



# 8th Environment Action Programme

Consumption footprint  
(based on life cycle assessment)

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# Consumption footprint (based on life cycle assessment) in Europe

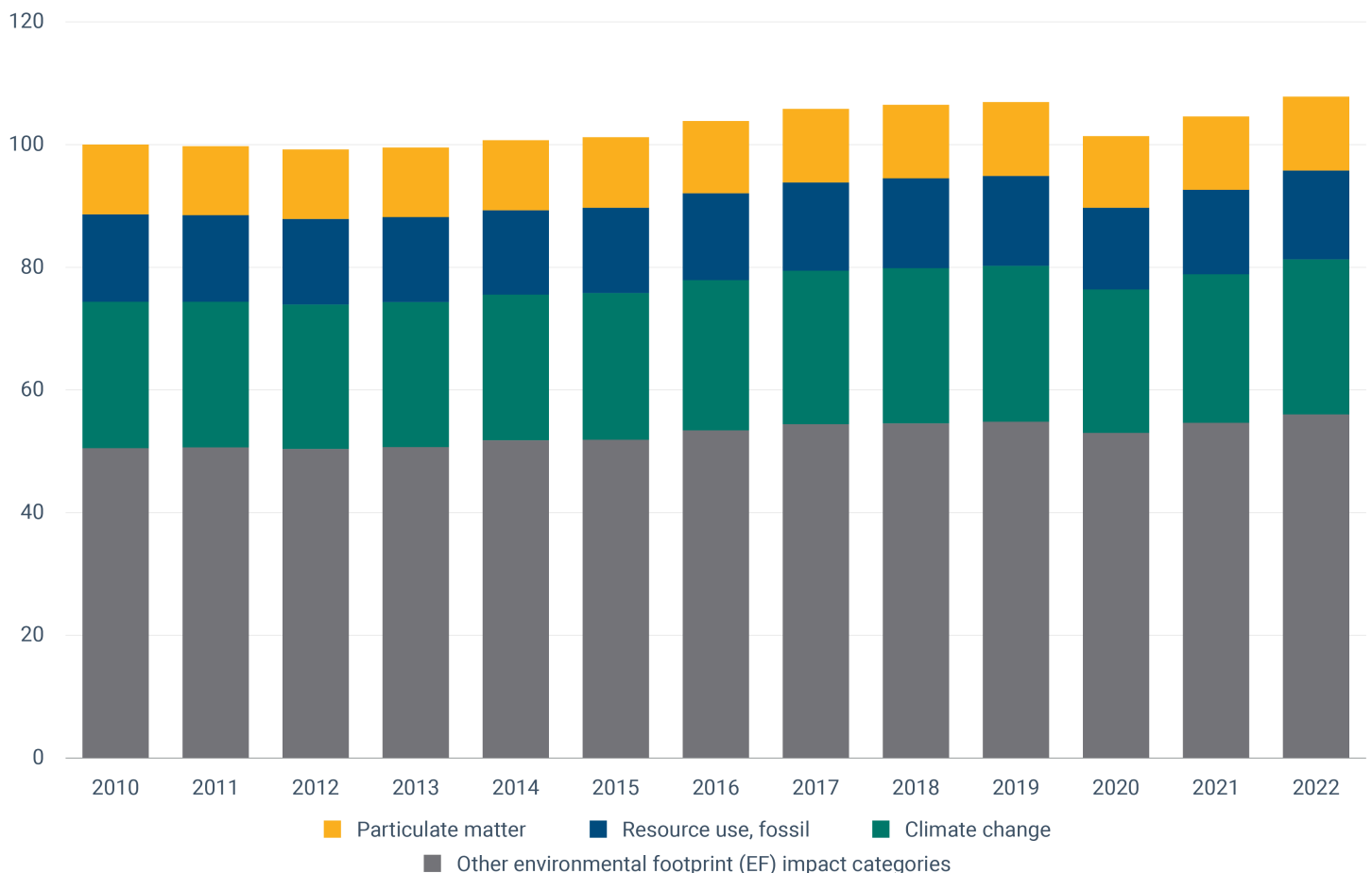
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[Home](#) > [Analysis and data](#) > [Indicators](#) > Consumption footprint (based on life c...

The European Union's 8th Environment Action Programme aims to significantly reduce its consumption footprint by 2030, and keep related environmental impacts within planetary boundaries. These impacts stem from consumption patterns and, depending on production locations, not confined to EU borders. During 2010-2022, the EU consumption footprint increased by around 8% and projections indicate a further increase by 2030, caused by economic growth and consumption patterns. The EU is not presently on track to reduce its consumption footprint sufficiently. Switching to less harmful products and curbing consumption levels are strongly recommended to reach the target.

Figure 1. EU consumption footprint, in a single indexed score (2010=100), broken down into the most significant contributing impact categories of the Environmental Footprint (EF) method, from 2010 to 2022

Index (2010=100)



The [Eighth Environment Action Programme \(8th EAP\)](#) calls for a rapid, significant reduction in the EU's consumption footprint to align with planetary boundaries. To achieve this, the EU must accelerate its transition to adopting a regenerative growth model, to give back to the planet more than it takes, as outlined in the [Circular economy action plan](#).

The Consumption footprint estimates the environmental and climate impacts occurring as a result of EU citizens' consumption of products and their use. The EU consumption footprint indicator methodology<sup>[1]</sup> is based on life cycle assessment (LCA). It uses the [European Commission's environmental footprint method](#) to assess environmental impacts in 16 different categories, such as climate change, resource depletion, and particulate matter. LCA data for a set of representative products are used to calculate environmental impacts per product, irrespective of production location, and scaled up to represent impacts from entire EU consumption, based on consumption statistics. The indicator can be aggregated to give a single score, based on a normalisation and weighting system (represented in Figure 1).

The EU's consumption footprint per capita for the average EU citizen increased, by around 8% in the period 2010-2022 (Figure 1). Gross domestic product (GDP) per capita increased by almost 19% over the same period. This indicates that the impacts of the EU's consumption are growing at a slower pace than its economy, suggesting a relative decoupling of the consumption footprint from economic growth.

However, on a per capita basis, the consumption footprint and GDP still appear to be somewhat correlated (e.g. both declined in 2020 during the economic slowdown from pandemic-related measures). This means that reducing the impacts of EU consumption in absolute terms in a growing economy will be challenging.

In 2022, food consumption contributed the most (49%) to the total environmental impact in the EU, followed by housing (17%) and mobility (16%). The largest contributions to the consumption footprint are those related to climate change (23%), the use of fossil resources (13%) and particulate matter release (11%).

The environmental impact of EU citizens' consumption is considered high overall. Evidence increasingly suggests that, based on current consumption footprint levels, [the EU exceeded its fair share of planetary boundaries for five environmental impact categories](#) in 2022, including particulate matter, climate change and freshwater ecotoxicity<sup>[2]</sup>.

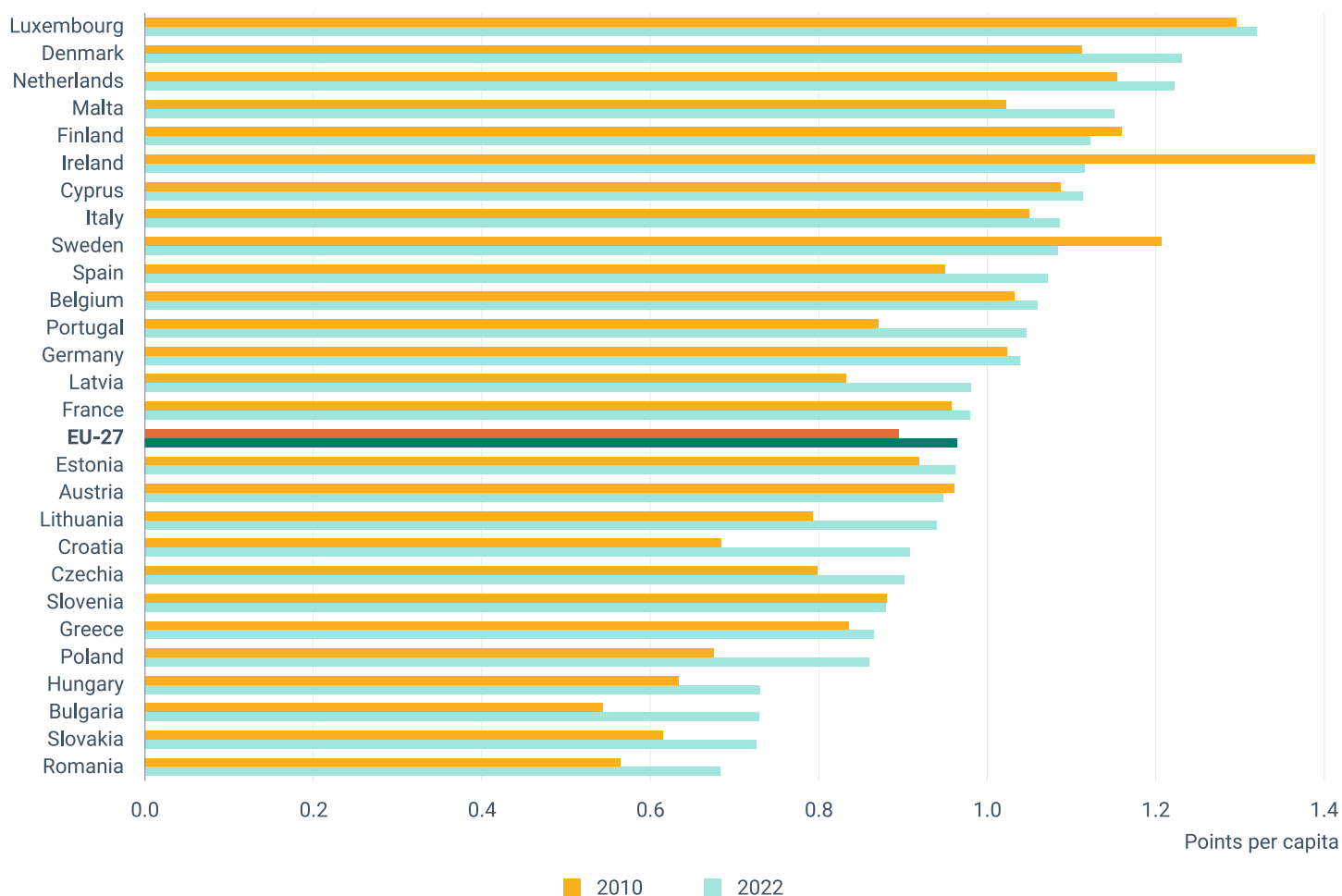
Based on current patterns and expected economic growth, the EU's consumption footprint is projected to increase again by 2030<sup>[3]</sup>. Recent trends show the consumption footprint increased by 6.3% between 2020 and 2022. Therefore, the EU is not on track to meet its aim of significantly reducing this footprint by 2030.

The EU may reduce its consumption footprint by:

- reducing the overall amount of goods and services consumed;
- shifting to the consumption of goods with a lower environmental impact, or;
- a combination of the above.

It is worth noting that service consumption has less of an impact on the environment than the consumption of goods. Adopting circular business models based on sharing or product-as-a-service schemes for example, would be beneficial.

Figure 2. Level of consumption footprint (points per capita) for EU countries in 2022 compared to 2010



In 2022, Luxembourg had the highest consumption footprint among the 27 EU Member States, while Romania had the lowest, at just over half of Luxembourg's. Twelve countries had a footprint lower than the EU average. Between 2010 and 2022, 23 Member States showed increases in their consumption footprints, while only four showed decreases.

Ireland showed the highest decrease of 20%, followed by Sweden with 10%. However, most countries increased their footprint with Bulgaria, Croatia, Poland, Romania and Portugal registering increases higher than 20%. Interpreting these changes in national footprints is challenging. They depend on individual national economic structures and consumption patterns, as well as economic downturns over the 2010-2022 for some Member States. The changes may not be obvious to any concrete measures pursued by the countries to improve, optimise or decrease environmentally-related consumption patterns.

## Supporting information

### Definition

The EU consumption footprint indicator represents a summary of the environmental and climate impacts associated with the EU's consumption of goods and services, regardless of where in the world these goods and services are produced. The indicator is based on consumption statistics and process-based life cycle assessment (LCA) structured in a basket of representative product of main areas of consumption. The assessment includes the 16 impact categories of the European Commission's environmental footprint method <sup>[4]</sup>, which are aggregated into a single weighted score.

## Methodology

Different methodological approaches can be taken to calculating consumption footprints. The two most widely used are the 'top-down' and the 'bottom-up' approaches. The former derives environmental impacts of EU consumption from the observed environmental impacts of economic production, using macro-economic (input-output) modelling. The latter is based on combining macro-scale consumption statistics and LCA data to construct the consumption footprint by focusing on a basket of representative products for a number of consumption areas.

The footprint presented in this indicator is based on the latter methodological approach, as this has been developed by the European Commission's Joint Research Centre. The methodology documents available through the [Consumption Footprint Platform](#) explain the precise method and calculations used to derive this consumption footprint <sup>[5]</sup>.

## Policy/environmental relevance

This indicator is a headline indicator for monitoring progress towards meeting targets of the 8th EAP. It contributes mainly to monitoring progress in relation to aspects of 8th EAP Article 3(s), which requires the following: 'significantly decreasing the Union's material and consumption footprints to bring them into planetary boundaries as soon as possible, including through the introduction of Union 2030 reduction targets, as appropriate' <sup>[6]</sup>. The European Commission Communication on the 8th EAP monitoring framework specifies that this indicator should be used to monitor the EU's progress towards achieving the target to 'significantly decrease the EU's consumption footprint, i.e. the environmental impact of consumption' <sup>[7]</sup>.

## Accuracy and uncertainties

## Data sources and providers

- [EU consumption footprint weighted score](#), Joint Research Center (JRC)

## ▼ Metadata

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### DPSIR

Impact

### Topics

# Sustainability solutions

### Tags

# WST010 # 8th EAP # service consumption # Sustainability # consumption footprint

# EU consumption

### Temporal coverage

2010-2022

## Geographic coverage

Austria	Belgium
Bulgaria	Croatia
Cyprus	Czechia
Denmark	Estonia
Finland	France
Germany	Greece
Hungary	Ireland
Italy	Latvia
Lithuania	Luxembourg
Malta	Netherlands
Poland	Portugal
Romania	Slovakia
Slovenia	Spain
Sweden	

## Typology

Performance indicator (Type B - Does it matter?)

## UN SDGs

SDG12: Responsible consumption and production

## Unit of measure

Figure 1: The EU consumption footprint is shown as a single indexed score (2010=100) and is broken down according to the impact categories of the environmental footprint (EF) method that make the most significant contribution to the consumption footprint – ‘climate change’, ‘resource use, fossil’ and ‘particulate matter’ – and other EF impact categories

Figure 2: Points per capita

Extra figure: Number of times the planetary boundaries are transgressed

## Frequency of dissemination

Once a year

## ✓ References and footnotes

1. Sanye Mengual, E. and Sala, S., 2023, *Consumption footprint and domestic footprint: assessing the environmental impacts of EU consumption and production*, JRC Science for Policy Report, European Commission, Joint Research Centre, Publications Office of the European Union, Luxembourg.  
[↗](#)
2. The EU's consumption footprint is transgressing the planetary boundaries for the environmental footprint categories of particulate matter, freshwater ecotoxicity, climate change and resource use (for both fossil

and mineral and metal resources) (EC, 2023; Sanye Mengual and Sala, 2023).

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3. EC, 2022, 'Zero pollution outlook 2022', *EU Science Hub* ( [https://joint-research-centre.ec.europa.eu/scientific-activities-z/zero-pollution-outlook-2022\\_en](https://joint-research-centre.ec.europa.eu/scientific-activities-z/zero-pollution-outlook-2022_en) ) accessed July 5, 2023.  
↵
4. EU, 2021, Commission Recommendation (EU) 2021/2279 of 15 December 2021 on the use of the environmental footprint methods to measure and communicate the life cycle environmental performance of products and organisations, OJ L 471, 30.12.2021, p. 1-396.  
↵
5. EC, 2023, 'Consumption Footprint Platform – EPLCA', *European Commission* ( <https://eplca.jrc.ec.europa.eu/ConsumptionFootprintPlatform.html> ) accessed February 1, 2023.  
↵
6. EU, 2022, Decision (EU) 2022/591 of the European Parliament and of the Council of 6 April 2022 on a general Union environment action programme to 2030, OJ L 114, 12.4.2022, p. 22-36.  
↵
7. EC, 2022, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the monitoring framework for the 8th Environment Action Programme: measuring progress towards the attainment of the programme's 2030 and 2050 priority objectives, COM (2022) 357 final of 26 July 2022.  
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