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1) General description

1.1) *Brief definition*

The amount of waste generated in a country per year – in total, by economic sectors and households, per unit of GDP, per capita, etc.

1.2) *Units of measurement*

Thousand metric tons per year; Waste intensity by various economic sectors should be presented in thousand metric tons per unit of GDP at purchasing power parity (PPP) at constant prices in international dollars and waste intensity by households in thousand metric tons per capita.

1.3) *Context*

Relation to other indicators from the Guidelines - This indicator relates to indicators “1-2: Transboundary movements of hazardous waste”, “1-3: Waste reuse and recycling” and “1-4: Final waste disposal”.

2) Relevance for environmental policy

2.1) *Purpose*

The main purpose is to provide a measure of the pressure on the environment of the total amount of generated waste and waste by category (by economic activity and households). The waste intensity represents a driving force indicator and shows response to anthropogenic activities. Waste generated per unit of GDP (waste intensity by various economic sectors) will show whether there has been any decoupling of waste generation from economic growth of the country.

2.2) Issue

Sound and efficient use of natural resources is an important part of sustainable development. Waste represents a considerable loss of resources in the form of materials and energy.

The treatment and disposal of the generated waste may cause environmental pollution and expose humans to harmful substances and infectious organisms. Waste generation is closely linked to the level of economic activity in a country and reflects society's production and consumption patterns. A reduction in the volume of waste generated per unit of GDP is an indication of the economy's move towards less material-intensive production patterns.

2.3) International agreements and targets

a) Global level

Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal agreed to take all practicable steps to ensure minimization of the generation of hazardous and other waste (including municipal waste). Agenda 21's chapter 20 on general objectives includes the target of "preventing or minimizing the generation of hazardous wastes as part of an overall integrated cleaner production approach" (20.7).

b) Subregional level

The Environmental Strategy of countries of South-Eastern and Eastern Europe, Caucasus and Central Asia calls for the development of intersector waste management action plans and of economic mechanisms to facilitate implementation of cleaner technologies and waste prevention and minimization. In EU, the Waste Framework Directive provides for increased efforts to prevent and reduce waste generation, recover wastes and develop new techniques for final disposal of waste.

3) Methodology and guidelines

3.1) Data collection and calculations

Waste statistics should group waste according to main economic activities and should use the International Standards Industrial Classification of All Economic Activities (ISIC). Waste from economic activities that is removed by municipal waste collection should be reported under the respective sector of generation. Data collection methods generally are: surveys, administrative data or statistical estimations. Data on households waste should be usually gathered through surveys of municipalities, which are responsible for waste collection and disposal, or from transport companies that collect waste, or from landfill or incineration

sites. Direct household survey on waste generation can also be used. Waste collection companies and landfills should apply coefficients or factors for recalculations from m³ to tons¹. The amount reported under “total waste generation” should be equal to the sum of the waste amounts reported under the various economic activities and household waste.

3.2) Internationally agreed methodologies and standards

The UNSD/UNEP Questionnaires on Environment Statistics (section: Waste) provide a methodology for calculating waste generation by sector. The Basel Convention has established an internationally agreed methodology for calculating the amount of generated hazardous waste. In EU, waste statistics (including waste generation and waste disposal (final disposal and recovery)) are dealt with by a specialized regulation (2150/2002).

4) Data sources and reporting

In the countries of South-Eastern and Eastern Europe, Caucasus and Central Asia, data on the generation of waste from economic sectors are usually collected by authorities responsible for the environment or by state statistical agencies (using a special statistical form 2TP), while data on municipal waste generation are collected by state statistical agencies. In many countries, data on waste generation are published in national state-of-the-environment reports and statistical yearbooks. Countries report data on internationally agreed types of hazardous waste to the Secretariat of the Basel Convention, and waste generation data to UNSD in their response to the UNSD/UNEP Questionnaire on Environment Statistics.

5) References at the international level

- UNSD/UNEP Questionnaires on Environment Statistics 2004, 2006, 2008, 2010 (waste section);
- Basel Convention for the Control of Transboundary Movements of Hazardous Wastes and Their Disposal;
- United Nations. International Standard Industrial Classification of All Economic Activities. Series M, No. 4, Rev. 3.;
- *Europe's Environment: The Third Assessment*. (EEA, 2003) (Kiev Assessment);

¹ Examples of coefficients for conversion from cubic metres to tons from different countries are available from: <http://www.unece.org/stats/documents/2012.04.enviro.html> under the title "Conversion coefficients"

- Europe's Environment, *The 4th Assessment*, EEA 2007;
- The European Environment-State and Outlook 2010: Synthesis, EEA 2010;
- Environmental Indicator Report 2012, EEA 2012;
- Regulation (EC) No. 2150/2002 of the European Parliament and of the Council of 25 November 2005 on waste statistics;
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Waste Framework Directive);
- UNSD: <http://unstats.un.org/unsd/environment/>;
- Basel Convention: <http://www.basel.int/>;
- European Commission – Waste policy: <http://ec.europa.eu/environment/waste/index.htm>;
- EUROSTAT: <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home>;
- EIONET: <http://dd.eionet.europa.eu/datasets.jsp>;
- EEA: <http://www.eea.europa.eu/data-and-maps/indicators/>.