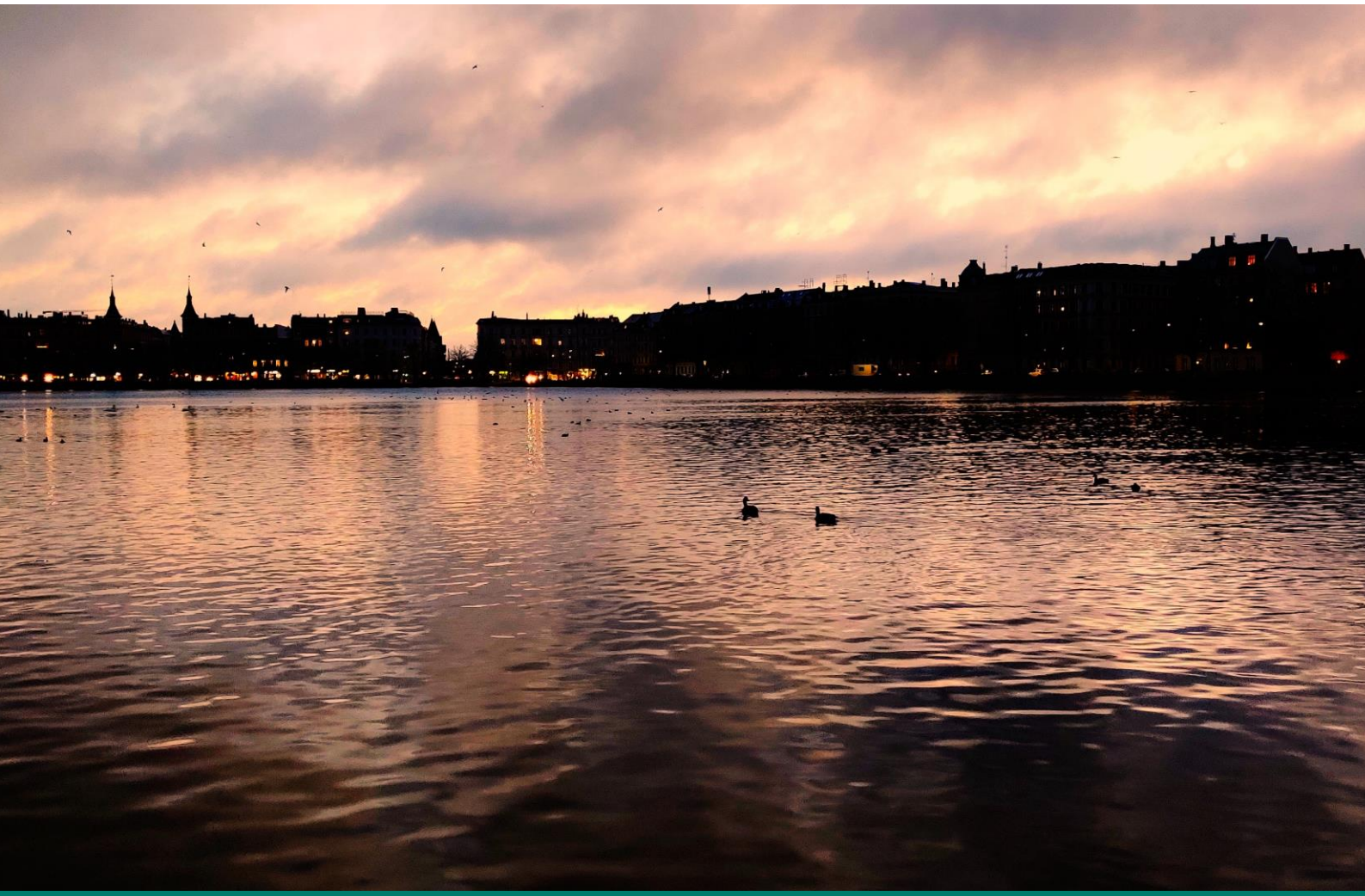
# Circular economy country profile – Türkiye



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European Topic Centre on
Circular economy and resource use
https://www.eionet.europa.eu/etcs/etc-ce

## Contents

## Introduction

The European Commission requested the EEA to produce EU country profiles that offer an updated view of the following elements:

- circular economy policies being implemented at a national level with a particular focus on elements that go beyond EU mandatory elements; and
- best practice with a focus on policy innovation.

Türkiye joined the process of developing country profiles as an EEA Member country.

While implementing the EU Circular Economy Action Plan (CEAP 2020), Member States are encouraged to advance circularity at a national level by adopting policies and initiatives that go beyond EU regulations, while preserving the Single Market.

This circular economy country profile is based on information reported by the Eionet network and, in particular, the Eionet Group on Circular Economy and Resource Use in the second quarter of 2022. The information was reviewed and edited by the European Topic Centre on Circular economy and resource use (ETC CE). A selection of Eurostat data was made to further complement this country profile.

The information is current as of 31 October 2022 (final review), when members of Eionet verified the content of this profile.

## Türkiye – facts and figures

**GDP:** EUR 626.6 billion

**GDP per person:** EUR 7 510 (purchasing power standard)

**Use of materials (domestic material consumption (DMC)) (2019)**
0.9 million tonnes DMC
10.6 tonnes DMC per person

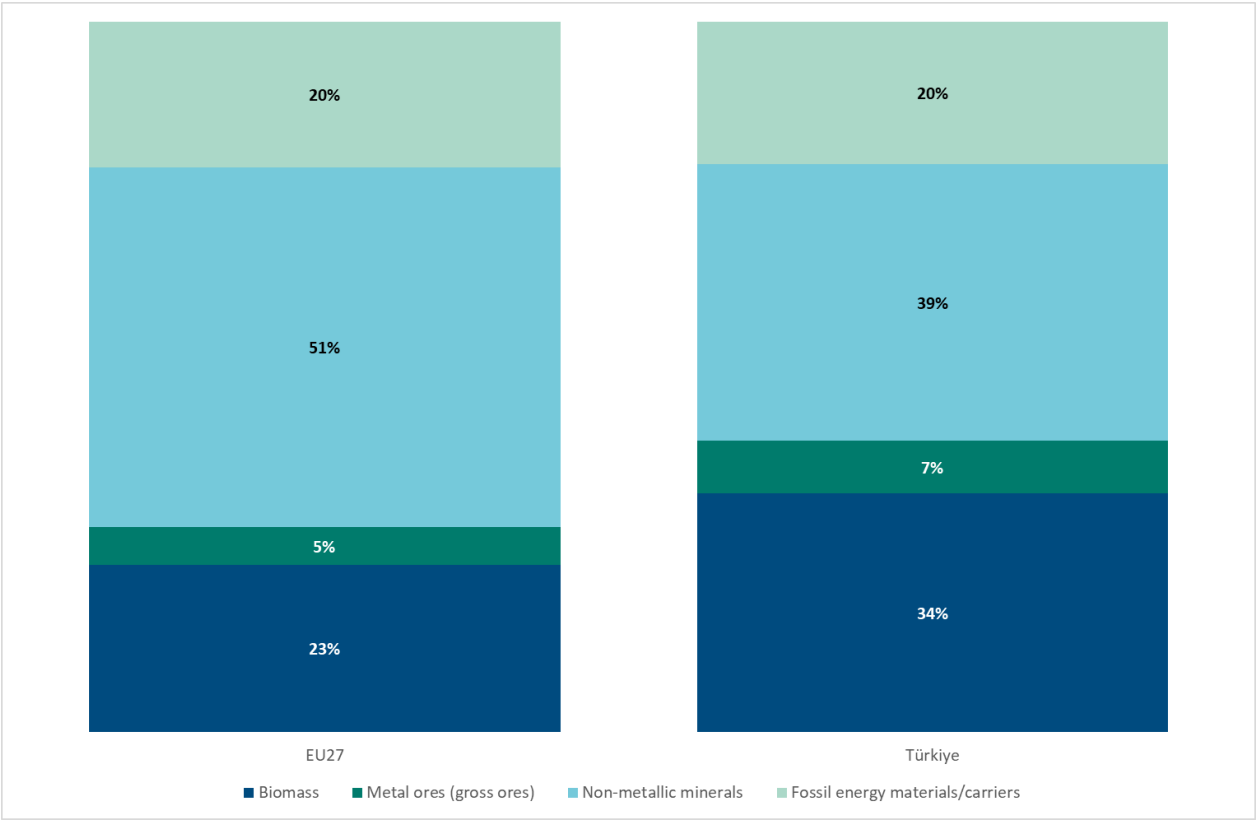
**Structure of the economy:**
Agriculture: 7.5 %
Industry: 31.5 %
Services: 61.0 %

**Surface area:** 780 270 square kilometres

**Population:** 83 154 997

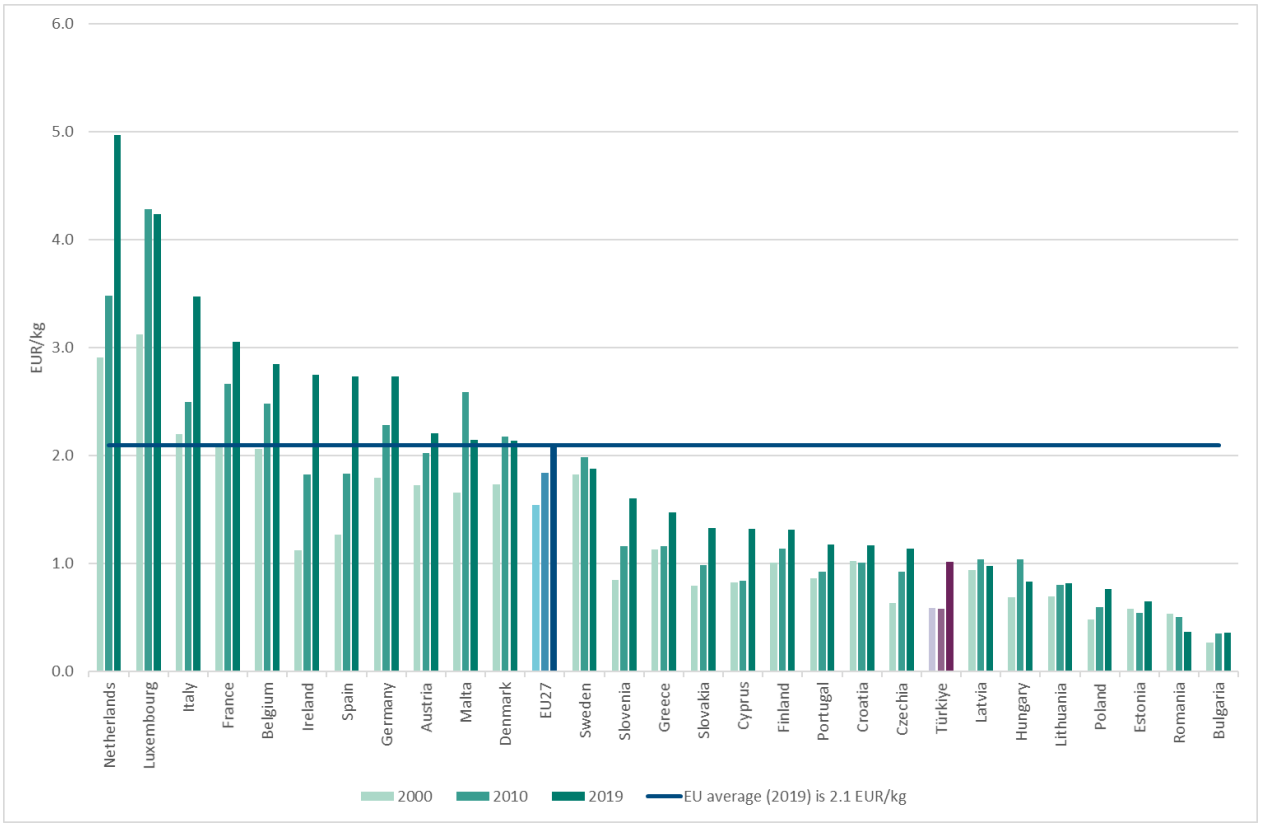
Note: all definitions and metadata used in this profile are taken, as shown, from Eurostat
Source: Eurostat datasets, 2020 (except DMC: 2019) (accessed 20 June 2022)

**Figure 1 Domestic material consumption by selected material category, EU27 and Türkiye, 2019, per cent**



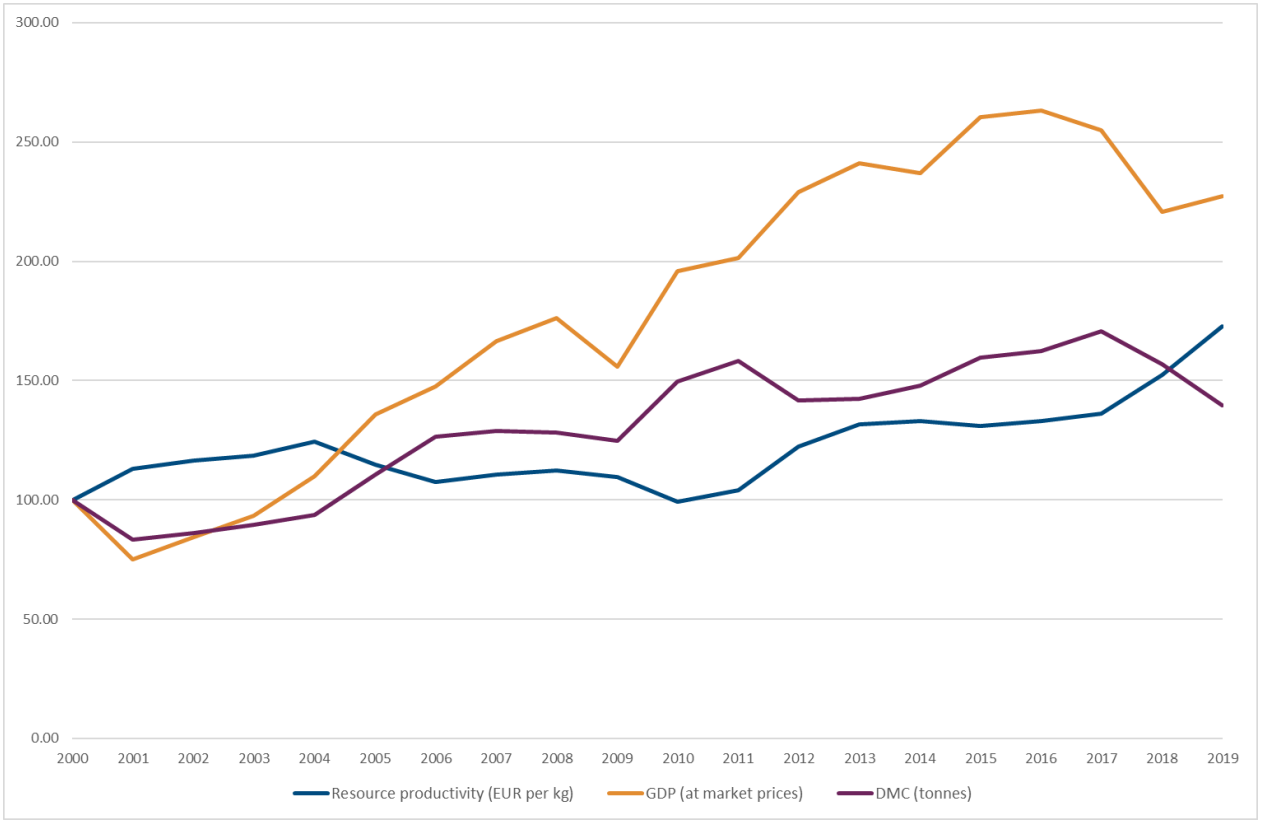

Note: totals may not sum to 100 % due to rounding
Source: Eurostat (2022) [env_ac_mfa] (accessed 20 June 2022)

**Figure 2 Resource productivity (gross domestic product/domestic material consumption), EU and Türkiye, 2000, 2010 and 2019, EUR per kilogram**




Source: Eurostat (2022) [env_ac_rp] (accessed 26 September 2022)

**Figure 3 Gross domestic product, domestic material consumption and resource productivity trends, Türkiye, 2000–2019, index (2000=100)**




Source: Eurostat [env_ac_mfa], [env_ac_rp] & [nama_10_gdp] (accessed 26 September 2022)

## Existing policy framework

### Dedicated strategy, roadmap or action plan for circular economy

Harmonisation of policy development and basic regulation preparation are among the main responsibilities of the Ministry of Environment, Urbanisation and Climate Change (MoEUCC).
The concept of CE was first included in Article 3 – General principles of the Environmental Law when it was amended in 2020. Therefore, at the level of law, the CE took its place in national legislation. In this context, the relevant sub/secondary legislation of the MoEUCC was updated and improvements were made by considering the CE approach.

An EU project on the CE, Technical Assistance for Assessment of Türkiye's Potential on Transition to a Circular Economy (DEEP project) was initiated officially in February 2022. A **National Circular Economy Action and Roadmap will be prepared** and published with the participation of main public institutions. It is planned to be **published in the fourth quarter of 2023.**

Furthermore, there is an ongoing study on the EU Green Deal under the coordination of the Ministry of Trade. The MoEUCC is the main institution responsible for the CE. While there was no elaborated CE policy yet, the MoEUCC has implemented regulations for the use of waste as a resource/raw material/additional fuel, alternative raw materials, byproducts, etc.
In addition shown below, since 2020, Turkiye is implementing its "Turkey's national strategy document on prevention, reduction and monitoring of food loss and waste and its action plan", with the support of the United Nations Food and Agriculture Organization (FAO).

### Circular economy policy elements included in other policies

| Circular economy policy element | Included in policy |
|---|---|
| Wastewater treatment infrastructure to enhance water reuse | Eleventh Development Plan 2019-2023 (sbb.gov.tr) |
| Inclusion of the CE in the food, fishing and agriculture; housing and construction; consumer products manufacturing; and tourism value chains. | Mediterranean Sustainable Consumption and Production Regional Action Plan<br>In preparation:<br>• Action plan for the housing and construction sector to be published in 2022<br>• National Sustainable Consumption and Production Action Plan in the third quarter of 2024 |
| Environmentally-friendly design for energy related products. | Regulation on the Environmentally Responsible Design of Energy-Related Products (in Turkish) |
| Standardised product information for consumers on energy efficiency, consumption of energy and other resources during use, and supplementary information on these products. | Energy Labelling Framework Regulation (in Turkish) |
| The reuse of waste in industry by including it in business processes instead of disposing of it at licensed facilities: waste as raw material. | Communiqué on Waste-Derived Fuel, Additional Fuel and Alternative Raw Materials (in Turkish) |
| Food loss and waste prevention | Turkey's national strategy document on prevention, reduction and monitoring of food loss and waste and its action plan |

## Monitoring and targets

### Assessment of circular economy performance

A **CE monitoring framework and circular indicators will be studied** under the DEEP Project: Technical Assistance for Assessment of Türkiye's Potential on Transition to a Circular Economy, which started in February 2022.

According to the official statistics, Türkiye's wastewater treatment capacity increased as a result of continuous investment and reached a coverage of 89 % of the municipal population with the establishment of 1 176 wastewater treatment plants. The aim is to reach 100 % by 2023, and while completing the wastewater infrastructure, the MoEUCC has also been working on converging from the conventional end-of-pipe treatment to a more resource efficient approach. This will strengthen the implementation process to a circular and green economy.

Accordingly, the MoEUCC plans that wastewater will become an alternative water resource and is carrying out work introduce the reuse of treated wastewater. One of the goals for urban infrastructure, set out in the 11th Development Plan for 2019–2023, is to increase the percentage of treated wastewater reuse. Consequently, planning at the river-basin scale for the reuse of treated wastewater principally for agriculture and reducing pressures on water resources has been identified as a policy. Currently, the wastewater recovery rate in Türkiye is 4.2 % and it is aimed to increase this to 5 % by 2023 and 15 % by 2030.

According to the Sewage Sludge Action Plan, on which preparatory work continues, it is planned that 98 % of the treatment sludge in Türkiye will be used beneficially.

### Circular economy monitoring frameworks and their indicators beyond the ones from Eurostat

- Amounts of raw material extracted, imported and exported;
- Amounts and values of products manufactured, imported and exported;
- Amounts of waste generated, imported and exported;
- Employment and registered companies.

Sources for further information: Turkish Statistical Institute (TURKSTAT)[1] and the National Inventory Report[2]

### Circular economy targets

- Coverage of 100 % of the municipal population with wastewater treatment plants by 2023.
- Increase the wastewater recovery ratio from 4.2 % in 2022 to 5 % in 2023 and to 15 % in 2030.

The Green Deal Action Plan, which is coordinated by Ministry of Trade, has **targets for the CE**. Details will be in National Circular Economy Action Plan that **will be published by the end of 2023**.

1 tuik.gov.tr

2 https://unfccc.int/documents/461926

## Innovative approaches and good practice

### Examples of public policy initiatives (national, regional or local)

➔ *Good practice example: research and innovation*

**Reducing waste in the context of the integrated pollution prevention and control approach**

Türkiye aims to create a new production model for the CE based on sustainability and innovation, in which all waste generated in a production system is re-evaluated, thus saving raw material costs, while providing maximum resource and energy efficiency and environmental benefits. With the **integrated pollution prevention and control (IPPC) approach**, the best techniques available in industry are used to minimise waste generation and ensure the reduction of waste at source, which will also help develop the CE and encourage industrial symbiosis and sustainable consumption and production. Sectoral studies are carried out by the MoEUCC within the framework of the **Industrial Emissions Directive (IED)**, one of the environmental legislation components of the EU's the IPPC approach. With the IPPC approach, to spread the use of the best available techniques and environmental practice in industry, projects on cement production facilities, automotive production facilities, large combustion plants, ferrous and non-ferrous metal production facilities, and the textiles, glass and paper sectors have been carried out by the MoEUCC. Studies were also carried out to determine the sectoral infrastructure needs and compliance status within the scope of the harmonisation of the IED (2010/75/EU) in chemical and mineral industries, waste management and other facilities.

➔ *Good practice example: Change in consumption patterns and consumer behaviour*

**Guides for waste prevention and reduction**

Apart from preparing legislation on alternative raw materials, using waste as a resource, 11 guides on waste prevention and reduction were prepared within the scope of the **Zero Waste project**. These guides have been prepared for many different stakeholders, from citizens to municipalities, from industrial facilities to tourism facilities, and from restaurants to hotels. These guides also aim to inform stakeholders about the basic principles of the CE, such as extending product lifecycles and choosing recyclable products. Social media are also heavily used to inform all stakeholders, especially consumers.

On the topic of food loss and waste prevention, Turkey has started to implement its national strategy document on prevention, reduction and monitoring of food loss and waste and its action plan on 20th of May 2020. The activities began to be carried out under the name of the "Save your food/Gidani Koru" Campaign. Although the action plan covers all related actors and actions to reduce food loss and waste in the food chain, there was a heavy weight to raise awareness and change behaviours of consumers on food waste. The Save Your Food Campaign has broken two Guinness World Records: 1) Most pledges received for an environmental sustainability campaign[3] – 789,522 pledges; 2) Most pledges received for a campaign[4]– 880,749 pledges.

Five guidelines were produced on food loss and waste reduction in Turkish:

1) logistics[5]

[3] https://www.guinnessworldrecords.com/world-records/533865-most-pledges-received-for-an-environmental-sustainability-campaign#:~:text=The%20most%20pledges%20received%20for,food%20wastage%20on%20the%20environment

[4] https://www.guinnessworldrecords.com/world-records/most-pledges-received-for-a-campaign

[5] https://www.tarimorman.gov.tr/ABDGM/Belgeler/Uluslararas%C4%B1%20Kurulu%C5%9Flar/G%C4%B1dan%C4%B1%20Koru%20Lojistik%20K%C4%B1lavuzu.pdf (in Turkish)

2) composting[6]
3) food service sector[7]
4) retail sector[8]
5) consumers[9]

In order to measure the success of the campaign, a pre-test and post-pest was conducted on consumers for a period of a year to measure the starting point and the progress in one year. The results are:

- Consumers started to waste less and during this one year, due to the raised awareness of household food waste, households saved around 80 million USD.
- 20% rise on awareness of date labelling is achieved. Therefore, consumers become more cautious for the meanings of use by and best before dates.
- Regarding to over cooking and over portioning we achieved a 40% decrease.
- 22% rise on recycling food waste.
- 93% of consumers find the campaign useful.
- 84% are more cautious to food waste after they heard about the campaign.

➔ *Good practice example: innovative business models, product-related policies*

**Inclusion of resource efficiency and new circular economy relevant business models in industry**

Studies are carried out by the MoEUCC in line with Sustainable Development Goal (SDG) 12 on "*the implementation of the responsible consumption and production target, to ensure the inclusion of resource efficiency in industry, to encourage the development of environmentally-friendly business models that support the CE and to create policy instruments that support this action*".

➔ *Good practice example: circular economy and climate change*

**More recycling, fewer greenhouse gasses**

In line with the objectives included in national plans such as the National Climate Change Action Plan, one can see that the activities carried out by municipalities regarding waste management serve to reduce greenhouse gasses. The effects of action such as the rehabilitation of unlicensed landfills in the local climate change action plans of municipalities can be seen. As the amount of waste going to landfill is reduced due to recycling in pre-processing facilities, greenhouse gas emissions are reduced as well.

## Examples of private policy initiatives (sectoral)

**Cleaner Production Practices in different sectors including the textiles, leather, cement and automotive industries**

The Cleaner Production Practices in Certain Sectors project was completed in 2018. At the end of the project, applicable clean production techniques, which have very high water consumption and cause less pollution for the textile and leather sectors were determined. In addition, Draft Communiqués have been prepared for the textile and leather industries, as well as for large incineration plants, the cement and automotive industries.

On the other hand, within the scope of the protocol signed by the Ministry with Gebze Technical University in 2021, the **Cleaner Production Practices** in the Textile Industry project was completed. Within the scope

[6] https://www.tarimorman.gov.tr/ABDGM/Belgeler/Uluslararası Kuruluşlar/Gıdanı Koru Kompost.pdf (in Turkish)

[7] gastro-bakanlik-kilavuzu.pdf (tarimorman.gov.tr) (in Turkish)

[8] Gıda Satış Noktalarında Gıda İsrafı ile Mücadele Kılavuzu.pdf - Tarım Bulut (tarimorman.gov.tr) (in Turkish)

[9] https://dosya.tarimorman.gov.tr/app/tr-TR/Dosya/Paylas/TarimBulut/a6cf47f2-d8ed-48b2-bbdf-cb11c94cb531 (in Turkish)

of the project, salt water is reused in fabric dyeing and washing by providing colour removal in wastewater originating from textile dyeing enterprises.

Prototypes have been developed in line with the objectives of the MoEUCC to increase and support the reuse of treated wastewater wherever possible and to expand cleaner production practices throughout the country, especially in the Marmara Sea Basin, where there is a mucilage problem. It is hoped that this will be applied throughout the textile sector and others experiencing similar problems.

In addition, an Action Plan has been prepared to ensure Türkiye's compliance with the European Green Deal. In line with the **Action Plan's objective of establishing a circular and green economy**, clean production legislation has been updated and training programmes on cleaner production practices have been organized in the textile sector, in which water consumption is high,.

## The way forward

### Addressing barriers and challenges

Availability of technologies, availability of infrastructure, cultural obstacles, law and regulatory obstacles, and availability of competencies are the main barriers.
On the other hand, from the policy side, adopting standards on traceability and transparency as well as EU and international standards for data collection and exchange will be essential. This will include the establishment of financial and other incentives, such as sustainable procurement, green procurement, technology innovation, and extended producer responsibility (EPR) schemes that are already in place in Türkiye.

### Ranking types of barrier

| | |
|---|---|
| **High barrier** | Market barriers for recycled resources |
| | Consumer behaviour and awareness |
| **Low barrier** | Companies' ability to grasp opportunities |
| | Institutional challenge to develop policy for a complex sectoral issue |
| | Good indicators and targets |

### Future policy plans

➔ National Circular Action Plan

The Green Deal Action Plan, which is coordinated by Ministry of Trade, has targets on the CE. Details will be in National Circular Economy Action Plan that will be published by the end of 2023.

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