

I-2: Management of hazardous waste

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1) General description

1.1) *Brief definition*

This indicator specifies the stock of hazardous waste within a country, as defined by the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention), as well as the amounts generated, exported, imported, and treated in a country – in total and by methods of treatment (recycling, incineration, landfilling, and other methods).

1.2) *Units of measurement*

The amounts of hazardous waste are expressed in thousands of metric tons.

1.3) *Context*

Relation to other indicators from the Guidelines - This indicator relates to indicators “I-1: Waste generation”, “I-3: Waste reuse and recycling” and “I-4: Final waste disposal”.

2) Relevance for environmental policy

2.1) *Purpose*

The management of hazardous waste represents a driving force indicator. Trends in a country’s generation, import and export of hazardous waste, as well as its treatment, show its response to the need to minimize the generation of hazardous waste and to recycle it domestically.

2.2) *Issue*

Hazardous waste refers to the categories of waste to be controlled according to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Article 1 and Annexes I and III). They include substances, which have at least one of the hazardous characteristics listed in Annex III of the convention, which are including

explosive, flammable, oxidizing, poisonous, infectious, corrosive, toxic, and ecotoxic substances and wastes.

The stock of hazardous waste is the amount of hazardous waste waiting for treatment or disposal. Hazardous waste is commonly stored prior to treatment or disposal. Part of the hazardous waste may not be treated or disposed of during the year that it is generated. At the end of the year, this amount of hazardous waste not treated or disposed of will contribute to the stock of hazardous waste to be treated or disposed of for upcoming years. Also, part of the amount of hazardous waste generated may be exported to other countries for treatment. Countries may also have imported hazardous waste either for treatment or disposal. The uncontrolled transboundary movement and dumping of this waste can cause severe health problems and can poison water and land for decades. Recycling of hazardous waste within a country reduces the need for its transboundary movement and prevents risks to human health and the environment. In some instances transboundary movement is required for environmentally sound waste recovery and disposal. Transboundary hazardous waste movement may also be justified when waste is going to be used as a secondary raw material or for energy generation. Complete data on the generation, export, import, and treatment of hazardous waste help to control its safe movement and disposal.

2.3) International agreements and targets

a) Global level

The transboundary movement of hazardous waste is regulated by the Basel Convention through requirements for prior notifications and consents (Article 6). The Conference of the Parties to the Basel Convention, at its second meeting, banned transboundary movement of hazardous waste from Annex VII countries (EU, OECD and Liechtenstein) to non-Annex VII countries (resolution II/12). The third meeting of the Conference of the Parties amended the above resolution (resolution III/1). The Basel Convention does not provide any internationally agreed targets for the containment and reduction of the generation and transboundary movement of hazardous waste.

3) Methodology and guidelines

3.1) Data collection and calculations

The stock of hazardous waste at the beginning of a given year is the amount of hazardous waste waiting for treatment or disposal and should equal the stock of hazardous waste at the end of the previous year. The amount of exported and imported hazardous waste is regulated through prior notification at the side of export and written consent at the side of import as required by Article 6 of the Basel Convention. Data should be recorded on the amount, category and nature of each type of waste (whether hazardous or other waste

according to Annex II to the Convention) which is generated, and which is subject to transboundary movement. Focal points established by the Parties to the Basel Convention are responsible for obtaining and providing information on the transboundary movements of wastes. Data should be available on a continuous basis through the application at the national level of notification and monitoring procedures for transboundary waste movement. The Stock of hazardous waste at the end of the year is calculated according to the following formula:

$$\text{Stock of hazardous waste at the end of the year} =$$
$$(\text{Stock of hazardous waste at the beginning of the year} + \text{Hazardous waste generated during the year} + \text{Hazardous waste imported during the year} - \text{Hazardous waste exported during the year} - \text{Hazardous waste treated or disposed of during the year})$$

In principle, the sum of the amounts of hazardous waste going to: (Recycling + Incineration + Landfilling + Other disposal) should be equal to the amount of "Hazardous waste treated or disposed of during the year". Nevertheless, as there can be double counting due to secondary waste quantities (e.g., residues of incineration which are landfilled), the sum can be higher than the amounts to be managed.

The difficulty of establishing whether a particular waste is hazardous may lead to problems in using waste information as an indicator of sustainable development. A special technical working group created under the Basel Convention was entrusted with determining which types of waste should be considered hazardous under the convention (Decision III/1 of the third meeting of the Conference of the Parties). The same working group categorized waste into types, which should be considered as waste under all and any circumstances and other types which are not subject to the Convention (Annexes VIII and IX to the Convention). Illegal trade in hazardous waste poses additional problems.

3.2) Internationally agreed methodologies and standards

Article 5 of the Basel Convention requires that Parties establish bodies responsible for administering notifications and issuing consents as well as establishing focal points which collect all relevant information on any transboundary movement of hazardous or other wastes (amount, properties, origin, methods of disposal, etc.). The seventh meeting of the Conference of the Parties to the Basel Convention adopted a decision on harmonization of lists of wastes and related procedures.

In the European Union (EU), waste statistics (including hazardous waste) are dealt with by regulation 2150/2002.

4) Data sources and reporting

Data on the management of hazardous waste are collected by environmental protection authorities and custom offices. The most reliable and complete information on transboundary movements of waste can be obtained from Basel Convention focal points or competent authorities, which are responsible for reporting to the Convention secretariat.

This information is reviewed and compiled by the secretariat and is presented in an annual report which includes statistical tables and graphic representations of the data.

5) References at the international level

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal;
- Manual: Questionnaire on “Transmission of Information”. (Basel Convention for the Control of Transboundary Movements of Hazardous Wastes and Their Disposal);
- Manual for implementation of the Basel Convention:
<http://www.basel.int/Portals/4/Basel%20Convention/docs/protocol/implmanprot.doc>;
- UNSD/UNEP Questionnaires on Environment Statistics 2004, 2006, 2008, 2010, 2013 (waste section);
- Europe's Environment: The Third Assessment. (EEA, 2003) (Kiev Assessment);
- Europe's Environment, The Fourth 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;
- 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/>.