pre-treatment

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- Mechanical biological treatment and sorting reporting varies, with considerable effect on comparability:
- MBT
  - allocation to one treatment category leads to overestimation in this category (e.g. incineration, composting)
- Sorting
  - complete allocation to recycling leads to overestimation of the recycling rate
- Follow the flows after MBT and Sorting, allocate shares to incineration, landfill, recycling or composting

# System boundaries – domestic generated MSW

- Data on municipal waste treatment should relate to the municipal waste generated in the country.
  - A minority of countries include imports and exports in their data in EU a few years ago
- How to deal with import and export of municipal waste?
  - Follow exports, and look at treatment abroad
  - Imports → do not consider
- Exclusion of exports for recycling leads to an underestimation of recycling rates

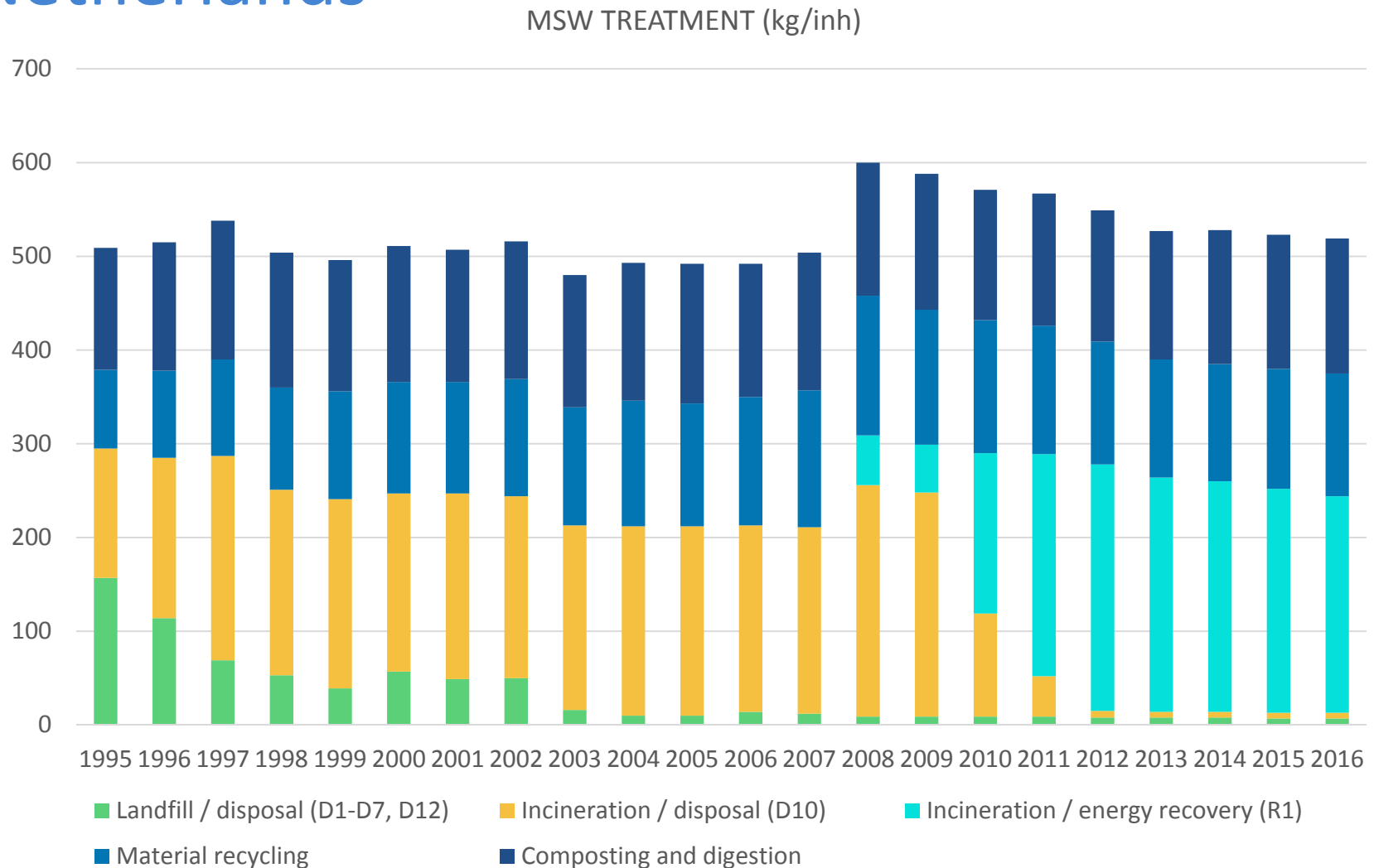
# System boundaries - Secondary wastes

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- The secondary waste amounts from pre-treatment shall be reported regardless of their codes and linked back to the input of municipal waste in the overall input of the operations

# Example: Treatment in the Netherlands

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- Longest waste statistics around
- National of high relevance
- Internationally
  - MSW stats face conceptual problems
- Trends in generation are internationally comparable
- Treatment are internationally comparable
- Best option is to record more, and provide more data