

# Waste management country profile

with a focus on municipal and packaging waste

# Croatia

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## Key messages

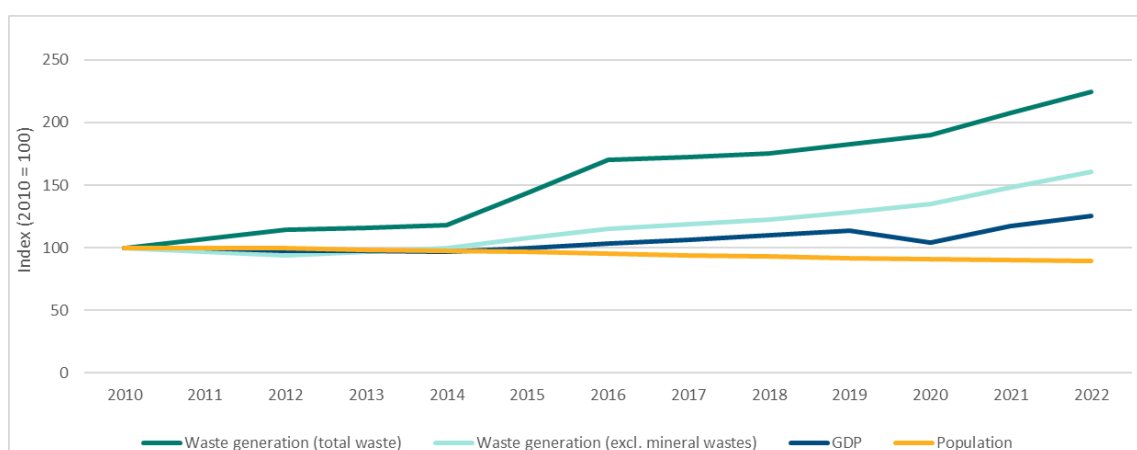
- The total amount of waste generated in Croatia has increased significantly in the last 12 years, and there is no indication of a decoupling between economic growth and waste generation.
- Croatia has to speed up its progress towards reaching the 2025 municipal waste recycling target, the 2025 packaging waste recycling target and the 2035 landfill target.
- Croatia has made continuous progress in increasing the preparing for reuse and recycling rate of municipal waste at the expense of landfilling over the past decade, but significantly more efforts are still required to meet the targets of 2025 and 2035.
- For packaging waste, Croatia has made no progress in improving its recycling rate since 2012, and more efforts are needed to meet the 2025 packaging waste recycling targets for both total packaging and all packaging materials except wooden packaging.
- In order to improve recycling performance, Croatia needs to improve the collection of bio-waste, and to improve the existing systems for separate collection and pay-as-you-throw schemes.

## Trends in waste generation and treatment

### Total waste generation

The total amount of waste generated in Croatia has increased significantly in the last 12 years (Figure 1). This trend is primarily driven by major mineral wastes. Waste excluding major mineral wastes increased as well but much less than total waste and this trend was largely driven by an increase in . recyclable wastes. Croatia's GDP increased throughout the considered period, with a drop in 2020, most likely due to the Covid-19 outbreak. No decoupling between waste generation and economic growth can be observed.

**Figure 1 Generation of waste (total and excluding major mineral wastes), population and economic development, 2010-2022**



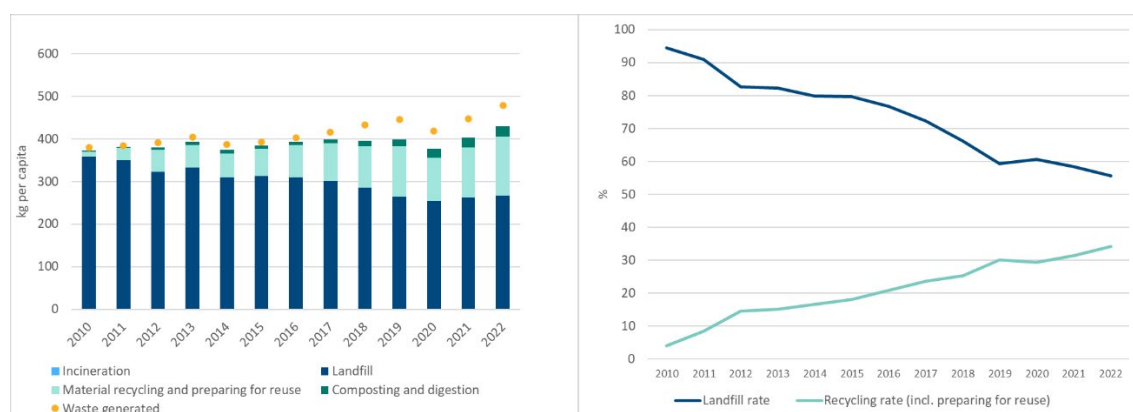
**Source:** Eurostat (2024a, 2024b, 2024f)

**Note:** Waste generation data for odd years are interpolated.

## Municipal waste

Croatia's municipal waste generation remained relatively stable over the past decade but increased since 2019 (Figure 2, left). In 2022, Croatia generated 478 kg/cap of municipal waste, which is slightly below the (estimated) EU-27 average of 513 kg/cap.

**Figure 2 Municipal waste management (left) and rates of recycling (incl. preparing for reuse) and landfill (right), 2010-2022**



**Source:** Eurostat (2024d)

**Note:** As of the reference year 2020, new reporting rules apply for calculating recycled municipal waste pursuant to the targets laid down in Article 11.2(c-e) of Directive 2008/98/EC. However, it is unclear based on the information available whether these new reporting rules have been implemented in Croatia yet.

Although the preparing for reuse and recycling rate has significantly and continuously increased since 2010, reaching 34% in 2022 (Figure 2, right), it is still significantly below the (estimated) EU-27 average of 49% and the 2025 target. The amount of bio-waste composted or digested is still at a very low level, given that more than a third of Croatia's residual municipal waste is bio-waste (ETC/CE, 2022).

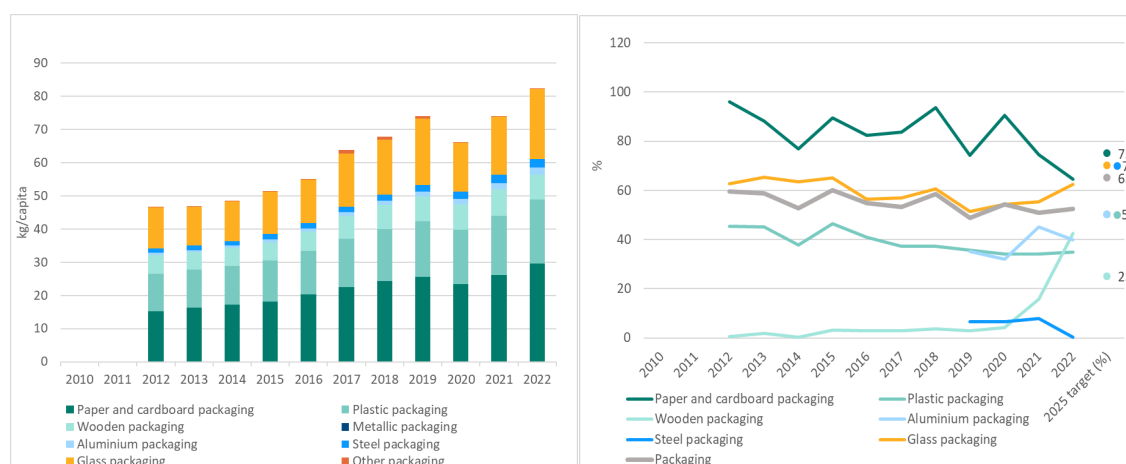
Croatia has also reported data to show compliance with the preparing for reuse and recycling target of 55% for 2025, as laid down in the Waste Framework Directive. The difference between these (provisional) data and the data shown in Figure 2 (voluntary reporting) is below 1 percentage point for the preparing for reuse and recycling rate, both in 2021 and in 2022. The 2022 data according to this reporting obligation are still awaiting validation by Eurostat (Eurostat, 2024c).

Even though the landfill rate has decreased significantly in the last decade due to major investments (EC, 2023), the landfill rate remains high, at 56% in 2022 (Figure 2, right) (EC, 2023). Croatia has no incineration capacity for municipal solid waste, but it is planned to enable interested entities to develop energy recovery from waste projects in response to Croatia's Energy Development Strategy until 2030 (Croatian Ministry of Environmental Protection and Green Transition, 2024).

## Packaging waste

Packaging waste generation in Croatia has significantly increased from 47 kg/cap in 2012 to 82 kg/cap in 2022. However, this is still significantly below the (estimated) EU-27 average of 186 kg/cap for the same year <sup>(1)</sup>, and the second lowest among all EU-27 Member States.

**Figure 3 Packaging waste generation (left) and recycling rates (right), 2010-2022**



**Source:** Eurostat (2024e)

**Note:** There are no data available for the years 2010 and 2011. As of the reference year 2020, the rules for calculating recycled packaging waste have changed, pursuant to Article 6a of Directive 94/62/EC. However, it is unclear based on the information available whether these new reporting rules have been implemented in Croatia.

In 2022, the recycling rate for packaging waste in Croatia was 52%, which is significantly below the (estimated) EU-27 average of 65% for the same year. The overall packaging waste recycling rate has a slightly decreasing trend, however, there seem to be data quality issues (EC, 2023). The recycling rate is mainly driven by paper and cardboard packaging recycling, as it is the largest packaging waste fraction combined with a high recycling rate. The recycling rates for paper and cardboard and plastics show a decreasing trend, while they have increased for wooden packaging. Since 2019, Croatia has reported steel and aluminium packaging separately. In 2022, the recycling rates of both fractions were significantly below the 2025 targets. Steel packaging recycling was very low in 2022 because of technical issues in a recycling facility and the collected waste was processed in 2023 instead. Recycling of wooden packaging increased due to organisational improvements in the Extended Producer Responsibility (EPR) system (Croatian Ministry of Economy and Sustainable Development (MESD), 2024). There is a possible underestimation of the amount of packaging waste generated, which is likely due to underreporting of packaging placed on the market, resulting in overestimating the effective recycling rate and affecting EPR (ETC/CE, 2022).

<sup>(1)</sup> The EU-27 average might be influenced by the situation that not all Member States already fully apply the reporting rules for packaging waste as defined in the Commission Implementing Decision 2019/665.

## Policies in place to encourage waste prevention measures and to increase recycling

### *Legislative framework and waste management plans*

Overall, the Croatian waste legislation follows the EU waste legislation. The main acts and regulations regarding municipal waste and packaging waste include the Waste Management Act, Ordinance on Waste Management, Regulation on the Management of Waste Packaging, Ordinance on Packaging and Packaging Waste, Single-use Plastic Products and Fishing Gear Containing Plastics, Decision on the Areas of Collection of Non-hazardous Packaging Waste, Ordinance on the Management of Waste Textiles and Waste Footwear, and Ordinance on Landfills (ETC/CE, 2022).

Croatia's new waste management plan for 2023 to 2028 was adopted in 2023. (The Ministry of Economy and Sustainable Development, 2023)

The drafting of the *Regulation on waste management fee and deposit refund fee*, which the Government of the Republic of Croatia will adopt in the last quarter of 2024, is underway. This Regulation will reorganise the existing system of fees that producers pay to the Environmental Protection and Energy Efficiency Fund as part of their EPR obligation, for placing packaged products on the market in the Republic of Croatia. It will further enable the Fund to adopt new fees that the Fund pays for the collection and recovery/recycling of packaging waste. The new fee system, including the eco-modulation criterion, is planned to improve the existing packaging waste management system and to ensure the achievement of packaging waste goals. (Croatian Ministry of Environmental Protection and Green Transition, 2024)

### *Waste prevention policies*

Croatia's current National Waste Prevention Programme (NWPP) is integrated in the National Waste Management Plan (NWMP) for 2023-2028, with goals until 2035 (EEA, 2023). The new NWPP mentions that the evaluation of the programme should take place every sixth year (according to article 109 of the Waste Management Act), though it seems that no evaluation of the previous NWPP has taken place. The NWMP includes a budget for the implementation of the measures including the planned waste prevention measures (The Ministry of Economy and Sustainable Development, 2023).

The overall objective of the NWPP is to establish a waste management system based on waste prevention. The objectives of the current NWPP connected to waste prevention are:

- to decouple the increase in waste from economic growth,
- to protect natural resources, and
- to reduce the impact on human health and the environment.

Specific objectives and priority waste streams have been selected primarily based on the following criteria:

- the proportion of individual waste streams in the total generated waste during the previous planning period,
- the environmental, societal, and economic benefits of waste prevention for certain waste streams,

- the potential to prevent specific products from becoming waste, and
- the existing objectives, measures, and ongoing activities that will be implemented in this reference period.

The priority waste streams for prevention are municipal waste, organic waste, waste electrical and electronic equipment, paper and cardboard waste, plastic waste, construction waste, textile and footwear waste, and preventing the generation of marine litter.

While the previous National Waste Management Plan contained a quantitative target to reduce municipal waste (EEA, 2023), such a target is not included in the NWMP 2023-2028.

Moreover, the food waste reduction and prevention plan was established in cooperation with relevant actors, containing measures and activities addressing the entire food value chain. The first food waste reduction and prevention plan was in force for the period 2019-2022, and a new plan was adopted for the period 2023-2028 (Government of the Republic of Croatia, 2022). Measures include:

- drafting sectorial guidelines for food waste reduction,
- promoting short supply chains,
- a platform to share experiences and best practices,
- voluntary agreements with stakeholders to reduce food waste,
- criteria for the most successful food waste fighters and an award ceremony,
- the development of educational materials for children, and
- providing financial support to research projects on food waste.

There is no single policy document on circular economy in Croatia, but a wide range of Croatian national strategies that might have a potential for pushing circular economy approaches.

According to 2021 data reported to the EEA according to Commission Implementing Decision (EU) 2021/19 (EEA, 2024), Croatia reused:

- 2350 tonnes of textiles,
- 7167 tonnes of electrical and electronic devices,
- 11492 tonnes of furniture,
- 168711 tonnes of construction materials, and
- 9177 tonnes of other products/materials.

It should be noted that these data have been reported for the first time. As the reporting process matures, it is expected that these data will strengthen but for now, caution is advised in drawing insights from the dataset. More information about the interpretation and limitations of the dataset is available (EEA, 2024).

### ***Policies to encourage separate collection and recycling***

Residual waste is collected door-to-door. Paper and cardboard, metals, plastic and glass packaging are collected door-to-door and via bring points. Textiles are collected via bring points. Bio-waste is collected door-to-door, but not in all municipalities. Wood waste as well as all other recyclable household waste is collected at civic amenity sites (ETC/CE, 2022).

Separate collection of recyclables originating from businesses and companies is mandatory. Separate collection of packaging waste both from households and non-households is mandatory as well. (ETC/CE, 2022)

Croatia has implemented a widely rolled-out pay-as-you-throw scheme, primarily based on container volume and collection frequency (ETC/CE, 2022).

In Croatia, Extended Producer Responsibility (EPR) applies to all household, industrial and commercial packaging for all packaging fractions. Croatia has no advanced fee modulation, i.e. a fee modulation beyond the broad material categories (e.g., higher fees for difficult-to-recycle plastic types or combinations of materials). Croatia has EPR fees for different packaging materials, but no packaging taxes in place (ETC/CE, 2022).

Croatia implements mandatory deposit-return systems for most aluminium drink cans, glass and plastic (PET) drink bottles. For plastic crates and wooden packaging, there are no deposit-return systems (ETC/CE, 2022). From 1 January 2027, multi-layer (composite) packaging with a predominantly paper-cardboard component (e.g. Tetra Pak) and other non-PET plastic packaging (e.g. HDPE packaging) will be included in this system. Also, from the mentioned date, the system is extended to packaging with a volume of fewer than 0.2 litres, so in this sense, the system will cover all beverage packaging with a volume of up to 3 litres. (Croatian Ministry of Environmental Protection and Green Transition, 2024)

While separate collection systems, pay-as-you-throw and EPR for packaging are in place, they seem to not work optimally yet.

### ***Policies and instruments to discourage landfilling or incineration***

Croatia has currently no landfill tax, no tax on waste incineration and no ban on landfilling (ETC/CE, 2022). A Regulation introducing a landfill tax is currently being prepared. It is expected to be published by the end of 2024 (Croatian Ministry of Environmental Protection and Green Transition, 2024).

## **Prospects for meeting the targets on recycling and landfilling**

According to the EEA's early warning assessment (ETC/CE, 2022), Croatia has to speed up its progress towards reaching the 2025 target for the preparing for reuse and recycling municipal waste of 55%, the 2025 target for packaging recycling of 65%, and the 2035 target to reduce landfill to 10% of the generated municipal waste. Priority recommendations by the Commission's Environmental Implementation Review (EIR) are to improve and extend the separate collection of waste, to establish minimum service standards for separate collection, to support municipalities for organising separate collection, to improve the functioning of Extended Producer Responsibility (EPR) systems, and to introduce landfill taxes (EC, 2022). The European Commission issued a number of policy recommendations to improve Croatia's waste management performance (EC, 2023):

- Support preparing for reuse of municipal waste and reuse systems for packaging.
- Impose restrictions on the landfilling of all waste that is suitable for recycling and introduce taxes on landfilling. This should incentivise municipalities to be more effective in sorting, collecting, and recycling waste.

- Address the data quality issues concerning packaging waste generated.
- Further develop waste treatment infrastructure associated with the higher steps of the waste hierarchy (such as increasing capacity for treating bio-waste and supporting home composting).

Croatia continuously improved its preparing for reuse and recycling rate to 34% in 2022 and decreased landfilling to 56%, but there is still a large gap towards the 2025 recycling targets and the 2035 landfill target. This means that significantly more efforts are required to further divert municipal waste from landfilling to preparing for reuse and recycling. For packaging waste, Croatia has made no progress in improving its recycling rate since 2012, and more efforts are needed to meet the 2025 packaging waste recycling targets for both total packaging and all packaging materials except for wooden packaging.

Meanwhile, Croatia has decided to postpone the deadlines for meeting the 2025 targets for municipal waste, glass packaging and plastic packaging for 5 years, making use of the postponement options in the Waste Framework Directive and Packaging and Packaging Waste Directive.

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