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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND
THE COUNCIL**

**on statistics compiled pursuant to Regulation (EC) No 2150/2002 on waste statistics and
their quality**

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1. INTRODUCTION

1.1. Regulation on waste statistics

Article 8(1) of Regulation (EC) No 2150/2002 of the European Parliament and of the Council of 25 November 2002 on waste statistics¹ requires the Commission to submit a report on the implementation of the Regulation every three years to the European Parliament and the Council. The first report was published in 2008².

Section 7(3) of Annexes I and II stipulates that the quality reports from Member States are to be included in the report provided for in Article 8. These reports are available on the following Internet site:

http://circa.europa.eu/Public/irc/dsis/pip/library?l=/wastesstatistics/regulat/data_transmission/quality_statistics/2008

This report summarises progress made since the first data delivery in 2006. The report covers the 27 EU Member States and considers the results of the latest data delivery in June 2010. The report also describes the transition from NACE Rev. 1.1 to NACE Rev. 2, and outlines the changes and expected improvements that will result from the revision of the Waste Statistics Regulation.

Starting with the reference year 2004, the Regulation requires the EU Member States to provide data every second year. Annexes I and II set out the requirements for statistics on waste generation, waste treatment and waste treatment capacities. Results are broken down by waste categories according to the statistical nomenclature on waste (EWC-Stat), which is set out in Annex III to the Regulation.

1.2. Data quality in a multi-method environment

Regulation (EC) 2150/2002 defines the data to be submitted and the required quality but does not prescribe a specific method of drawing up waste statistics, which are thus compiled in a multi-method environment. This enables Member States to keep their data collection systems and to minimise the changes needed to comply with the Regulation.

However, the multi-method approach may result in methodological differences from one country to another, between different data sets from the same country, and even within individual data sets. This makes it difficult to safeguard data comparability and ensure high data quality.

The way in which data quality can be measured depends on the methods used. For different methods, there are different quality parameters (e.g. coefficient of variation for sample surveys, sensitivity analysis for modelling, etc.). In particular, the combination of methods within data sets makes it difficult to define indicators for overall data quality. As a consequence the Regulation's multi-method approach hampers the assessment and communication of data quality.

¹ OJ L 332, 9.12.2002, p. 1, as amended by Regulation (EC) No 849/2010 (OJ L 253, 28.9.2010, p. 2).

² COM(2008) 355 final, 13.6.2008.

In their quality reports, the Member States describe the data by reference to quality elements commonly used in the European Statistical System³ and set out in Regulation (EC) 1445/2005 on the quality of waste statistics⁴.

1.3. Quality control

Since the first data delivery in 2006, Eurostat has set up an efficient quality control system consisting of two steps. The first step is a quick evaluation of the data and quality reports, and an evaluation report is sent out to the countries within two months after the reporting deadline. The second step is a more in-depth validation with no strict deadline.

The *quick evaluation* is made on the basis of five criteria:

- completeness of data sets;
- completeness of quality report;
- timeliness;
- proper application of definitions and classifications;
- application of sound statistical methods.

In this phase, the data validation concerns mainly the internal coherence of the new data and the developments over time. The analysis is made at a highly aggregate level and aims to detect important breaks in series.

The quick evaluation is appreciated by the countries, which is reflected in the immediate feedback to the questions raised in the evaluation reports, and ensures timely publication of the data. The country data are published in the Eurostat dissemination database three months after delivery deadline.

The in-depth validation analyses the data at a more detailed level (e.g. by economic sectors and by waste categories) and compares patterns and developments across countries. The validation checks include:

- intra-country comparisons of waste generation with values from previous years for each economic activity using appropriate indicators;
- cross-country comparisons of the data for each economic activity;
- cross-checks with waste data from other reporting obligations such as compliance monitoring pursuant to other waste-related legislation.

Potential questions are checked against the countries' quality reports and the feedback to the quick evaluation and may result in a second set of questions being sent to the countries concerned.

³ Eurostat website on Quality:
http://epp.eurostat.ec.europa.eu/portal/page?_pageid=2273.12273_47140765&_dad=portal&_schema=PORTAL.

⁴ OJ L 229, 6.9.2005, p. 6.

2. PUNCTUALITY AND TIMELINESS

Data and quality reports are to be submitted within 18 months after the reference year, i.e. the delivery deadline for reference year 2008 was 30 June 2010. The countries were asked, in the event of incomplete data or missing quality reports, to provide the missing information as soon as possible.

At the time of this report, compliance with the reporting deadline for the reference year 2008 can be summarised as follows:

- 19 countries delivered their data sets in time;
- 4 Member States submitted data within three weeks after the deadline so that they could be considered in the first evaluation round (Portugal, Austria, France, Cyprus);
- 1 Member State (Romania) delivered data on 20 September 2010;
- 3 Member States submitted data more than 3 months after the deadline: Italy delivered on 11 November, Greece on 1 December and Ireland on 21 December 2010. Greece and Ireland incurred serious delays in reporting already in the previous reporting years.

In summary, compliance with the reporting deadline for 2008 was satisfactory. In all 23 of the 27 Member States submitted their deliveries timely or with a delay of not more than three weeks. A compliance monitoring routine is established at Eurostat and reminders are sent to Member States at short intervals according to a defined schedule. Hence, punctuality has improved compared to the reference year 2006 when 18 countries delivered data within the same period.

– Publication

The data on waste generation and waste treatment were published in the Eurostat dissemination database on 4 October. An update of the database is expected after the finalisation of the in-depth validation.

3. COMPLETENESS

The delivery of complete data sets is crucial for the production of EU aggregates. Missing data limit the interpretation and the informative value of waste statistics. Countries are therefore asked to minimise the amount of missing data, if necessary by sending in estimates.

In the first reporting round for the reference year 2004, 6 of the 27 EU Member States were able to provide complete data sets on *waste generation* covering all waste categories and all sectors. 21 Member States delivered data sets with some gaps. Most data gaps related either to waste generated in agriculture, forestry, hunting (NACE A 01, A 02) and fishery (NACE A 03) or to the reporting on sludges (in weight and dry weight). Overall, the share of missing values on waste generation amounted to about 9% of the required data.

For the reference year 2006, the completeness of data improved considerably. The share of missing values on waste generation fell to 2.1%. Missing data were reported by only 7

countries whereas 20 Member States provided complete data sets. The share of missing data is highest for the sectors already mentioned above (NACE A 01–03). The highest shares of missing values in 2006 were reported by Ireland, Italy and Latvia.

With regard to the data on *waste treatment*, the number of countries with incomplete data sets at national level also decreased significantly between 2004 and 2006. In 2004, 15 countries reported incomplete data sets. The share of missing data for the EU-27 accounted for 2.5 % of the required data. In 2006, only 5 countries delivered incomplete data on the amounts of waste treated. The share of the missing values fell to 1.5 %. More than 70 % of the missing data relate to the disposal of waste through ‘land treatment and release into water bodies’, which is mainly applied for non-hazardous sludges.

A further improvement of data completeness for waste generation and treatment is noticed for the reference year 2008. However, due to the late data delivery of three countries the evaluation was still ongoing by the time this report was drafted.

4. DATA ACCURACY

Accuracy deals with the closeness between the estimated or computed value and the exact or true value, including aspects such as sampling errors, data coverage, applied thresholds, non-response, adjustments, controls and corrections, or confidentiality.

4.1. Data coverage

The objective of the Regulation is to produce statistics on waste in accordance with the scope of Directive 2008/98/EC. Statistics on waste generation must be compiled for all economic sectors and for households, and must include waste arising from recovery and disposal operations — what is known as secondary waste. The statistics should also cover waste from small businesses (< 10 employees) although such firms should be exempt from surveys wherever possible.

Statistics on waste treatment cover all waste that is recovered or disposed of within a country, irrespective of the origin of the waste. The underlying concept of the Regulation is to collect data on the final destination of waste; preparatory treatment operations are not covered.

Excluded from the scope of the Regulation is all waste that is recycled directly at the site where the waste was generated.

– Coverage errors

The observed coverage errors are mostly connected with one of the following aspects:

- unclear (legal) definitions, e. g. the distinction between waste and non-waste;
- imported and exported wastes;
- coverage with regard to secondary waste and small enterprises;
- problems concerning specific economic sectors (e.g. construction and demolition activities).

The overall impact of coverage errors is hard to assess. Coverage errors may lead to underestimations as well as to overestimations. The possible impacts of methodological adaptations are illustrated by examples from Poland and Sweden. For the reference year 2008, Poland brought data coverage for animal faeces and manure into line with European case law (*Case C-416/02*), and excluded from waste statistics the amount of manure that is used on farmland. In Sweden, data coverage for wood waste and animal and vegetal waste was reassessed with regard to the criteria for distinguishing between waste and by-products⁵. In both countries, the adjustments led to a considerable reduction in the generated amounts, of about 96 million tonnes in Poland and 21 million tonnes in Sweden.

4.2. Breakdown by economic sectors

The Regulation calls on the Member States to break down their data by 20 waste generating activities (19 economic sectors plus households). Correct allocation to the generating activities is a prerequisite for:

- the comparability of sector-specific waste amounts;
- the coherence of waste statistics with business statistics.

The breakdown of economic activities is defined by reference to the Classification of Economic Activities in the European Community (NACE). For the reference years 2004 and 2006 NACE Rev. 1.1 applied; as of the year 2008, data are collected according to NACE Rev. 2.

– *Transition to NACE Rev. 2*

The new breakdown by economic categories according to NACE Rev. 2 is defined in Annex IV to Regulation (EC) No 1893/2006⁶. On account of the high level of aggregation used in the Regulation on waste statistics the impact of the transition from NACE Rev. 1.1 to NACE Rev. 2 is limited; 17 of the 19 economic aggregates applied for waste statistics are basically identical.

The biggest change has to do with the classification of waste management activities. Waste management activities that were so far covered by *Sewage and refuse disposal, sanitation and similar activities* (NACE Rev. 1.1, division 90) are assigned to the new division 38 *Waste collection, treatment and disposal activities; materials recovery* whereas the *Collection and treatment of sewage* (NACE rev. 1.1 code 9001) is assigned to the new division 37 *Sewerage*. As a result, most waste management activities will be concentrated in the new division 38. To maintain the time series at the level of economic sectors the data on waste management activities for 2004 and 2006 are converted into the breakdown according to NACE Rev. 2. The conversion is carried out by Eurostat in consultation with the Member States.

Furthermore, *Publishing* (NACE rev. 1.1, code 221) has been moved from manufacturing industry (sub-section DE) to the new section *J Information and communication* and is thus part of service activities. In this case, no conversion of the 2004 and 2006 data is intended unless the data analyses were to reveal a significant impact on the time series.

⁵ Communication from the Commission to the Council and the European Parliament on the interpretative communication on waste and by-products (COM(2007) 59 final).

⁶ OJ L 393, 30.12.2006, p. 1.

– *Misclassification*

The way waste is allocated to the generating sector depends on the methods applied for data collection. There is a significant risk of misallocation in countries where data on waste generation are derived indirectly from waste treatment data. This is the approach taken by Denmark, Germany, Lithuania, Austria and Malta. Information on the generating company or sector is known only from secondary sources (e.g. waste collector, waste treatment operator) or has to be derived by other means (e.g. by models or by using the European List of Waste⁷, which contains information on the origin of waste).

Some of the countries concerned have modified their approaches in order to improve the classification by economic sectors. Germany has established an additional sample survey on waste generators in order to assign the generated waste more accurately to the sources. Lithuania also intends to introduce an additional survey on waste generation. Austria expects an improvement of waste allocation to sectors through a new electronic information system. Denmark is introducing a new waste data system to increase compliance with the required breakdown from reference year 2012 onwards.

4.3. Waste classification

The importance of waste classification for accurate and comparable waste statistics is obvious: waste categories must cover the same waste types in Member States in order to be usable for the monitoring of waste policies at EU level.

The Regulation defines the breakdown by waste categories according to the statistical nomenclature EWC-Stat but does not prescribe a specific classification to be used for data collection. Countries are free to use any waste classification as long as they can produce the defined formats in the required quality.

Most of the countries collect their data according to the European List of Waste (LoW), which comprises 839 waste types. Despite some application problems of the LoW the widespread use of this classification ensures a high level of comparability. The overall impact of classification errors on data accuracy is assumed to be small.

5. COMPARABILITY

5.1. Comparability over time

With the third reporting round having been accomplished a first assessment of the comparability of the data over time is possible.

The evaluation of the countries' quality reports shows that considerable adjustments to national waste statistics approaches were made by nearly all Member States. Most countries are now further improving their data collection with regard to data quality (e.g. closing of data gaps; improvement of coverage) and with regard to the efficiency of their methods.

However, the comparison of data for 2008 with the previous years, which indicates a decrease in waste generation of about 309 million tonnes or 10.9%, shows that methodological

⁷ Decision 2000/532/EC as regards the list of wastes, OJ L 226, 6.9.2000, p.3.

modifications in individual countries may still have significant impacts on the EU aggregates. This is best illustrated by the fact that this development can be attributed to methodological changes in three Member States. Whereas the reductions in Poland and Sweden are due to adjustments of data coverage (see section 4.1), France reported considerably lower amounts of waste from the construction sector (NACE Rev. 1.1, section F) as a result of a newly introduced, more accurate survey of the construction sector.

The data validation system by Eurostat ensures that breaks in time series are identified and either corrected or explained. In addition, the countries' quality reports have proven to be a useful tool to monitor methodological changes and their impacts in Member States.

To ensure a consistent time series at the level of economic sectors, the data for 2004 and 2006 were adjusted for the changes in the breakdown by sectors that result from the transition to NACE Rev. 2. In addition, the data for 2004 that were missing on account of derogations for 11 countries were imputed retrospectively on the basis of the data for 2006.

5.2. Comparability across countries

Thanks to the common definitions and classifications the comparability of the data across countries is fairly high. Differences between countries with regard to the generated and treated totals become more and more explainable. Some problems remain where countries have not used statistical units to link to the economic activities that generate the waste. This does not affect the total amounts of waste reported but hampers the comparability by economic sectors.

The thorough data analysis, inter alia by means of sector-specific indicators, ensures a continuous improvement of comparability across countries.

6. BURDEN ON BUSINESSES

The Regulation on waste statistics asks Member States to reduce the burden by providing access to administrative data and to exclude small firms with fewer than 10 employees from surveys unless they contribute significantly to waste generation.

Most Member States do not measure the burden in physical terms and can therefore provide only qualitative assessments. In the quality reports for the reference year 2008, seven Member States provided figures on the time required by respondents. The Czech Republic, Denmark, Germany, Slovenia and the UK report a burden of between 30 minutes and four hours per respondent. Clearly longer times are reported as being needed by Sweden (up to 25 hrs per respondent) and by Poland (up to 40 hrs). In spite of the lengthy time requirements, Sweden considers the total burden of waste statistics as very light as by far most of the information is drawn from administrative sources and direct inquiry is applied only for a very low number of enterprises. In Poland, the heavy burden is partly due to the fact that the reporting system is being changed from statistical surveys to the use of an administrative information system and companies have to report according to both systems until the new system is established.

The greatest help to companies is to avoid double reporting by using administrative data and/or by coordinating waste surveys among the institutions concerned (statistical offices, ministries of the environment, environmental agencies). For 15 Member States, administrative data are the main data source for waste statistics. Other countries use administrative data as one of many data sources.

The exemption of small companies from surveys is handled in different ways. Some countries cover small companies by sample surveys and extrapolate the results. Most, though, exclude them completely, the figures being either ignored or extrapolated by factor-based estimation models. Countries have established different exclusion thresholds, defined mostly by the number of employees or by the amount of waste generated per year. Some countries combine the two criteria to make sure that even small companies are covered by data collection when they exceed the defined waste generation threshold.

7. REVISION OF THE WASTE STATISTICS REGULATION

After the first two reporting periods some deficits had become obvious and areas for improvement were already identified in the first report to the European Parliament and Council (COM(2008) 355). In addition, the revised Waste Framework Directive (2008/98/EC) establishes new information needs and amended definitions.

A task force was therefore set up in autumn 2008 to address all possible topics and prepare final recommendations for the revision of the Annexes to the Regulation. At the end of July 2009 a set of documents containing details and an explanation of the suggested changes were sent out to Member States for consultation. The resulting legal proposal was adopted by the Commission on 27 September 2010⁸.

The aims of the revision were to:

- increase the usability of waste statistics;
- simplify the provisions of the Regulation;
- align the Regulation with other reporting obligations on waste.

The most important change is the harmonisation of the breakdown by waste categories in section 2 of Annexes I and II to the Regulation. The different breakdowns hampered data validation as well as the interpretation and communication of results. In future, waste generation and waste treatment will be reported according to the same 51 waste categories. Although this will lead to a nominal increase of the data to be reported the new provision is not expected to lead to an extra burden.

In addition, some waste categories have been reorganised or newly introduced in order to increase the usability of data, e.g. for the monitoring of waste policies. This includes:

- separate waste categories for mineral waste from construction and demolition, for soils and for dredging spoil;
- separate waste categories for liquid and mineral wastes from waste treatment (secondary wastes);
- reorganisation of the categories animal and vegetal waste and metal wastes;
- aggregation of different chemical wastes in one category.

⁸ Commission Regulation (EU) No 849/2010 of 27 September 2010 amending Regulation (EC) No 2150/2002 of the European Parliament and of the Council on waste statistics (OJ L 253, 28.9.2010, p. 2).

Furthermore, the waste treatment categories were reorganised in order to bring the Regulation into line with the definitions and requirements of the revised Waste Framework Directive, and to integrate data on the number and capacity of landfills that are so far collected under Directive 1999/31/EC on landfills⁹.

Data on treated waste quantities according to Annex II will have to be reported at national level only. Reporting on the NUTS 1 level is abandoned as there is no documented policy need for this information. Reporting requirements on the number and capacity of waste treatment facilities were reduced as some of the data produced proved to be of limited use.

Altogether, the revision of the Regulation is expected to raise the usability and clarity of the data without putting an additional burden on the countries. Although the revision will lead to some breaks, the continuity of the data over time will be maintained to a high degree. The revised Regulation will apply as of reference year 2010.

The Manual for the Implementation of the Waste Statistics Regulation has been adapted to the upcoming changes.

– *Statistics on the import and export of waste*

Article 1(3) of the Waste Statistics Regulation stipulates that, after pilot studies have been conducted pursuant to Article 5(1), waste statistics are to cover the import and export of wastes for which no data are collected under the Waste Shipment Regulation (1013/2006/EC)¹⁰, i.e. for the so-called ‘green list’ wastes. Based on these provisions, Eurostat drew up a pilot study programme in the period from 2003 to 2007 in which 11 countries participated.

Based on the studies, the results of which are summarised in the Commission’s report COM(2008) 501, a proposal was discussed with the Member States in November 2009. The discussion showed that several countries would have considerable difficulties with the implementation of regular statistics on import and export of waste. As a result, Eurostat decided to review the user needs and the political justification for these statistics.

8. ACHIEVEMENTS AND OUTLOOK

Significant progress has been achieved with regard to the compilation of waste statistics since the first reporting in 2006. The punctuality and completeness of data delivery by Member States as well as the timeliness of data publication have steadily improved. Waste statistics have reached a fairly high degree of comparability across countries and considerable progress is being made towards full data coverage. Overall, the data are of appropriate quality for most countries.

The harmonisation of data is furthered by a set of methodological guidance documents that are available from the website of the [Environmental Data Centre on Waste](#). Errors and methodological deficits are identified by the quality control system.

⁹ Commission Decision of 17 November 2000 concerning a questionnaire for Member States reports on the implementation of Directive 1999/31/EC on the landfill of waste (OJ L 298, 25.11.2000, p. 24).

¹⁰ OJ L 190, 12.7.2006, p. 1, last amended by OJ L 119, 13.5.2010, p. 1.

With the data delivery for 2008, data on waste generation and treatment are now available for the period from 2004 to 2008. With the extension of the time series the data become increasingly useful, e.g. for building indicators and for use in the field of Environmental Accounts.

At the same time, it has to be mentioned that methodological changes in individual countries may still have a significant impact on the time series, at national level but also at the level of the EU-27 aggregate. Developments over time should thus still be interpreted with caution and after careful analysis of the underlying data. Also, the effect of new concepts introduced by the revised Waste Framework Directive, i.e. end-of-waste criteria, on waste statistics has to be observed.

Indicators on hazardous waste generation and on the generation of non-mineral waste have been developed and are being integrated into the set of Sustainable Development Indicators and the indicators for monitoring the Europe 2020 strategy. The development of an indicator for recycling is, however, still ongoing.

A considerable improvement with regard to the usability and interpretability of waste statistics is expected from the revision of the Regulation that will apply as of reference year 2010.