



Project Number: 2022-1-PT01-KA210-SCH-000083508
24 months: 31-12-2022 until 31-12-2024

consulting
and training
network | **C4G**

SCSF

Sustainable **cities**_Sustainable **future**

LTT - Learning teaching Training activity
nº1 entitled “Waste Sorting and good
practices”

· 25th-29th of September - Lisbon



25-09-2023	26-09-2023	27-09-2023	28-09-2023	29-09-2023
	7h30 8h30 Breakfast 9h00 Bus pick up	7h30 8h30 Breakfast 9h00 Bus pick up	7h30 8h30 Breakfast 9h00 Bus pick up	7h30 8h30 Breakfast
Arrival 20h00 – Dinner	<p>9h30 – LTT – Partners presentations</p> <p>Waste Management systems in Portugal</p> <p>Zero Waste, waste management, waste sorting, waste disposal methods and recycling in Portugal</p> <p>12h30 – 13h30 – Lunch</p> <p>14h00 – Florineve company visit. How this company approaches environmental resources</p> <p>20h00 – Fado night</p>	<p>9h30 – Next steps within SCSF project – green teams in each country</p> <p>Project implementation – local trainers development strategies</p> <p>12h00 – 13h00 - Lunch Montijo</p> <p>13h30 – Green school visit Escola D. Pedro Varela - ECO-Escolas</p> <p>Green school students showcase of activities - Escola Ary dos Santos</p> <p>20h00 – Dinner</p>	<p>9h30 – Visit to Arrábida and Azeitão</p> <p>11h00 – Visit to “Quinta da Bacalhoa” green ecosystem</p> <p>12h30 - Lunch Setúbal</p> <p>15h30 – Visit to Amarsul recycling centre</p> <p>20h00 – Farewell Dinner</p>	Departure



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Home Project Activities [Download](#)

Countries Türkiye and Romania
Increasing school education knowledge about recycling

[More information soon](#)

let's make
THE WORLD
a better place

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Sustainable cities_Sustainable future

SCSF project aims to develop a waste management and donation system in partner countries. To create awareness about zero waste and donation. To build a waste management and donation centre. To create a system and documentation about waste sorting. To build up capacity in partner organizations. To find needy people and to help them to contribute to circular economy of Europe effective use of resources and donation. To involve at least 400 beneficiaries in the SCSF project and educate them waste connection.

SCSF means Sustainable Cities Sustainable Future and the project addresses sustainable growth promoting a more resource efficient, greener and more competitive economy with all European citizens by increasing school education knowledge and engaging students in recycling.

Target Groups

Main Objectives

- 1 Develop a waste management and donation system in partner countries.
- 2 Build up capacity in partner organizations in terms of sustainable cities and sustainable future.

Target Groups

- Students and teachers in schools
- Parents of students and residents in the local areas

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Erasmus+
SUSTAINABLE DEVELOPMENT GOALS

InterCollege

- 1. Stats from WORLD to our COUNTRIES**
(Generation statistics)
- 2. Waste management systems** in Portugal
- 3. Main strategies** developed during last years
- 4. Goals** to be achieved in the near future
5. Examples
- 6. Zero waste programmes** in Portugal
7. Technological examples in waste management in Portugal
- 8. Best social practices**
- 9. Waste management at SCHOOLS** in Portugal
- 10. Waste management and SDGs**
- 11. Upcoming tasks on the project**

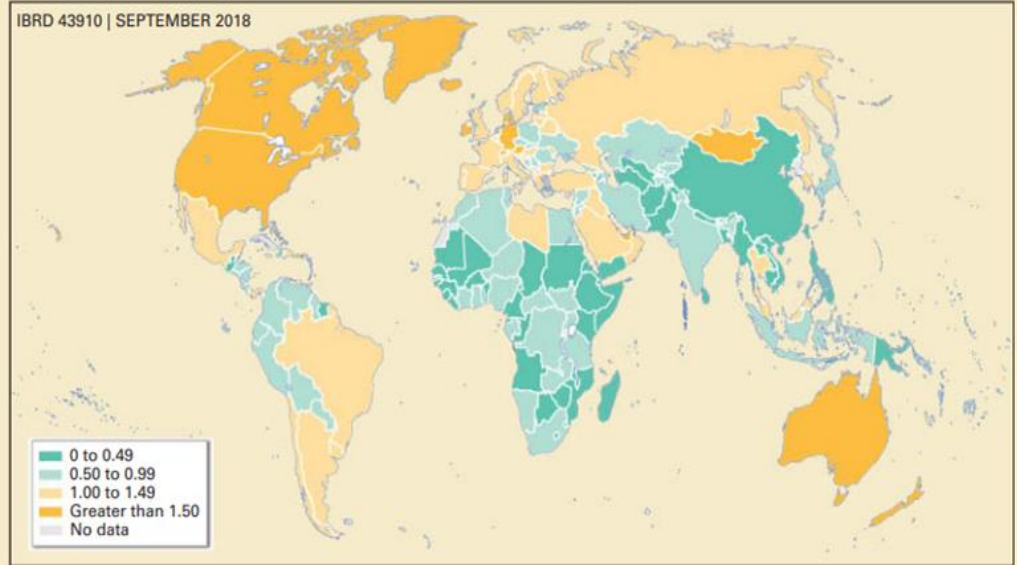


1. FROM WORLD TO OUR COUNTRIES

In 2020, the world was estimated to generate **2.24 billion tonnes of solid waste**.

High-income countries, while representing 16% of the world's population, generate more than a third (34%) of the world's waste.

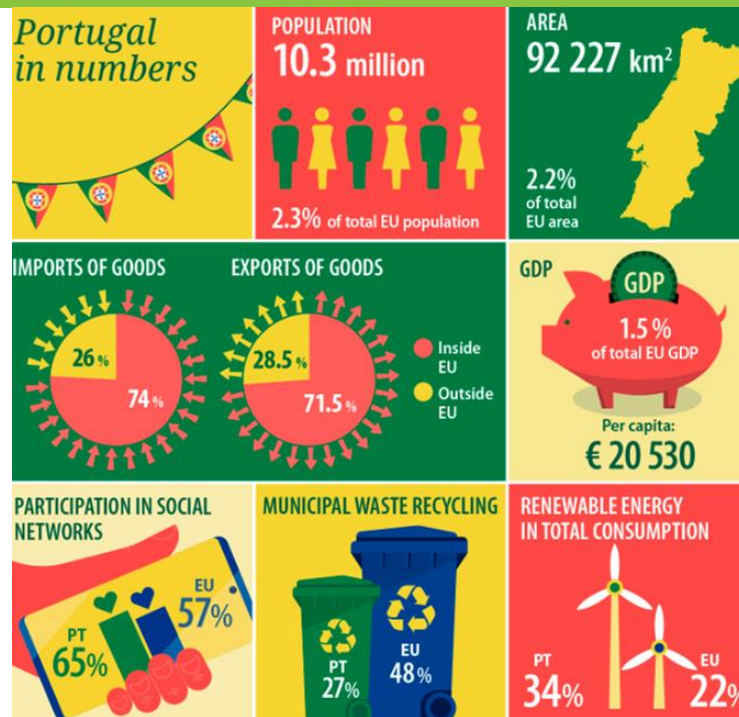
Map 2.1 Waste Generation Per Capita



Note: kg = kilogram.

Source: World Bank (2019)

1.1 PT overview

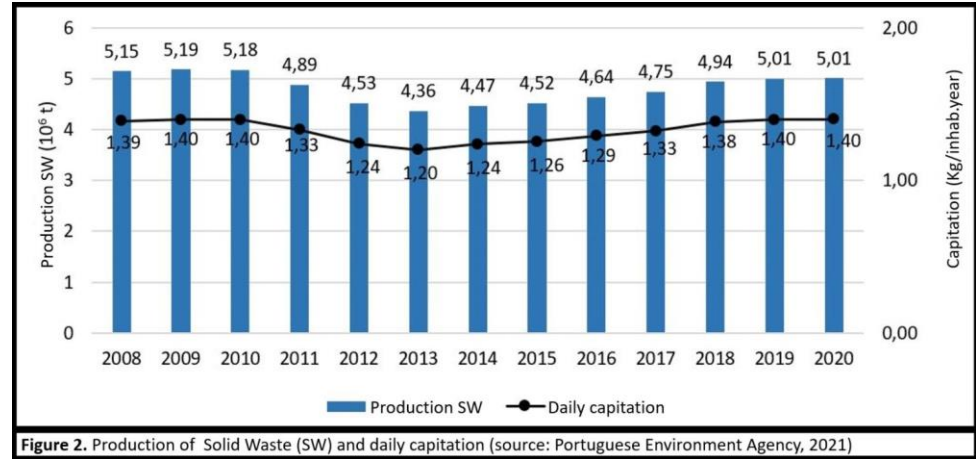


Source: ec.eurostat.eu

1.2 Waste generation in Portugal- *Basic Data (2020)*

According to Portuguese Environment Agency, for 2020, in Mainland Portugal, it was found a capitation of **512 Kg/inhab.year**, leading to an annual production of 5.01 million tons of urban waste.

On average, each Portuguese citizen produces, per day, around 1.4 kg of garbage



1.3 Waste generation- Comparison

Compared to this group of countries we find Portugal (513) between Turkey (424) and Denmark (845) generation and way above Romania (287).

Also, it remains above the **European average of 502 kg per capita/year.**

Parameter/Country	Portugal	Turkey	Denmark	Romania
		Population		
Total (Inhabitants)	10,242,815	85,903,600	5,916,498	19,837,669
		Waste generation		
Total (kg/capita/year)	513	424	845	287

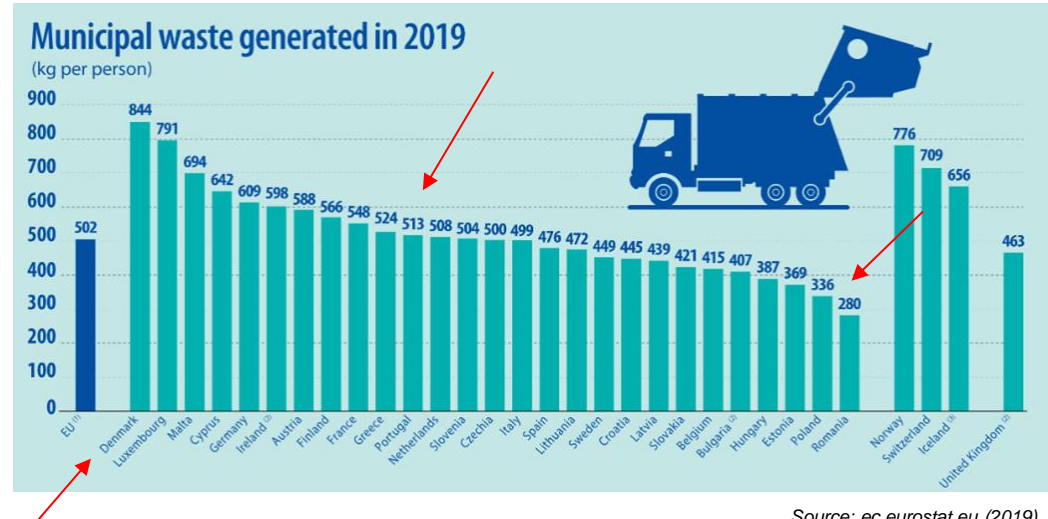
Source:World Bank (2021)\European Environment Agency (2020)

1.3 Waste generation comparison

Denmark generated the most municipal waste per person among the EU

Romania generated 280 kg of municipal waste per person.

Turkey (as seen previously) and Romania are below the EU average.



Source: ec.eurostat.eu (2019)

1.3 Waste generation comparison

A steady increase in waste generation rates has been identified in Portugal (from 445 kg per capita to 513 kg)

Figure 1: Municipal waste generation in Denmark (kg per capita), 2006-2020 (data unavailable in 2010)

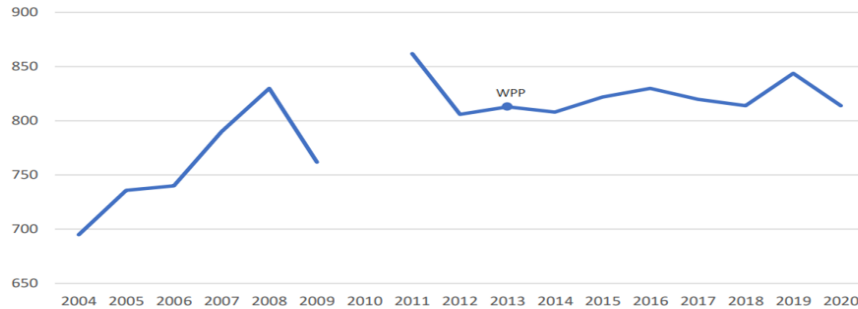


Figure 1: Municipal waste generation in Romania (kg per capita), 2004-2019

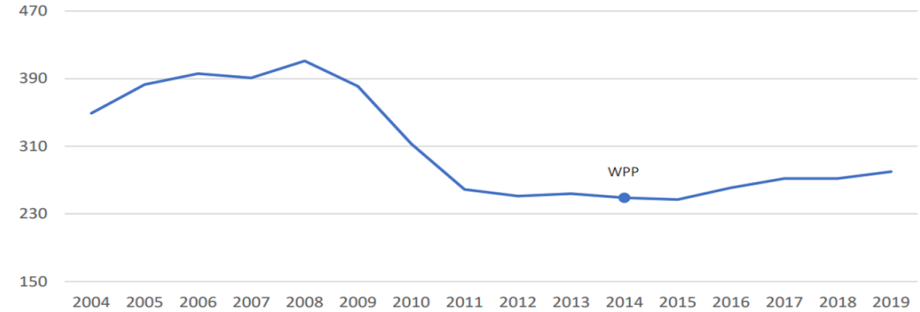
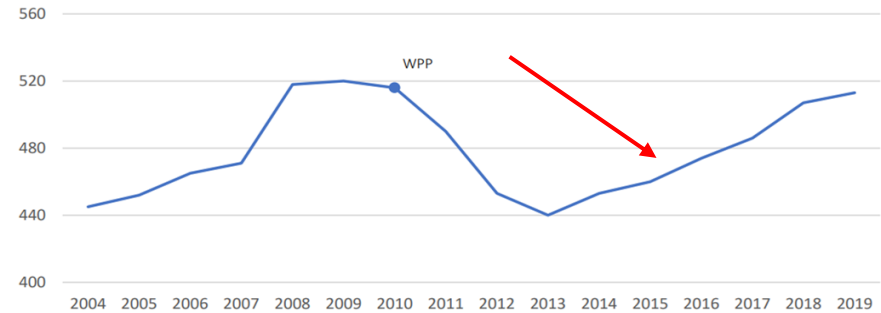



Figure 1: Municipal waste generation in Portugal (kg per capita), 2004-2019



Source: European Environment Agency (2020)

1.4 Why are we producing more waste?

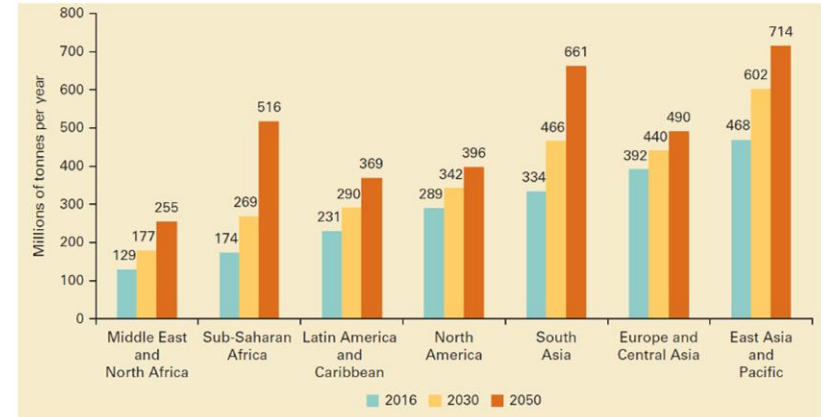
By 2050, worldwide municipal solid waste generation is expected to have increased by roughly 70 percent to **3.4 billion metric tons**.

 In the early 2000s, the amount of plastic waste we generated rose more in a single decade than it had in the previous 40 years.

Factors behind this trend:

- Population growth
- Urbanization
- Economic growth
- Consumer shopping habits.

Projected waste generation, by region (millions of tonnes/year)

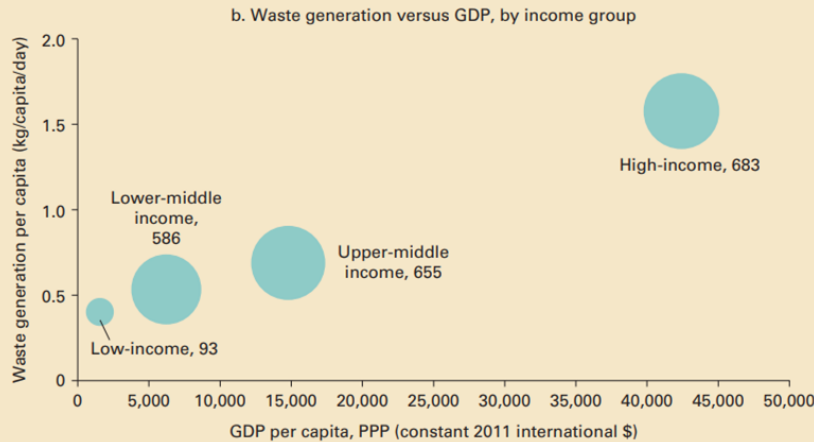


Source: World Bank (2018)

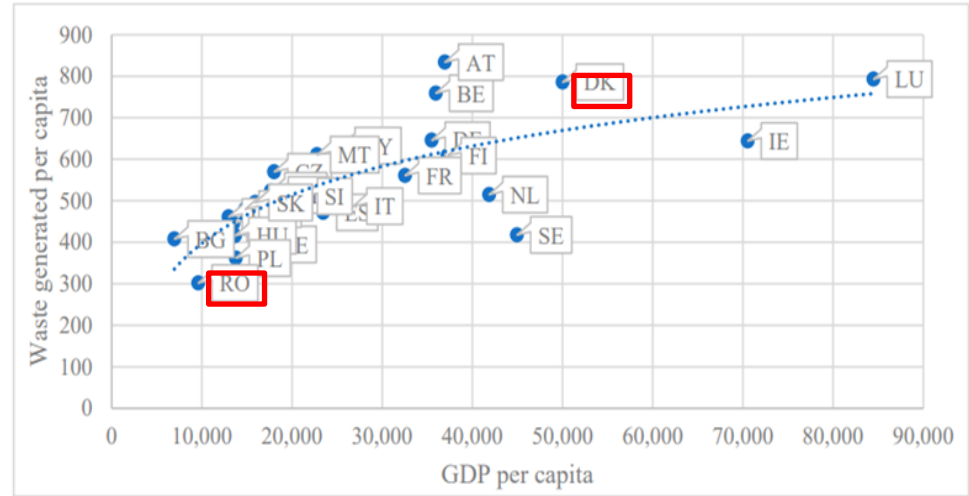
1.4.1 Correlation between GDP and waste generation

The elasticity between GDP and municipal waste is **between 0.8 and 0.9**, meaning that for every 1% increase in GDP, municipal waste increases by 0.8-0.9%.

Figure 2.3 Waste Generation and Gross Domestic Product (continued)



Source: World Bank (2018)



Source: Preprints doi: 10.20944/preprints202308.0503.v1

1.4.1 Correlation between GDP and waste generation

Romania does seem to be on track to **decouple** total waste generation from economic growth. The decoupling between population growth and total waste generation however, is much weaker

Figure 1. Growth rate of waste, GDP and population in **Romania**

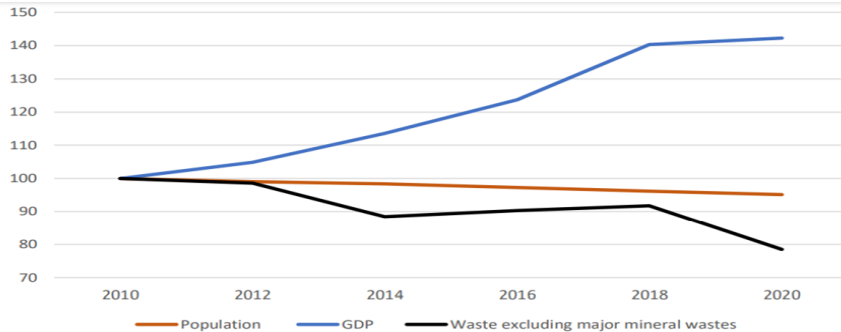


Figure 3. Growth rate of waste, GDP and population in **Denmark**

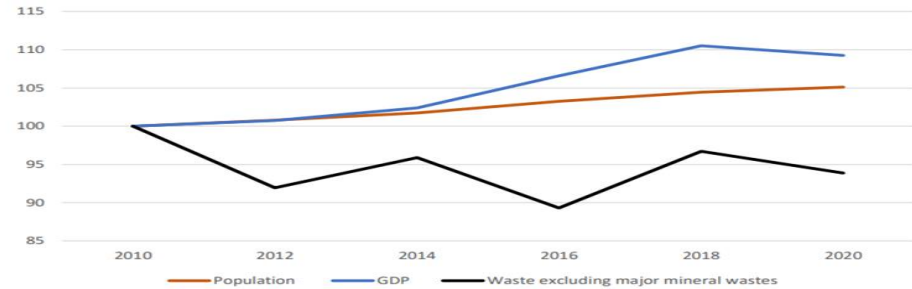
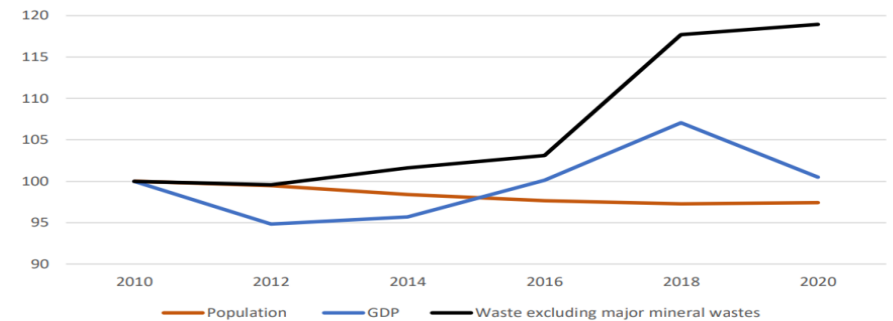


Figure 2. Growth rate of waste, GDP and population in **Portugal**

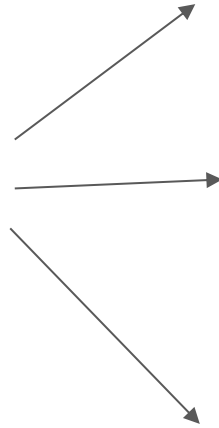


Source: European Environment Agency (2020)

2. WASTE MANAGEMENT SYSTEM IN PORTUGAL

But... Once generated, How do we **manage** this waste?

MANAGEMENT SYSTEMS



COLLECTION



TRANSPORT



TREATMENT



2.1 Waste management system in Portugal- *Classification*

Urban waste: waste from undifferentiated collection and selective collection from households (paper and cardboard, glass, metals, plastics) and undifferentiated collection and selective collection from other sources

Citizens and other producers are responsible for separating and depositing urban waste at collection points



2.1 Waste management system in Portugal- *Classification*

Non-Urban waste: Waste typically results from economic activities, and is generally defined as sectoral waste

Responsibility for the management of non-urban waste, including the respective costs, lies with the **initial producer** of the waste.



2.1 Waste management system in Portugal- *Classification*

Specific waste streams : categories of waste that, due to the quantity produced or their properties, are managed differently from other waste, from their origin to their final destination.

- Packaging and packaging waste;
- Oils and used oils;
- Used tires and tyres;
- Electrical and electronic equipment and waste electrical and electronic equipment;
- Vehicles and end-of-life vehicles.



2.2 Waste management system in Portugal- *Key actors*

**Ministry of
Environment,
Spatial Planning
and Energy:
waste legislation**

**Portuguese
Environment
Agency (Agência
Portuguesa do
Ambiente- *APA*)**

**23 urban waste
management
systems
(*SGRUs*)**

**Producer
Responsibility
Organizations
(*PROs*)**

2.3 Waste management system in Portugal- *Collection and transport*

Important data:

- 70% of the municipal waste is collected separately via **bring points**
- 20% via separate **door to door collection**
- 10% are collected via **civic amenity sites** and punctual/specific collections.
- Portugal does not have **separate collection of food waste** although in some cities' neighbourhoods food waste is collected separately.

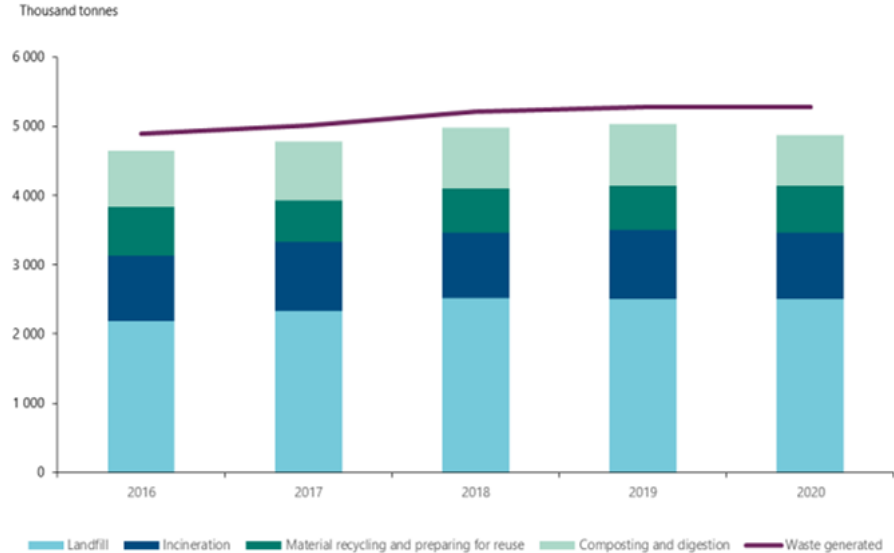


2.4 Waste management system in Portugal- *Treatment*

Waste treatment is mainly dominated by **landfilling**. The level of landfilling has been stagnating at about 47 % for the past five years.

Portugal's **incineration rate** has been stable at around 18-19 % since 2016.

The overall **recycling** rate of Portugal shows a decrease from 30.9 % in 2016 to 26.5 % in 2020



Note: Eurostat estimates for incineration and landfill for 2020

Source: Eurostat (2022a)

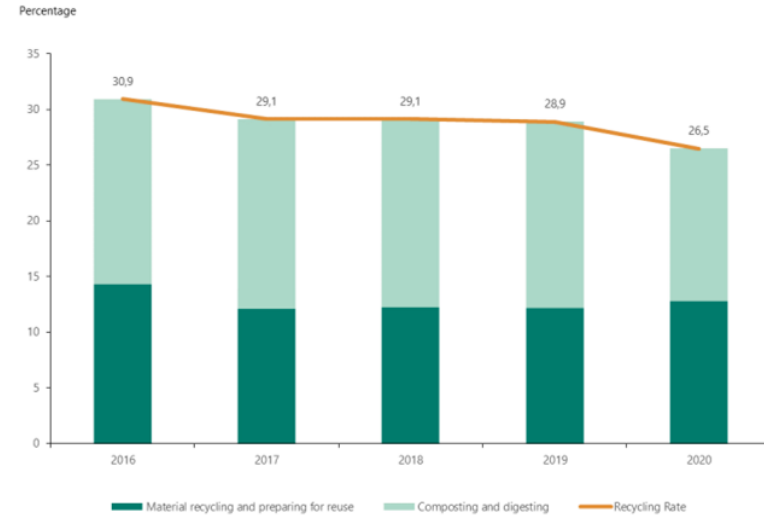
2.4 Waste management system in Portugal- *Treatment*

Reasons behind this decrease:

- Lack of incentives to manage waste according to the waste hierarchy;
- Lack of co-ordination between the different administrative levels;
- Insufficient (door-to-door) separate collection of waste
- Insufficient extended producer responsibility (EPR) systems.

***EPR systems:** policy tool that extends the producer's financial and/or operational responsibility for a product to include the management of the post-consumer stage, in order to help meet national or EU recycling and recovery targets.

Figure 2.1 Recycling rate in Portugal between 2016 and 2020, in percentage



Source: Eurostat (2022b)

2.4 Waste management system in Portugal- *Treatment*

Capture rates for recyclables:

There is room for improvement to capture higher amounts of all materials and specially textiles, metals, bio-waste and plastics.

	Residual waste composition (%) ^(b)	Residual waste composition (tonnes) ^(a)	Separately collected amounts (tonnes) ^(b)	Materials in total MSW (tonnes)	Capture rates (%)
Reference year	2019				
Mixed municipal waste, total		4 047 002			
Paper and cardboard	7 %	297 050	196 053	493 103	40 %
Metals	2 %	68 799	3 312	72 111	5 %
Glass	4 %	174 426	185 757	360 182	52 %
Plastic	12 %	469 048	124 222	593 269	21 %
Bio-waste	43 %	1 760 041	192 867	1 952 908	10 %
Textiles	4 %	169 974	2 068	169 974	1 %
Wood	1 %	28 329	28 081	30 397	50 %

^(a) Note: Share of material in residual waste (household waste only) multiplied with the amount of residual waste in 2019 as reported in the questionnaire by APA (2021)

^(b) Source: As reported in the EEA-ETC/WMGE questionnaire by APA (2021)

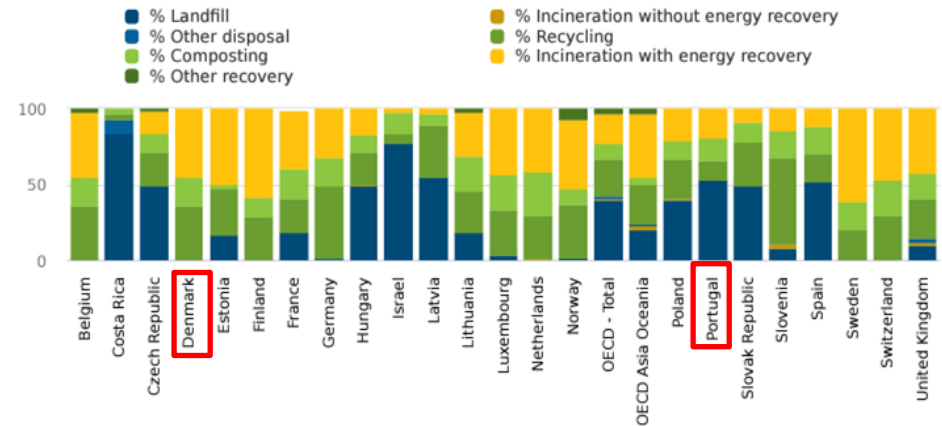
2.4 Waste management system in Portugal- *Treatment comparison*

The share of municipal solid waste landfilled in the OECD area has decreased from 54% to 41% between 2000 and 2020, with some countries no longer using landfills (Switzerland, Germany, Denmark, Finland, Sweden and Japan). Yet landfilling remains the main waste disposal method in several countries

Countries with lower economic growth may face challenges in establishing an effective waste management infrastructure.

Municipal waste by treatment operation

Percentage of total treatment, 2020



© OECD

Note: See [country metadata](#).

Source: OECD, "Waste: Municipal waste", *OECD Environment Statistics* (database), <https://doi.org/10.1787/data-00601-en>.

3. MAIN STRATEGIES DEVELOPED DURING LAST YEARS

1. The national strategy for the **reduction of BMW (Biodegradable municipal waste) landfilled** launched in 2004, aims at increasing separate collection and establishing modern facilities for its treatment
2. A new law, was introduced in July 2021 to make **separate collection** of waste as mandatory



3. MAIN STRATEGIES DEVELOPED DURING LAST YEARS

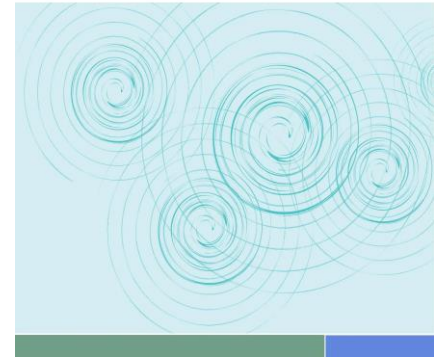
3. In 2010, ten new **MBT (Mechanical biological treatment) plants** came into operation
4. **PERSU 2020** and **PERSU 2020+** (Key measures to achieve the 55 % recycling rate by 2025) :

- More efficient separate collection practices
- An increase in the landfill tax
- Progressive elimination of waste disposal in landfills,
- Increase education and awareness campaigns
- Prevent waste generation

***MBT plants:** It is composed of a mechanical part -in which waste is mechanically separated to recover recyclables- and a biological part –to either compost or digest the organic fraction



PERSU2020+
REFLEXÃO ESTRATÉGICA E AJUSTAMENTOS
ÀS MEDIDAS DO PERSU 2020
JULHO DE 2019



4. GOALS TO BE ACHIEVED IN THE NEAR FUTURE

Weak spots:

1. Landfilling
2. Separate collection system

How to improve this situation

PERSU 2030 (currently under development):

- Further development of **door-to-door collection** systems for packaging waste and bio-waste in places with more than 50 000 inhabitants
- Improve the accessibility and functionality of civic amenity sites, measures to promote **PAYT systems** and to create tariff systems with benefits for home or community composting



5. NO MORE WASTE IMPORTS-EXAMPLES

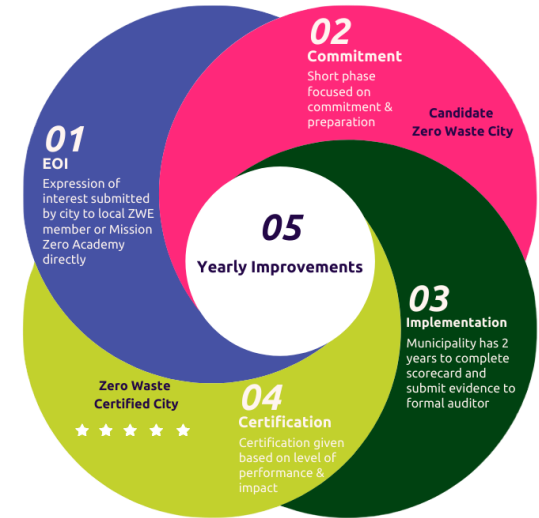


6. ZERO WASTE PROGRAMMES IN PORTUGAL

Guimarães, São João da Madeira and Vila de Rei have signed the commitment to become the first Zero Waste Certified Cities in Portugal.

Specific objectives (among others):

1. In Guimarães extending the separate collection of bio-waste to the **100% of its territory**, collecting **75%** of recyclables and **extending the PAYT system** to the whole territory.
2. In São João da Madeira, reducing residual waste to **100 kg per person** and year and reducing residual waste to 100 kg per person and year
3. In Vila de Rei collecting **85% of recyclables** through the implementation of a separate collection system



6. Communication initiatives

CHOOSE TO REFUSE
SINGLE-USE PLASTIC
PLASTICFREEJULY.ORG

Joining 31 Days of Plastic Free Choices 2022

1	2	3	4	5
Taking the Plastic Free July challenge	BYO shopping bags	Choosing reusable drink bottles	Ditching disposable coffee cups	Skipping the straw
6	7	8	9	10
Choosing loose produce	Switching from bottle to bar	Choosing reusable utensils	Choosing plastic free laundry products	
11	12	13	14	15
Using what you have	Reducing plastic in the bathroom	BYO bag to the bakery	Storing food in reusable containers	Avoiding plastic wrap
16	17	18	19	20
Buying local	Considering cloth nappies	Choosing loose tea	Hosting an event or gathering	Switching to plastic free stationery
21	22	23	24	25
BYO takeaway containers	Picking up litter	Skipping plastic bin liners	Staying and enjoying	Making homemade snacks
26	27	28	29	30
Refuse, Reduce, Reuse, Recycle	Learning more	Choosing reusable menstrual products	Turning the tide	
31				
Turning the tide				

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MUNICÍPIO CASTRO VERDE

7. TECHNOLOGICAL EXAMPLES IN WASTE MANAGEMENT IN PORTUGAL

Placing of RFID tags within garbage bins



7. TECHNOLOGICAL EXAMPLES IN WASTE MANAGEMENT IN PORTUGAL

Placing of RFID tags within garbage bins



8. AT THE MICRO LEVEL: Best social practices

1. "Dose Certa"

2. Novo Verde:

- a. Reciclar é a Nossa Praia, "International Coastal Cleanup Day"
- b. Human Ecopoints
- c. Geração Verdão

3. Refood project



Associação Bandeira Azul da Europa (ABAE):

- **Eco-Schools Program:** It aims to encourage actions and recognize the quality work developed by the school, within the scope of Environmental Education for Sustainability.
- **Academia Ponto Verde:** aims to promote environmental literacy among children and young people.



9. WASTE MANAGEMENT IN PORTUGUESE SCHOOLS

Some awarded schools:

1. Villamoura International school (Villamoura)
2. NOVA School of Science and Technology (Lisbon, Caparica)
3. **Escola D. Pedro Varela (Montijo)**



10. WASTE MANAGEMENT AND SDGs

SDG Dashboards and Trends

Click on a goal to view more information.



Dashboards: ● SDG achieved ● Challenges remain ● Significant challenges remain ● Major challenges remain ● Information unavailable

Trends: ↑ On track or maintaining SDG achievement ↗ Moderately improving → Stagnating ↓ Decreasing ** Trend information unavailable

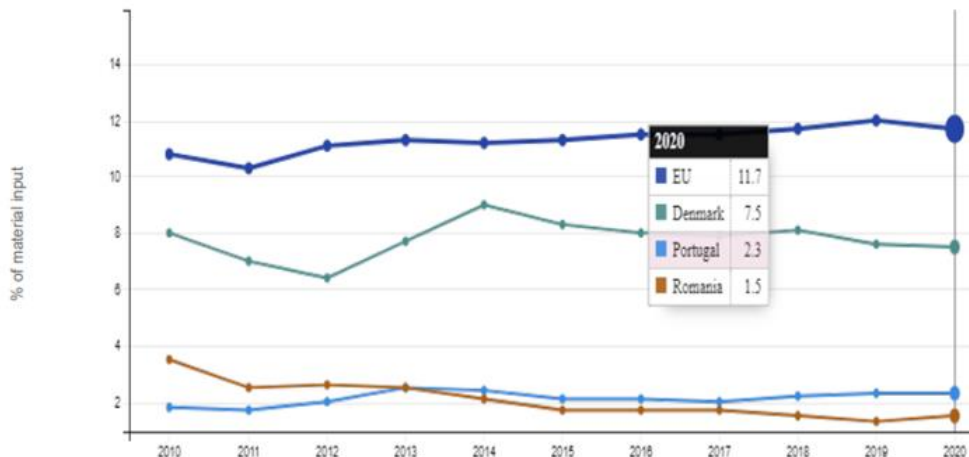
10. WASTE MANAGEMENT AND SDGs

On waste and sustainable consumption (Goal 12), recycling and composting are increasing but the material recovery rate remains below the OECD average (Targets 11.6 and 12.5) and food waste also remains high (Target 12.2).



Circularity rate / Circular material use rate

% of material input



Source: ec.eurostat.eu (2020)

10. WASTE MANAGEMENT AND SDGs

Proportion of municipal waste prepared for reuse and recycling

✓ **GOAL:** By 2025 the preparation for re-use and recycling of municipal waste should **increase to a minimum of 55% by weight, by 2030 to 60% and by 2035 to 65%**, also providing for adjustments in the formulation of the indicator calculation



11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Source: ec.eurostat.eu

10. WASTE MANAGEMENT AND SDGs

- ✓ **1. By 2030** -> reduce the negative environmental impact per capita of cities, including paying special attention to air quality, **municipal waste management** and others;
- ✓ **2. By 2030** -> **reduce waste generation through prevention, reduction, recycling and reuse;**
- ✓ **3 By 2020** -> achieve environmentally sound management of chemicals **and all waste throughout their entire life cycle**, in accordance with agreed international frameworks, and significantly reduce their release into air, water and soil, to minimize its negative impacts on human health and the environment;
- ✓ **4. By 2020** - > protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes – **end landfills;**

11. Green teams – Preparation TR and RO

Creating Waste Management and Donation Concept: After the trainings in Portugal and Denmark, the candidate trainers and pm teams will found a system on how to activate waste management

Online logging file system: Implementation team will be responsible for building up an online system to record the incoming and going waste. In this way, we will be able to measure the results and outputs of SCSF project numerically

Leaflets on waste sorting for houses and institutions, recycling and the effects of donation.

11. Green teams – Implementation TR and RO

Starting Local Trainings: Turkey and Romania will organize local trainings aimed at school parents, learners, beneficiaries and residents of the partner organizations. They will be given by the trainers who attend the LTTs. There will be two sessions on Introduction of the Project and Zero Waste, Collecting, Sorting, Delivering Waste and Disposing-Recycling, and Donation. The local trainings will be performed in the 7th month of the project.

Founding the Waste Management and Donation Centres: During the local trainings, with the help of the municipalities, waste management containers will be placed in a suitable location. (These will be in the school garden or any appropriate place).
In the course of local trainings, foundation of the centre will be initiated

11. Green teams – Implementation TR and RO

In the context of the project, 200 parents and 100 residents of neighboring houses in Turkey and 100 residents and learners in ADEPT in Romania will be involved in the project and be trained about waste management and sorting donation.

These will gain the awareness in green society, importance of recycling.

A network of 24 trainers on European Level with expertise on waste management and sorting developed by the partners within the project and they will be instructors for following local and transnational projects. They will also organize online meetings upon the closure of the project and gain a new field of expertise. At least a total number of 4 trainings on the awareness of waste management, waste sorting methods and donating will be organized; and a total number of at least 400 parents and residents at European level trained on the use of waste center founded in the school and video lesson of them.

1200 participants and beneficiaries will gain European point of view towards waste issue and take action in Zero Waste project and concern about green society.

Waste Conscious Label: On the completion of the project, according to our logging system, we will give "Waste Conscious Label" to the participants involving actively in waste collecting, sorting and delivering for the Waste Centre.

SCSF Website

You can check the SCSF with:

<https://sc-sf.eu>



Contact details

Thank you all

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C4G - Consulting and Training Network

<https://eu.c4g.pt/>