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EUROSTAT

Directorate E: Sectoral and regional statistics
Unit E-2: Environmental Statistics and Accounts; Sustainable Development

30 June 2022

Template for the Quality Report
on Waste Statistics for the reference year 2020

1   Heading (QR_WASTE_HR_2020_1)

Part I: Description of the data

2   Identification

Country name **Croatia**

Reference year **2020**

Description of data set(s) delivered

Data set 1: Waste generation by waste category (EWC-STAT) and economic activities (NACE), tonnes/year

Data set 2: Waste treatment by waste category (EWC-STAT) and treatment category, tonnes/year

Data set 3: Number and capacity of recovery and disposal facilities (per NUTS 2 region) and population served by collection scheme (national)

Transmission date **30 June 2022**

3   Contact information on the person(s) responsible for the quality of waste statistics

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4   Description of the parties involved/sources used in the data collection

Table 1: Institutions involved and distribution of tasks

Name of institution	Description of key responsibilities
Ministry of Economy and Sustainable Development (MESD) / Institute for Environment and Nature	Collects, checks, processes and delivers (submits) data according to Waste Statistics Regulation. Maintains the Waste Management Information System: Environmental Pollution Register (EPR), Waste Management Permits Register (WMPR), Central Management System for the Data on Landfills of Waste, Database on transboundary movement of waste, etc. Up to 1st of January 2019, the Institute operated as Croatian Agency for Environment and Nature (CAEN).
Ministry of Economy and Sustainable Development (MESD) / Directorate for Environmental Impact Assessment and Sustainable Waste Management	Responsible for issuing the permits for hazardous waste management and permits for thermal treatment of non-hazardous waste. Maintains the End-of-Waste Register.
The 20 county offices and office of the City of Zagreb	Quality check of reported data to EPR in terms of their completeness, consistency and credibility. Responsible for issuing the permits that are not covered by MESD/Directorate.

	Maintains registers for carrying out waste management operations - Register of Waste Carriers, Register of Waste Management Brokers, Register of Waste Dealers, Register of Recycling Yards and Register of Persons Dealing with Energy Recovery from Waste. Also, maintains the Register of By-Products.
Environmental Protection and Energy Efficiency Fund (EPEEF)	Collects detail data on special waste categories (packaging waste, waste tyres, waste oils, waste batteries and accumulators, end-of-life vehicles, waste electric and electronic equipment, waste containing asbestos, etc.) according to special ordinances.
Ministry of Agriculture	Collects data on animal by-products.

Ministry of Economy and Sustainable Development / Institute for Environment and Nature (MESD/Institute) operated as Croatian Agency for Environment and Nature (CAEN) up to 1st of January 2019. Its main activity is the collection and compilation of data and information about the environment and nature, in order to ensure and monitor the implementation of environmental policy and nature, sustainable development and the performance of professional activities related to the protection of the environment and nature. By the Environmental Protection Act (OG No 80/13, 153/13, 78/15, 12/18, 118/18) it is appointed as central information authority of the Republic of Croatia for coordinating reporting and reporting to the European Commission on the implementation of specific environmental protection regulations, including waste. It is responsible for maintaining the Waste Management Information System, enabling and facilitating access to information on waste to decision-makers and general public, developing reports on the status of the waste sector on the national and international level. In 2012, through an agreement with Croatian Bureau of Statistics (CBS), responsibilities for the preparation and submitting of data according to WSR to Eurostat were transferred to the CAEN (MESD/Institute). Data on Waste Statistics for the reference year 2010 and previous years were delivered by the CBS.

By the Act on Sustainable Waste Management (OG No 94/13, 73/17, 14/19, 98/19) and subordinate legislation, MESD/Institute is collecting waste data such as: annual data on produced, collected, treated waste (on-line database); data on waste management permits and certificates (on-line database); data on landfills (on-line database); data on transboundary shipment of waste; data on waste management plans (on-line database) etc.

Ordinance on Environmental Pollution Register (OG No 87/15) stipulates the maintaining of database The Environmental Pollution Register (EPR). It contains annual data on waste generators (≥ 0,5 t hazardous and/or ≥ 20 t non-hazardous), all waste collectors and all waste treatment facilities. Electronic software (application) is used for accessing and maintaining the EPR and it enables network data entry, data processing and displaying of data reported in the EPR.

Waste Management Permits Register (WMPR) database contains information and documents on waste management permits (for hazardous, non-hazardous and municipal waste). Registers for carrying out waste management operations contains Register of Waste Carriers, Register of Waste Management Brokers, Register of Waste Dealers, Register of Recycling Yards and Register of Persons Dealing with Energy Recovery from Waste.

According to the Act on Sustainable Waste Management (OG No 94/13, 73/17, 14/19, 98/19) all landfill operators are obliged to report data on landfills twice a year into the Central Management System for the Data on Landfills of Waste. Database contains general data on technical measures on landfills, data on rest capacities, data on environmental protection measures carried out on landfills, data on status of landfill activity and remediation, data on landfilled amounts of biodegradable waste, data on total amounts of waste landfilled etc. Data collected in this database are used for cross-checking data reported to EPR.

Transboundary Waste Shipment Database (TWSD) contains data from decisions for transboundary shipment of waste, which is subject to notification procedure and data from yearly reports on quantities and

types of shipped waste by importers and exporters of waste. According to the Act on Sustainable Waste Management (OG No 94/13, 74/17, 14/19, 98/19) importers and exporters of waste are obliged to submit yearly report on quantities and types of shipped waste to the MESD/Institute.

The Environment Protection and Energy Efficiency Fund (EPEEF) is responsible for organizing and monitoring systems for management of special waste categories, as well as remediation of official landfills. According to the ordinances, which stipulate the management of special waste categories, EPEEF collects detailed data on these waste categories. Data collected by EPEEF are used for cross-checking data reported to EPR.

According to Regulation (EC) No 1069/2009 and Regulation (EC) No 142/2011 Ministry of Agriculture, Directorate for Veterinary and Food Safety maintains registers for carrying out anaerobic digestion and incineration of animal by-products. By entering into force of the new Act on Sustainable Waste Management (OG NO 94/13) in 2013, those facilities are also obliged to obtain permits according to the mentioned Act. Hence, data on animal by-products, including data on processed products, which are destined for incineration, landfilling or use in a biogas or composting plant, from 2013 onwards should be reported to Waste Management Information System maintained by MESD/Institute.

Data set 1:   Waste generation by waste category (EWC-STAT) and economic activities (NACE), tonnes/year

General description of methodology

Table 2: Description of methods for determining waste generation

Waste Item	Source 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1																			pink
2																			pink
3																			pink
4																	green		pink
5																			pink
6																	green		pink
7																			pink
8																			pink
9																			pink
10																			pink
11																			pink
12																	green		pink
13																purple			pink
14																purple			pink
15																purple	olive	olive	pink
16																purple	olive		pink
17																			pink
18																	olive		pink
19																	green		pink
20																purple	olive		pink
21																purple	olive		pink
22																			pink
23																			pink
24																purple			pink
25																			olive
26																			olive
27	red																		green
28	red																green		green
29																	green		pink
30																	green		pink
31			orange														orange		pink
32																	green		pink
33	orange																		pink
34	purple	purple	purple	purple	purple	purple	purple	purple	purple	purple	purple	purple	purple	purple	purple	purple	gray	purple	gray
35																			pink
36																purple			pink
37																			pink
38																			pink
39																			pink
40																red			pink
41																red			pink
42		purple																	pink
43		purple														purple			pink
44																			pink
45																			pink

Waste Item	Source																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
46																███			▒
47																███			▒
48																			▒
49																			▒
50																			▒
51																			▒

	Data reported by waste producers/holders into the database EPR
	Data reported by waste collectors into the database EPR
	Combination of the data reported by waste producers/holders and waste collectors into the database EPR
	Combination of the data reported by waste producers/holders and waste treatment facilities into the database EPR
	Combination of the data reported by waste treatment facilities into the database EPR and data collected by Ministry of Agriculture
	Combination of the data reported by waste producers/holders and waste treatment facilities into the database EPR and data on transboundary movement of waste
	Data reported by waste producers/holders, waste collectors and waste treatment facilities + estimations
	Data reported by waste producers/holders + estimations
	Estimation

Table 3: Description of classifications used

	Name of classification(s) used	Description of the classification(s) (in particular compatibility with WStatR requirements)
Economic activities	NACE Rev. 2.	Directly compatible with WStatR requirements
Waste types	List of Waste (LoW)	Converted into EWC – Stat /Version 4 classification with conversion key (Commission Regulation 574/2004/EC amending Annexes I and III to Regulation 2150/2002/EC)
Recovery and treatment operations	R&D codes	In line with Waste Framework Directive (2008/98/EC) and WStatR

Determination of waste generation by (sample) survey

N/A (Not Applicable).

Determination of waste generation in the economy on the basis of information on waste treatment

- <u>Used oils (code 01.3), Chemical wastes (code 01.4, 02, 03.1) and Health care and biological wastes (code 05) – in NACE sections G – U excl. 46.77</u> combination of data reported by waste producers/holders and waste treatment facilities were used. The difference in quantities reported by waste treatment facilities and waste producers/holders were taken into consideration. By checking the coverage of the companies that reported data into the EPR, it was determinate that there are significant number of small enterprises, which do not exceed the annual threshold of 500 kg of hazardous waste, so they are not obliged to report data into the EPR. Therefore, the above-mentioned difference was added to those NACE sections G – U excl. 46.77.

- <u>Metallic wastes, ferrous (code 06.1) and non-ferrous (code 06.2) – in NACE section F</u> the combination of data reported by waste producers/holders and estimations were used. Amounts produced by construction and demolition activities, which were reported in all economic sections except in section F, were allocated to section F.

- <u>Metallic wastes, mixed ferrous and non-ferrous (code 06.3) – in NACE section F</u> the combination of data reported by waste producers/holders and estimations were used. Additionally, amounts produced by construction and demolition activities, which were reported in all economic sections except in section F, were allocated to section F.

- <u>Glass wastes (code 07.1), Plastic wastes (code 07.4) and Wood wastes (code 07.5) – in NACE section F</u> the combination of data reported by waste producers/holders and estimations were used. Amounts produced by construction and demolition activities, which were reported in all economic sections except in section F, were allocated to section F.

- <u>Rubber wastes (code 07.3) – in NACE sections G – U excl. 46.77</u> the combination of data reported by waste producers/holders and waste treatment facilities were used. The difference in quantities reported by waste treatment facilities and waste generators were taken into consideration. It was not possible to distinguish quantity of rubber wastes, which originate from class 46.77, households and services sector, so the sections G – U excl. 46.77 include amounts from services sector and amounts from households and class 46.77. By checking the coverage of the companies that reported data into the EPR, it was determinate that there are significant number of small enterprises, which do not exceed the annual threshold of 500 kg of hazardous waste, so they are not obliged to report data into the EPR. Therefore, the above-mentioned difference was added to those NACE sections G – U excl. 46.77.

- <u>Waste containing PCB (code 07.7) – in NACE section F</u> the combination of data reported by waste producers/holders and estimations were used.

- <u>Discarded vehicles (code 08.1) – in NACE sections G – U excl. 46.77 and HH (households)</u> data reported by waste producers/holders and waste treatment facilities. This assumption was made based on the information on origination of discarded vehicles provided by waste treatment facilities. <u>In NACE section A</u> the estimations were used. According to the information given by one big waste collector in Croatia, only 1% originates from Agriculture, hunting and forestry.

- <u>Batteries and accumulators wastes (code 08.41) – in NACE sections G – U excl. 46.77</u> the combination of the data reported by waste producers/holders and waste treatment facilities were used. The difference in quantities reported by waste treatment facilities and waste generators were taken into consideration. The difference between those sources were added to services sector

although part of the amount possible may originate from households. It was not possible to distinguish precise shares from commerce and households.

- Animal and mixed food waste (code 09.1) – in NACE section C10 – C12 data on animal tissues were determinate on the basis of data reported by biogas plants to the Ministry of Agriculture and data reported into the database EPR. In NACE sections G – U excl. 46.77 the combination of the data reported by waste producers/holders, waste treatment facilities and data by Ministry of Agriculture were used. The difference in quantities reported by waste treatment facilities and waste generators were taken into consideration.

- Vegetal wastes (code 09.2) – in NACE sections G – U excl. 46.77 the combination of the data reported by waste producers/holders and waste treatment facilities were used. The difference in quantities reported by waste treatment facilities and waste generators were taken into consideration.

- Animal faeces, urine and manure (code 09.3) – in NACE section A the combination of data reported by biogas plants to the Ministry of Agriculture and into the database EPR and data reported by composting plants to EPR were used.

- Household and similar wastes (code 10.1) – in NACE sections A – F and NACE class 46.77 the combination of the data reported by waste producers/holders and estimations were used (see Chapter 5, Determination of waste generated by households).

- Mixed and undifferentiated materials (code 10.2) – in NACE section F the combination of data reported by waste producers/holders and estimations were used. Amounts produced by construction and demolition activities, which were reported in all economic sections except in section F, were allocated to section F.

- Mineral waste from construction and demolition (code 12.1) and Soils (code 12.6) – in NACE section F data were based on the estimation. For the purpose of improving the data quality concerning waste from NACE activities Mining and quarrying (B) and Construction (F), MESD/Institute implemented the project "Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials".

- Other mineral waste (code 12.2, 12.3, 12.5) – in NACE B and NACE F data were based on data reported by waste producers/holders and estimations. For the purpose of improving the data quality concerning waste from NACE activities Mining and quarrying (B) and Construction (F), MESD/Institute implemented the project "Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials".

Determination of waste generation in the economy on the basis of information on waste collection

- Metallic wastes, mixed ferrous and non-ferrous (code 06.3) – in NACE sections G – U excl. 46.77 and NACE class 46.77 the combination of data reported by waste producers/holders, waste collectors and estimations were used. Additionally, amounts produced by construction and demolition activities, which were reported in all economic sections except in section F, were allocated to section F.

- Glass wastes (code 07.1), Paper and cardboard wastes (code 07.2), Plastic wastes (code 07.4) and Wood wastes (code 07.5) – in NACE sections G – U excl. 46.77 the combination of data by waste producers/holders and waste collectors were used. The difference was taken into

consideration. The difference between those sources was added to services sector although part of the amount possible may originate from households. It was not possible to distinguish precise shares from commerce and households.

- Discarded equipment (excl. discarded vehicles, batteries/accumulators) (code 08 excl. 08.1, 08.41) – in NACE section HH (households) the combination of data reported by waste producers/holders and waste collectors were used. Regarding data on household waste, from 2017 new EPR reporting forms have been introduced (see Chapter 5, Determination of waste generation in the economy on the basis of administrative sources).

- Household and similar wastes (code 10.1) – in NACE sections G – U excl. 46.77 the combination of data reported by waste producers/holders, waste collectors, waste treatment facilities and estimations were used (see Chapter 5, Determination of waste generated by households).

Determination of waste generation in the economy on the basis of administrative sources

Determination of waste generation in the economy was mostly done based on the data reported by waste generators, waste collectors and waste treatment facilities into the EPR database. Provisions of the Act on Sustainable Waste Management (OG No 94/13, 74/17, 14/19, 98/19) and Ordinance on Environmental Pollution Register (OG No 87/15) stipulate reporting of the annual data for 2020.

Companies report EPR data via Internet by means of user name and password that are assigned by the MESD/Institute. The deadline for reporting is 31st of March current year for the previous calendar year. From 31st of March until 15th of May, 20 county offices and the office of the City of Zagreb in cooperation with the competent inspection ensure the checking of data in terms of their completeness, consistency and credibility. The MESD/Institute coordinates activities relating to data quality assurance and control.

Waste generators producing more than 500 kg of hazardous waste and/or more than 20 tonnes of non-hazardous per a year are obliged to report annual data on registration form NO (Registration form for producer/holder of produced waste). Reporting forms for waste generators require view of the chain of movement of waste, from the place of generation to the waste collector or place of final recovery/disposal.

Industrial waste collectors report data on registration form SO-2 (Registration form for waste collection). Except general data on waste collector, form SO-2 require for each type of waste data on collected amounts of waste and data on locations to which collected waste is forwarded.

Municipal waste collectors report data on the registration form SO-1 (Registration form for municipal waste collectors), while civic amenity sites and waste dealers on the registration form SO-3 (Registration form for amenity sites/mobile amenity sites and waste dealers). Registration forms require view of the chain of movement of waste, from the place of generation (collection) to another waste collector or place of final recovery/disposal. For each type of waste, municipal waste collector has to report town/municipality from which waste originates, amount collected from households, from amenity sites etc., location to which collected waste is forwarded. In case of mixed municipal waste, the number of inhabitants covered by collector's service has to be specified.

Waste treatment facilities (including landfills) report data on registration form OZO (Registration form for waste recovery/disposal). Form OZO contains general data about the operator, data about amounts for each waste type taken in the reporting year (from the territory of Croatia and imported from another countries separately), data about temporary storage, waste handling (amounts of waste regarding disposal and recovery procedures) etc.

As some bio-plants and incineration plants for animal by-products in 2020 still didn't obtain waste management permit according to the Act on Sustainable Waste Management (OG No 94/13, 74/17, 14/19, 98/19), part of amounts of <u>animal by-products not intended for human consumption</u> were determined on the basis of the data collected by Ministry of Agriculture. This Ministry is responsible for issuing approvals of temporary storage, incineration and co-incineration of animal by-products, and approvals of intermediate plants, biogas plants and composting plants, which take over animal by-products.

Determination of waste generation in the economy on the basis of other methods

N/A (Not applicable).

Determination of extractive waste generation (new section)

Table 4: Coverage of waste statistics with regard to extractive waste[1]

Coverage	Topsoil	Overburden	Waste-rock	Tailings (non-haz.)
Completely covered	x	x	x	
Partially covered				
Generally excluded				x

1) *Please mark with an X whether the listed materials are completely covered, partially covered or generally excluded from waste statistics.*

Tailings are not covered because in Croatia there is no ore excavation. It is carried out the exploitation of technical building stone, architecturally building stone, building sand and gravel and hydrocarbons.

Determination of waste generated by households

Determination of discarded vehicles amounts originating from households was based on the data reported by waste treatment companies (see Table 5).

For other waste types generated by households, amounts are based on the reports provided by municipal waste collection companies, civic amenity sites and waste dealers.

<u>Household and similar wastes (code 10.1) – mixed municipal waste</u> – data on generated amounts of mixed municipal waste by NACE activities were estimated. According to the information given by municipal waste collectors, about 82,7% of produced mixed municipal waste (LoW 20 03 01) originates from households while the rest (17,3%) is produced by economic activities. This 17,3% of totally produced amount of mixed municipal waste was divided with the number of employees in economic activities that resulted in an average ratio of generation of mixed municipal waste per employee and per year. This average was multiplied with number of employees in each NACE activity.

Estimated amounts of produced mixed municipal waste per economic activities are questionable quality mainly because of unregistered number of employees especially in touristic season in services providing accommodation, food preparation and serving which make a significant share in economy.

Data on municipal waste include amounts of municipal waste generated <u>by tourists</u>.

Table 5: Determination methods for waste generated by households

1	Indirect determination via waste collection	
1.1	Description of reporting unit applied (waste collectors, municipalities)	Waste collectors, civic amenity sites, waste dealers.
1.2	Description of the reporting system (regular survey on waste collectors, utilisation of administrative sources)	Household waste (code 10.1) - annual reports into the EPR + additional estimations for population not covered by organised collection of municipal waste Other waste - annual reports into the EPR
1.3	Waste types covered	Spent solvents (code 01.1); Acid, alkaline or saline wastes (code 01.2); Used oils (code 01.3); Chemical waste (code 01.4; 02; 03.1); Health care and biological wastes (code 05); Metallic wastes; ferrous (code 06.1) and non-ferrous (06.2); Metallic wastes; mixed ferrous and non-ferrous (code 06.3); Glass wastes (code 07.1); Paper and cardboard wastes (code 07.2); Rubber waste (07.3); Plastic wastes (code 07.4); Wood wastes (07.5); Textile wastes (code 07.6); Discarded equipment (excl. discarded vehicles; batteries/accumulators) (code 08 excl. 08.1; 08.41); Batteries and accumulators wastes (code 08.41); Animal and mixed food waste (code 09.1); Vegetal wastes (code 09.2); Household waste (code 10.1); Mixed and undifferentiated materials (code 10.2); Other mineral wastes (code 12.2, 12.3., 12.5)
1.4	Survey characteristics (1.4a – 1.4d) **Not Applicable**	
	a) Total no. of collectors /municipalities (population size)	-
	b) No. of collectors/municipalities selected for survey	-
	c) No. of responses used for the calculation of the totals	-
	d) Factor for weighting	-
1.5	Method applied for the differentiation between the sources household and commercial activities	From 2017 new EPR reporting forms have been introduced (see Chapter 5, Determination of waste generation in the economy on the basis of administrative sources). New reporting forms require more detailed information on waste origin, hence data on produced waste by households are more accurate than previous years.
1.6	Percentages of waste from commercial activities by waste types	-
1.7	Population served by a collection scheme for mixed household and similar waste, in %	99%
2	**Indirect determination via waste treatment**	
2.1	Specification of waste treatment facilities selected	Facilities for mechanical treatment of discarded vehicles.
2.2	Waste types covered	Discarded vehicles
2.3	Method applied for the differentiation between the sources household and commercial activities	Waste treatment facilities provided to the MESD/Institute the shares of discarded

		vehicles (HAZ and NHAZ) taken from households (91%) and commercial activities (6%). But according to the data reported to EPR by waste collectors, we made corrections for HAZ waste. Hence, the final data is 60% for households and 29% for commercial activities.
2.4	Percentages of waste from commercial activities by waste types	Discarded vehicles HAZ – 29% Discarded vehicles NHAZ – 8%

Estimation of non-covered amount of municipal waste:

$$\frac{Amount\ of\ municipal\ waste\ collected\ (reported\ into\ the\ EPR)}{Covered\ population\ (reported\ by\ registration\ forms)} * Number\ of\ non-covered\ population$$

Data sets 2 and 3: Waste treatment

General description of methodology, Data collection on capacity of treatment facilities, Data collection on treated amounts of waste

Data collection on capacity of treatment facilities – Relevant waste treatment facilities are identified through WMPR database, run by MESD/Institute. This database contains information and documents on waste management permits. Competent authority for issuing waste management permits for hazardous waste management and permits for thermal treatment of non-hazardous waste is Directorate for Environmental Impact Assessment and Sustainable Waste Management within the MESD. Competent authorities that issues permits for all other types of waste and registers for carrying out waste management operations are 20 county offices and the office of the City of Zagreb. MESD/Institute upon the issuing a permit receives a copy and on the daily bases data are entered into the WMPR database. Waste management permits provide various data, like data on recovery/disposal operations, annual capacities of treatment facilities, etc. The coverage of treatment facilities by WMPR database is almost 100%. Several sources were used for providing data on number and capacities of treatment facilities. Most of the data were extracted from WMPR database. In certain number of cases, data on capacities from EPR database were used or were obtained contacting directly waste treatment facilities. Only the data on number and capacities of biogas plants and incinerators for animal by-products were partially collected by Ministry of Agriculture, as none of these plants obtained permits according to the Act on Sustainable Waste Management.

Data on rest capacity of landfills were determinate based on the data reported by landfill operators into the database Central Management System for the Data on Landfills of Waste.

Data on treated amounts of waste mostly were reported by waste treatment facilities into the EPR database according to the procedure described above in section Determination of waste generation in the economy on the basis of administrative sources. Only part of the data on animal by-products treated in biogas plants and incinerators were collected by Ministry of Agriculture. In Croatia there is only one rendering plant of open type. It is the largest animal by-products processor and the majority of the animal by-products generated in Croatia are treated in this company. One of the results of that treatment process is technical fat. In 2020, there wasn't any incineration of technical fat.

6   Major Changes

Changes compared with previous years

By the agreement from May 2012 between MESD/Institute (ex Croatian Agency for Environment and Nature) and Croatian Bureau of Statistics (CBS), MESD/Institute took over the obligation of preparation and submitting data according to WSR to Eurostat. For the reference year 2010 and previous years, those data were delivered to Eurostat by the CBS. Comparison of the data from those two sources is not possible because of different methodologies of data collection and processing. The CBS collected data by biannual statistical surveys while MESD/Institute uses administrative source of data.

Regarding reporting data on waste generation into the EPR database, since 2016 new thresholds are in force (500 kg of hazardous waste and 20 tonnes of non-hazardous waste). Up to 2016 thresholds for reporting data on waste generation were 50 kg of hazardous waste and 2 tonnes of non-hazardous waste. Reported data on produced waste showed that increasing thresholds in mentioned range did not significantly influenced reported amounts but reduced administrative burden in economic sector.

From 2017 new EPR reporting forms have been introduced (see Chapter 5, Determination of waste generation in the economy on the basis of administrative sources). New reporting forms require more detailed data on waste origin, hence data on produced waste by households are more accurate than previous years.

For the purpose of improving the data quality concerning waste from NACE activities Mining and quarrying (B) and Construction (F), during 2016 and 2017, the MESD/Institute implemented the project "Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials". Within this project, estimates of waste quantities produced by mentioned NACE activities were made and those estimations were reported in reports for 2016, 2018 and 2020 according to WStatR.

Detailed information on changes in amounts of generated waste, amounts of treated waste, over time are presented in the chapter 8 Validation.

Foreseen changes

The plan is to improve data from agricultural sector (section NACE A) for the following years.

7 Specific issues - wet matter for sludges

Although the data on sludges are requested only in dry matter since the 2008 data collection, in the table below the amounts of waste generated for the NACE Total are indicated in tonnes of wet matter. This will be important to review the conversion factors that have been used to impute missing data in the past.

03.2	Industrial effluent sludges NHAZ	⚑	W	13860
03.2	Industrial effluent sludges HAZ	☠	W	5634
11	Common sludges NHAZ	⚑	W	78335
12.7	Dredging spoils NHAZ	⚑	W	18676
12.7	Dredging spoils HAZ	☠	W	3044

For industrial effluent sludges it was used conversion factor 0.27 while for the dredging spoils conversion factor was 0.5, in both cases in accordance with Eurostat document "Wet – dry conversion of sludges, ARGUS for Eurostat – Environment Statistics".

For common sludges it was used conversion factor 0.321 according to the information provided by the biggest waste water treatment plants.

8 Validation

1. Comparison over time (2020 – 2018)

a) (total/hazardous) waste generation by NACE

NACE 19 – Performed validation rule showed that in 2020 there was less hazardous waste than in 2018. It is about LoW 05 01 06* (oily sludges from maintenance operations of the plant or equipment) generated within the process of cleaning the tank in 2018 and 05 01 11* (wastes from cleaning of fuels with basis) due to the refining oil with a higher sulfur content in 2018 from oil industry. Those activities are not performed in 2020.

b) hazardous share by NACE

Performed validation rule showed deviation in NACE C13-C15. There was less total waste in 2020 than in 2018 due to reduced economic activity of this sector (LoW 04 01 01 fleshings and lime split wastes). In 2020 it is recorded reduced number of employees comparing with 2018. Hence, the estimated amounts of mixed municipal waste for which calculation is made on the base of number of employees are reduced. Slight increase of hazardous amounts is related to remediation of pollution with fuel oil (LoW 13 07 03* other fuels, including mixtures) on the location of one textile industry.

Performed validation rule showed deviation in NACE 46.77. There was more total waste in 2020 than in 2018 due to increased activity of metal waste traders.

c)   treatment by operation [WST_OPER]

R1 – Performed validation rule showed that in 2020 there was more waste treated by operation R1. It is about LoW 10 09 03 (furnace slag) which was imported to Croatia for treatment in cement industry.

Backfilling – Higher amounts were recorded in 2020 due to the amounts which were in temporary storage from 2018 (LoW 17 01 07 mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06*). Additionally, one factory started with treatment of LoW 19 12 09 minerals (for example sand, stones).

d)   generation and treatment by waste category

d.1)   generation by waste category

Acid, alkaline or saline wastes HAZ and NHAZ – In 2020 there was less waste than in 2018 due to regular maintenance of the two plants (oil industry and metal industry) which is performed periodically. In 2020 this activity wasn't performed.

Sludges and liquid wastes from waste treatment NHAZ – Lower amount in 2020 than in 2018. Data were checked and they are correct. It is about one waste treatment plant. The quantities and types of waste collected and treated depend on the market situation.

Wood waste NHAZ – Lower amount in 2020 than in 2018 due to regular maintenance of the two companies which is performed periodically. In 2020 this activity wasn't performed. Data were checked and they are correct.

Waste containing PCB HAZ – Higher amount in 2020 than in 2018 due to new type of waste generated in process of construction and demolition (LoW 17 09 02* construction and demolition wastes containing PCB, e.g. PCB-containing sealants, PCB-containing resin-based floorings, PCB-containing sealed glazing units, PCB-containing capacitors).

Batteries and accumulators wastes NHAZ – Higher amount in 2020 than in 2018 due to one factory had higher quantities of this kind of waste. Quantities and types of waste depend on waste entering the on-site treatment process.

Combustion wastes HAZ – As a consequence of the COVID-19 pandemic, on the location of one manufacturer of metal, production in 2020 was reduced (the plant operated for 2 months in 2020) compared to the previous years, and thus the total amount of waste was lower.

Soils HAZ – Lower amount in 2020 than in 2018 due to leakage from a pipe that carries water with minerals and oil residues from the gas station to the well.

Mineral waste from waste treatment and stabilised wastes NHAZ – Higher amount in 2020 than in 2018. Due to the increase in the amount of treated waste (construction and demolition waste), the amount of output waste (secondary waste) was higher. In addition, depending on the quality of the waste that is processed, the quantities of the output fractions are greater or less. In 2020, the two earthquakes affected Croatia.

Mineral waste from waste treatment and stabilised wastes HAZ – Lower amount in 2020 than in 2018 due to one factory had less quantities of this kind of waste. Quantities and types of waste depend on waste entering the on-site treatment process.

d.2)   treatment by waste category

Acid, alkaline or saline wastes HAZ – Lower amount in 2020 than in 2018. Data were checked and they are correct. It is about very low absolute values.

Acid, alkaline or saline wastes NHAZ – Data were checked and they are correct. In order to reduce unpleasant odors, the landfill management decided not to receive those types of waste that could cause unpleasant odors in the landfill. Therefore, in 2020 LoW 05 07 02 (wastes containing sulphur) was not reported.

Industrial effluent sludges HAZ – Higher amount in 2020 than in 2018 due to increased amount of imported waste from other countries for energy recovery. It is about LoW 19 08 13* (sludges containing dangerous substances from other treatment of industrial wastewater).

Sludges and liquid wastes from waste treatment NHAZ – Lower amount in 2020 than in 2018 due to the reduced business activity of treatment plants.

Sludges and liquid wastes from waste treatment HAZ – Higher amount in 2020 than in 2018 due to the increased production of clinker and cement.

Health care and biological wastes NHAZ – Higher amount in 2020 than in 2018 due to the COVID-19 pandemic.

Wood wastes HAZ – Lower amount in 2020 than in 2018 due to the market disruptions that affected the amount of waste collected and thus recovered.

Wood wastes NHAZ – Higher amount in 2020 than in 2018 due to the changes in the production process in one factory for manufacturing of veneer sheets and wood-based panels.

Discarded vehicles NHAZ – During 2020, a large number of vehicle owners were encouraged to hand over vehicles as complete vehicles, ie if hazardous waste under LoW 16 01 04* (end-of-life vehicles), which resulted in the amount reduction of LoW 16 01 06 (end-of-life vehicles, containing neither liquids nor other hazardous components).

Mineral waste from construction and demolition HAZ – Higher amount in 2020 than in 2018 due to the market disruptions that affected the amount of waste collected and thus recovered. It is about LoW 17 02 04* (glass, plastic and wood containing or contaminated with dangerous substances).

Combustion wastes NHAZ – See explanation 1.c) – R1.

Dredging spoils NHAZ – Higher amounts in 2020 due to construction of sewerage networks, which resulted in greater waste disposal of LoW 17 05 06 (dredging spoil other than those mentioned in 17 05 05*).

Mineral waste from waste treatment and stabilised wastes NHAZ – Higher amount in 2020 than in 2018. Due to the increase in the amount of treated waste (construction and demolition waste), the amount of output waste (secondary waste) submitted to the backfilling was higher. Additionally, one factory started with treatment of LoW 19 12 09 minerals (for example sand, stones). In 2020, the two earthquakes affected Croatia.

e)   relation treatment / generation by waste category

Acid, alkaline or saline wastes HAZ and NHAZ – Performed validation rule showed that there is more waste generated than treated. That is in line with actual state in Croatia that significant amounts are pre-treated and exported out of state. See explanation in 1.d1) and 1.d2).

Industrial effluent sludges HAZ – Increased amount of imported waste from other countries for energy recovery. See explanation in 1.d2).

Sludges and liquid wastes from waste treatment HAZ – One cement factory had increased production of clinker and cement. See explanation in 1.d2).

Health care and biological wastes NHAZ – COVID-19 pandemic. See explanation in 1.d2).

Metal wastes, non-ferrous NHAZ – Lower amounts were treated in 2020 than in 2018. Due to COVID-19 pandemic, capacity of production was reduced in one metal factory and alloy demand was reduced.

Wood waste HAZ – Market disruptions. See explanation is 1.d2).

Mineral waste from construction and demolition HAZ – Market disruptions. See explanation is 1.d2).

Combustion wastes NHAZ – See explanation 1.c) – R1.

Dredging spoils NHAZ – Construction of sewerage networks. See explanation in 1.d2).

f)   generation and treatment (largest differences for inner cells)

f.1)   generation (largest differences for inner cells)

Regarding data on household waste, from 2017 new EPR reporting forms have been introduced (see Chapter 5, Determination of waste generation in the economy on the basis of administrative sources). New reporting forms require more detailed data on waste origin, hence data on produced waste by households are more accurate than previous years and significantly differ from previous years. Consequently, data on waste from service sector also significantly differ for some waste categories from data for previous years.

Metal wastes, ferrous NHAZ – NACE E38 – Higher amount in 2020 than in 2018 because it depends on the quantities delivered by the producers to the factory. In addition, the collection increased due to the business increase.

Metal wastes, ferrous NHAZ – NACE F – It is about LoW 17 04 05 (iron and steel). One construction company didn't had this LoW previous years and larger quantity from import to Croatia.

Metal wastes, ferrous NHAZ – HH – Less amount of waste was produced due to COVID-19 pandemic.

Metal wastes, non-ferrous NHAZ – NACE F – in NACE section F data were based on the estimation. For the purpose of improving the data quality concerning waste from NACE activities Mining and quarrying (B) and Construction (F), MESD/Institute implemented the project "Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials". It is about LoW 17 04 02 (aluminium).

Glass wastes NHAZ – NACE C23 – The difference in quantities were due to different production parameters of one glass factory, which resulted in higher amounts in 2020 than in 2018.

Glass wastes NHAZ – NACE G_U excl. 46.77 – Less amount of waste was produced due to COVID-19 pandemic. In 2020 the activity of commercial sector related to serving food was reduced.

Paper and cardboard wastes NHAZ – NACE E38 – Since China stopped receiving waste paper for processing, recovered quantities increased in the country.

Paper and cardboard wastes NHAZ – NACE G_U excl. 46.77 and HH – Data were checked and they are correct. Separate collection of this fraction increased.

Plastic wastes NHAZ and Wood wastes NHAZ – NACE E38 – Higher amount in 2020 than in 2018 due to workload fluctuation, business expansion and another warehouse opened.

Plastic wastes NHAZ – HH – Data were checked and they are correct. Separate collection of this fraction increased.

Discarded vehicles HAZ – HH – Data were checked and they are correct. Separate collection of this fraction increased.

Animal and mixed food waste NHAZ – **NACE C10-12 –** Data on generation are estimated according to the reported amounts by biogas plants and other waste treatment companies. This companies received lower amounts of waste from manufacture of meat and production of meat products and dairy products in 2020 than in 2018.

Animal and mixed food waste NHAZ – **HH** – Separate collection of this fraction increased.

Vegetal wastes NHAZ – NACE G_U excl. 46.77 – In 2020 data quality improved. Companies that maintain public areas of cities started to report data in this sector.

Animal faeces, urine and manure NHAZ – NACE A – Performed validation rule showed that in 2020 there was more waste. Data were checked with biogas plants and they are correct.

Household and similar wastes NHAZ – **NACE G_U excl. 46.77 and HH –** Less amount of waste was produced due to COVID-19 pandemic and decreased activity of commercial sector related food serving.

Sorting residues NHAZ – NACE E38 – Performed validation rule showed that in 2020 there was more waste. It depends on the quantities delivered by the producers to the factory. In addition, the collection increased due to the business increase.

Common sludges NHAZ – NACE E36_37_39 – Higher amount in 2020 than in 2018 because previous years one plant was reporting sludge as LoW 19 08 99 (wastes not otherwise specified) which belongs to 10.2 Mixed and undifferentiated materials. This changed in 2019 and now it is reported as LoW 19 08 05 (sludges from treatment of urban waste water). In addition, one plant was reporting sludge in NACE G_U excl. 46.77 which they eventually corrected.

Common sludges NHAZ – NACE G_U excl. 46.77 – Lower amount in 2020 than in 2018 due to previous years one plant was registered in NACE G_U excl. 46.77 and reported sludge in that sector. It was eventually corrected and since 2019 it is reported in E36_37_39.

Mineral waste from construction and demolition NHAZ – NACE F – Increased amount due to increased number of construction sites. Additionally, in 2020 the two earthquakes affected Croatia.

Other mineral wastes NHAZ – NACE B – in NACE section B data were based on the estimation. For the purpose of improving the data quality concerning waste from NACE activities Mining and quarrying (B) and Construction (F), MESD/Institute implemented the project "Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials"

Combustion wastes NHAZ – NACE D – Recorded decrease in 2020 is a result of business decrease of one big waste treatment company.

Combustion wastes NHAZ – NACE G_U excl. 46.77 – Recorded increase in 2020 is due to one company started working in the second half of 2019.

Soils NHAZ – NACE F – It is about LoW 17 05 04 (soil and stones other than those mentioned in 17 05 03*) which occurs in quantities that vary over the years and according to the reporting area. Depends on the activity of the construction site – excavations.

Mineral waste from waste treatment and stabilised wastes NHAZ – NACE E38 and F – See explanation in 1.d1).

f.2) treatment (largest differences for inner cells)

Metal wastes, ferrous NHAZ – As a consequence of the COVID-19 pandemic, on the location of one manufacturer of metal, production in 2020 was reduced (the plant operated for 2 months in 2020) compared to the previous years, and thus the total amount of waste was lower.

Metal wastes, mixed ferrous and non-ferrous NHAZ – Lower amount in 2020 than in 2018 due to the market disruptions that affected the amount of waste collected and thus recovered.

Glass wastes NHAZ – The difference in quantities was due to different production parameters of one glass factory, which resulted in higher amounts in 2020 than in 2018 and thus recovered and landfilled.

Paper and cardboard wastes NHAZ – Higher amounts due to the increased separate collection of this fraction.

Plastic wastes NHAZ – One big cement factory had an increased production and thus increased material and energy recovery. Also, separate collection of this fraction increased.

Wood wastes NHAZ – Due to the changes in the production process in one factory for manufacturing of veneer sheets and wood-based panels, recovery of this kind of waste increased in 2020.

Discarded equipment (excl. discarded vehicles, batteries/accumulators) NHAZ – Increased amount of recovered waste due to constant changes in the type and amount of EE waste that one big factory recover and adjustments of technological processes to waste that enters the recovery process.

Discarded vehicles NHAZ – In 2020, a larger quantity was reported under LoW 16 01 04* (end-of-life vehicles), which caused amount reduction of LoW 16 01 06 (end-of-life vehicles, containing neither liquids nor other hazardous components).

Animal and mixed food waste NHAZ – In 2020 there were more biogas plants operating than in 2018. Also, the reported amount of biodegradable waste from kitchens and canteens (LoW 20 01 08) due to non-compliance of waste is higher.

Vegetal wastes NHAZ – In 2020 there were more biogas plants operating than in 2018. In addition, modernization has taken place inside the one factory of old oil storage tanks.

Animal faeces, urine and manure NHAZ – There was more waste recovered. Data were checked with biogas plants and they are correct. Due to the increase of the volume of work, the amount of waste has also increased.

Household and similar wastes NHAZ – There was significant decrease of disposed mixed municipal waste due to the decreased amounts of generated mixed municipal waste in 2020. Regarding treatment processes R2-R11, data were checked and they are correct. It is about bulky waste LoW 20 03 07.

Mixed and undifferentiated materials NHAZ – Larger quantities of certain types of waste generated were related to the reconstruction and replacement of equipment in the factory since 2019 and thus more waste was recovered. The disposed amounts of LoW 19 08 01 (screenings) and 19 08 99 (wastes not otherwise specified) were lower in 2020 because in previous years, waste was handed over to the utility company for disposal, and from 2020 it was handed over to companies that recover waste.

Sorting residues NHAZ – One big cement factory had an increased production and thus increased material and energy recovery. Also, the other big factory had larger quantities recovered due to the increase in TSR,

ie. replacing traditional fuels with alternative fuels. Due to the increase in separate collection, there was more amount of waste landfilled (LoW 19 12 12 - other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11*).

Common sludges NHAZ – There was more waste recovered due to one factory started recovery of waste in mid-2019. Also, data were checked with treatment plants and they are correct. Due to the increase of the volume of work, the amount of waste has also increased.

Mineral waste from construction and demolition NHAZ – More waste was recovered due to one factory had increased waste collection and recovery capacity in their permit and there was increased number of construction sites. There was more waste landfilled in 2018 due to increased works on the sewerage network which wasn't preformed in 2020. In addition, landfills dispose less waste each year.

Other mineral wastes NHAZ – Amounts of waste landfilled were lower in 2020 due to a change in the acceptance of certain waste in waste management centre. Mostly, it is about LoW 12 01 17 (waste blasting material other than those mentioned in 12 01 16 *) and also 10 13 04 (wastes from calcination and hydration of lime), 19 08 02 (waste from desanding).

Combustion wastes NHAZ – One big cement industry preformed energy recovery of LoW 10 09 03 (furnace slag), which was used in the production of clinker. Additionally, one big cement factory had an increased production and thus increased material and energy recovery and the other had maintenance of thermal power plant. Furthermore, one company started working in the second half of 2019.

Soils NHAZ, Mineral waste from waste treatment and stabilized wastes NHAZ – Higher amounts were recorded in 2020 due to one factory started with treatment of LoW 19 12 09 minerals (for example sand, stones). One factory started working in 2019. In addition, it depends on the activity of the construction site – excavations. In 2020, the two earthquakes affected Croatia. Also, increase in quantities for backfilling were recorded. It is about LoW 17 05 04 (soil and stones other than those mentioned in 17 05 03*) which is used daily as a cover on landfill due to continuous increase in disposal of mixed municipal waste.

For other, please see previous validation results.

2. Relation generation / treatment (totals)

Performed validation rule showed that there is more hazardous waste generated than treated. That is in line with actual state in Croatia that significant amounts are pre-treated. In addition, Croatia exports hazardous waste.

Performed validation rule showed that there is more non-hazardous waste generated than treated. For the purpose of improving the data quality during 2016 and 2017, the MESD/Institute implemented the project "Improvement of data flow and data quality regarding construction waste and waste from the exploration and exploitation of mineral raw materials". Within this project, data on generated waste were estimated and those data were included in set 1 WStatR while data on final destination of estimated amounts are not known. In 2020, the two earthquakes affected Croatia.

3. Implausible combinations treatment operation / waste categories

Performed validation rule showed that in 2020 there was implausible combination for treatment operation / waste categories.

EWC-Stat 12.4 (LoW 10 09 03) – **R1** – Cement industry – This type of waste is used in the process of production of clinker.

4. Treated amounts vs. treatment capacities (incineration)

Performed validation rule showed that in 2020 treated amounts were below available capacities for energy recovery (R1).

Additionally, data on special waste categories (packaging waste, waste tyres, waste oils, waste batteries and accumulators, end-of-life vehicles, waste electric and electronic equipment, waste containing asbestos) were cross-checked with data collected by EPEEF according to ordinances on special waste categories above mentioned.

Part II: Report on quality attributes

1   Relevance

The main users of the data contained in the report according to WSR are:

- Croatian Bureau of Statistics, Ministry of Economy and Sustainable Development, Environment Protection and Energy Efficiency Fund, County offices, The State Inspectorate and other authority bodies

- Private persons, companies, research institutes…

Description of missing data in data set 1 on waste generation

<u>NACE A</u>

In Croatia, straw is mainly used as a product, except spoiled amounts, which are very small, and no data is available to estimate its amount.

Other data that are missing:

- Part of the data on packaging waste (pesticides packaging, seeds packaging…), pesticides, discarded equipment, batteries and accumulators, used oils, wood waste, vegetal waste.

It is foreseen for the near future to carry out study for the determination, calculation and estimation the waste amounts generated in agricultural sector.

Description of missing data in data sets 2 and 3 on treated waste quantities and capacities:

Data are complete.

2   Accuracy

N/A (Not Applicable).

3   Timeliness and punctuality

<u>Datasets 1 and 2:</u>

As it is mentioned in the previous chapters, data used for the compilation of Dataset 1 and Dataset 2 of WStatR 2020 are mostly based on the data reported by waste producers/holders, waste collectors and waste management companies into the EPR database.

Companies report data via Internet by means of user name and password that are assigned by the MESD/Institute. The deadline for reporting data 2020 was 31st of March 2021. Until 15th of May 2021, 20

county offices and the office of the City of Zagreb should ensure the checking of data quality in terms of their completeness, consistency and credibility by verification.

After the data verification made by counties was finished, the MESD/Institute provided final check of the verified data by the end of the November 2021.

In December 2021, data reported into the EPR database were converted by special application to the format requested by WStatR. When data conversion was done, MESD/Institute started with data preparation for the WStatR.

Part of the data on animal by-products additionally requested from the Ministry of Agriculture were delivered in January 2022.

After the compilation of datasets 1 and 2 was done (at the end of March), before delivery to the Eurostat, MESD/Institute preformed validation rules according Eurostat recommendation. Results of the preformed validation rules are presented in the chapter 8 (Validation).

Dataset 3:

Data on number of waste treatment facilities and capacity for energy recovery (R1), waste incineration (D10) and recovery (R2-R11) were extracted from the WMPR database. Validation of the data contained in the mentioned database is carried out continuously during entering data from permits into the database WMPR.

Regarding capacities for treatment of animal by-products, according to the Regulation (EC) No 1069/2009 and Regulation (EC) No 142/2011, Ministry of Agriculture, Directorate for Veterinary and Food Safety maintains registers for carrying out anaerobic digestion and incineration of animal by-products. By entering into force of the new Act on Sustainable Waste Management (OG No 94/13) in 2013 those facilities are also obliged to obtain permits according to the mentioned Act. Hence, part of the data on capacities for anaerobic digestion and incineration of animal by-products are provided by Ministry of Agriculture while majority data were extracted from WMPR database.

Regarding data on rest capacity of landfills, according to the Act on Sustainable Waste Management (OG No 94/13, 73/17, 14/19, 98/19), the landfill operator should submit data into database Central Management System for the Data on Landfills of Waste maintained by MESD/Institute. Data should be submitted twice a year within 30 days of the expiry of each half-year period. Therefore, data for 2020 were reported by the end of the January 2021. Validation of reported data was performed during February 2021.

4   Accessibility and clarity

The data and information on waste are disseminated primarily on website of the MESD/Institute (http://www.haop.hr/). The web page provides access to databases that contain reported and collected data on waste:
Publications and reports:
- http://www.haop.hr/hr/tematska-podrucja/otpad-registri-oneciscavanja-i-ostali-sektorski-pritisci/gospodarenje-otpadom-0,
- http://www.haop.hr/hr/tematska-podrucja/otpad-registri-oneciscavanja-i-ostali-sektorski-pritisci/postrojenja-i-registri-2,
Indicators:
- http://www.haop.hr/hr/tematska-podrucja/otpad-registri-oneciscavanja-i-ostali-sektorski-pritisci/gospodarenje-otpadom-3,
- http://www.haop.hr/hr/tematska-podrucja/otpad-registri-oneciscavanja-i-ostali-sektorski-pritisci/postrojenja-i-registri-0,

Public browsers:

- http://roo.azo.hr/rpt.html,
- http://www.haop.hr/hr/informacijski-sustavi/informacijski-sustav-zastite-okolisa/gospodarenje-otpadom.

Data were also published using LoW classification in Statistical Yearbooks (http://www.dzs.hr/default_e.htm).

Regarding clarity, MESD/Institute publishes on its websites legislation, manuals and instructions for companies, questionnaires etc (http://www.haop.hr/hr/tematska-podrucja/otpad-registri-oneciscavanja-i-ostali-sektorski-pritisci/gospodarenje-otpadom).

Additionally, MESDtings and workshops disseminate data and information. Data and other information are available on request by phone and info mail (http://www.haop.hr/hr/kontakt) or Information Access Request in accordance with the Act on the Right of Access to Information (OG No 25/13, 85/15) for the professional and other interested public.

5 Comparability

On the national level only the comparability of the data on special waste streams is possible because this is the only case of parallel data collection (EPEEF and MESD/Institute).

Data collected by CBS up to 2010 and data collected by MESD/Institute are incomparable because of two different methodologies used for data collection.

Regional comparability of data on waste treatment facilities:

Waste management permits are issued for the location of waste treatment facilities.

Regarding mobile waste treatment facilities, the permit are issued for each treatment location. If the permit for mobile waste treatment facility is issued for the locations belonging to the two different NUTS regions, this treatment facility is added to the region where the company operator is located.

6 Coherence

Data reported according to WStatR were used also for the preparation of environmental indicators and national reports.

7 Burden on respondents

There are about 5000 NO forms (from about 2800 companies) and 380 OZO forms (from about 300 companies) filled for reporting year 2020. These forms are prescribed by the Ordinance on Environmental Pollution Register (OG No 87/15). They are filled electronically so there are some prefilled general fields, automatic checks and available data for previous reporting year in order to shorten the time necessary for data submission. If there is a need, according to the reporting obligation of Republic of Croatia, MESD/Institute asks companies for additional information. There are also manuals, instructions and FAQ available on MESD/Institute webpage.