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**NATIONAL REVIEW OF THE APPLICATION OF ENVIRONMENTAL INDICATORS**

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EVALUATION OF FURTHER SIX INDICATORS FROM THE UNECE INDICATOR GUIDELINES

Indicator	A. Effective inter-agency cooperation mechanisms to produce the indicator	B. Data quality assurance and control procedures for the production of the indicator	C. Publication of the indicator in statistical compendiums and state-of-the-environment reports
<b>Waste generation</b>	Responsible institution for production of data on waste generation is State Statistical Office of the Republic of Macedonia. It carries out annual survey on municipal waste, and biennial survey on waste from MACE sectors (manufacturing, energy, mining and quarrying. Survey is based on European waste statistics regulation No. 2150/2002, and the National Law on waste management from the Ministry of Environment and Physical Planning. Dates and information for industrial hazardous and non-hazardous waste are from the Cadaster for polluters and polluting substances stipulated in the Low of Environment.	Data obtained from the survey are analyzed. A comparison with previous data are made. In the RM there is no practice of waste selection (e.g. paper, glass, metal), so it is still a problem to collect data and report data according to separate categories. Also, it is difficult to obtain data separate for waste quantities from households and from business entities. Dates and information from the Cadaster for polluters and polluting substances comes from the legal and physical entities that produce and manage waste.	Data on waste are published in the regular biannual publication named Environmental statistics, Statistical Yearbook, news release and on the web site. All date and information regarding waste generation are public available through web page of Ministry of Environment and Physical planning and through Annual reports for Environment, publication for National indicators for Environment as well as SOERs.
<b>Final waste disposal</b>	Data on waste disposal are collected from the local authorities and landfills. This data are available in State Statistical Office and Ministry of Environment and Physical Planning.	Data obtained from the survey are analyzed. For any changes contacts with responsible institutions are made.	Data on waste are published in the regular biannual publication named Environmental statistics, Statistical Yearbook, news release and on the web site. All date and information regarding waste disposal are public available through web page of Ministry of Environment and Physical planning and through Annual reports for quality of environment, publication for National indicators for Environment as well as SOERs.
<b>Transboundary movements of hazardous waste</b>	----	----	----
<b>Ambient air quality in urban areas</b>	Responsible institution for for production of ambient air quality data is Ministry of Environment and physical Planning. Data are obtained from State automatic ambient air quality monitoring system which consists of 15 monitoring stations.	Institution that make measure, calculate and publish the same should guarantee data quality	Data are published in the regular biannual publication named Environmental statistics and on the web site of SSO. All data and information are public available through web page of Ministry of Environment and Physical planning and through Annual and montly reports for quality of the Environment, publication for National indicators for Environment as well as SOERs.
<b>Threatened and protected species</b>	Data are obtained from several projects.	The owners of the data guarantee for data quality.	Data are published in the regular biannual publication named Environmental statistics and on the web site of SSO. All data and information are public available through web page of Ministry of Environment and Physical planning and through Annual reports for quality of the Environment, publication for National indicators for Environment as well as SOERs.
<b>Trends in the number and distribution of selected species</b>	Data are obtained from several projects.	The owners of the data guarantee for data quality.	Data are published in the regular biannual publication named Environmental statistics and on the web site of SSO. All data and information are public available through web page of Ministry of Environment and Physical planning and through Annual reports for quality of the Environment, publication for National indicators for Environment as well as SOERs.

Question A. Effective inter-agency cooperation mechanisms to produce the indicator

Please describe cooperation arrangements, if any, which have been established in your country to collect the necessary data for the indicator. These may involve statistical agencies, ministries of water management, agriculture, transport, interior, environment, economic development and energy, hydro-meteorological services and agencies on geology, as appropriate. The description should cover problems met, solutions found and possible further steps envisaged or needed.

Question B. Data quality assurance and control procedures for the production of the indicator

Please describe data quality assurance and control procedures for the production of the indicator. The description should cover problems met, solutions found and possible further steps envisaged or needed. References should be made to any international methodologies and guidelines that are followed to ensure data quality and control.

Question C. Publication of the indicator in statistical compendiums and state-of-the-environment reports

Please present the evidence of the indicator publication in statistical compendiums and state-of-the-environment reports (titles, names of the publishing houses, cities and years of the publications, languages, number of copies published, internet addresses, and whether time-series data was published on the indicator.

Time series data on the indicators for 1990-2010, Tab1. Waste generation: (Republic of Macedonia)

	Unit	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010**
<b>Waste generation by source</b>														
Agriculture, forestry and fishing (ISIC 01-03)	1000 t/year													
Mining and quarrying (ISIC 05-09)	1000 t/year													
Manufacturing (ISIC 10 - 33)	1000 t/year											1362		
Electricity, gas, steam and air conditioning supply (ISIC 35)	1000 t/year													
Construction (ISIC 41 - 43)	1000 t/year													
Other economic activities excluding ISIC 38	1000 t/year													
Municipal waste	1000 t/year						400***	464***	572	589***	607***	714	726	722
Of which from households	1000 t/year													
Total waste generation (5 + 6 + 7 + 8 + 9 + 10 + 11)*	1000 t/year											2076	12754,7 t +772 m3	
Of which hazardous waste	1000 t/year											6	763,8 t +369,7 m3	
<b>Population and GDP</b>														
Population of the country	Million											2045177 ***	2048619 ***	2052722***
Municipal waste per capita (11/16 x 1000)	kg/capita											349	354	351
GDP constant prices (2005)	USD million	549,086,704	468,367,877	54,214,446	517,607,255	522,041,610	53,674,616	558,651,907	581,569,679	604,565,203	641,740,832	673,515,530	668,471,954	
Industrial (manufacturing) waste per unit GDP (7/18)	kg/ 1000 USD													
<b>Total waste per unit of GDP (13/18)</b>	<b>kg/ 1000 USD</b>													
Hazardous waste per unit of GDP (14/18)	kg/1000 USD													

Notes: Total waste generation (5 + 6 + 7 + 8 + 9 + 10 + 11)\* shows total generated no separated industrial waste plus municipal waste in 1000 t/year and 1000 m3/year, 2010\*\*proces for calculation of data and information is stil ongoing, \*\*\*Estimated data

This table asks for data on the total amount of waste (both non-hazardous and hazardous), generated by various economic activities and by households. The breakdown follows the International Standard Industrial Classification of all Economic Activities (ISIC Rev.4).

(URL: <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27>).

The table refers to all primary waste originating from the mentioned sectors including waste for recovery and recycling, but excluding direct internal recycling and re-use. Waste from secondary sources should be excluded.

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. Waste generated by an economic activity includes all kinds of waste generated by economic units within this activity. If data are not collected according to ISIC, please provide data for household waste generation (line 11) and total waste generation (line 13). If data do not cover all waste sources, please leave the total waste generation cell blank (line13 8). Waste generated by ISIC 38 (waste collection, treatment and disposal activities; and materials recovery) is from secondary sources, i.e., residual materials from recovery and disposal operations such as incineration and composting residues. To avoid double counting, waste generated by ISIC 38 should be excluded from this table.

Separately, the table describes the total amount of hazardous waste generated during the individual year.

If the requested data are not available, please leave the cell blank. If the requested variable is not applicable (the phenomenon is not relevant) to the country or the value is less than half the unit of measurement, the cell should be filled with "0".

Definitions are presented in sheet t1a. In case your country applies other definitions than those presented in sheet t1a, specify, please.

## List of definitions

**Waste:** Materials that are not prime products (i.e., products produced for the market) for which the generator has no further use for his own purpose of production, transformation or consumption, and which he discards, or intends or is required to discard.

It excludes material directly recycled or reused at the place of generation (i.e., establishment) and waste materials that are directly discharged into ambient water or air as wastewater or air pollution.

(Waste from) **Agriculture, forestry and fishing:** All waste from agricultural, forestry and fishing activities. Manure used as fertilizer is excluded (i.e., only excess manure which is disposed of should be included). This category refers to ISIC divisions 01 to 03.

(Waste from) **Manufacturing:** All waste from manufacturing activities. This category refers to ISIC divisions 10 to 33.

(Waste from) **Electricity, gas, steam and air conditioning supply:** All waste from electricity, gas, steam and air conditioning supply. Waste from the production of nuclear energy should be excluded. This category refers to ISIC division 35.

(Waste from) **Construction:** All waste from construction activities. This category refers to waste generated in ISIC division 41 to 43.

(Waste from) **Other economic activities excluding ISIC 38:** All waste from all other economic activities not specified before and excluding ISIC division 38. This category refers to waste generated in ISIC divisions 36, 37, 39, and ISIC 45 to 99.

**Municipal waste:** Municipal waste, collected by or on behalf of municipalities, by public or private enterprises, includes waste originating from: households, commerce and trade, small businesses, office buildings and institutions (schools, hospitals, government buildings). It also includes bulky waste (e.g., white goods, old furniture, mattresses) and waste from selected municipal services, e.g., waste from park and garden maintenance, waste from street cleaning services (street sweepings, the content of litter containers, market cleansing waste), if managed as waste. The definition excludes waste from municipal sewage network and treatment, municipal construction and demolition waste.

(Waste from) **Households:** Waste material usually generated in the normal functioning of households.

**Hazardous waste:** Hazardous waste refers to the categories of waste to be controlled according to the Basel Convention on the control of transboundary movements of hazardous waste and their disposal (Article 1 and Annex I).

**Management of waste:** Collection, transport, treatment and disposal of waste, including after-care of disposal sites.

**Recycling:** Any reprocessing of waste material in a production process that diverts it from the waste stream, except reuse as fuel. Both reprocessing as the same type of product, and for different purposes should be included. Recycling within industrial plants i.e., at the place of generation should be excluded.

**Composting:** A biological process that submits biodegradable waste to anaerobic or aerobic decomposition, and that results in a product that is recovered and can be used to increase soil fertility.

**Incineration:** The controlled combustion of waste with or without energy recovery.

**Landfilling:** Final placement of waste into or onto the land in a controlled or uncontrolled way. The definition covers both landfilling in internal sites (i.e., where a generator of waste is carrying out its own waste disposal at the place of generation) and in external sites.

**Controlled landfilling:** Final placement of waste into or onto the land in a controlled landfill site.

**Other waste treatment:** Any final treatment or disposal different from recycling, incineration and landfilling. Physical/chemical treatment, biological treatment, releasing into water bodies and permanent storage are included here.

**Non hazardous industrial waste:** Manufacturing waste (ISIC 10 - 33) excluding hazardous waste

**Time series data on the indicators for 1990-2010, Table 2a. Final waste disposal: Management of municipal waste: (Republic of Macedonia)**

	Unit	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Municipal waste</b>														
<b>Municipal waste collected</b>	1000 t/ year											531	552	545
Municipal waste managed	1000 t/ year											531	552	545
Of which recycling	1000 t/ year													
Of which composting	1000 t/ year													
Of which Incineration- without energy recovery	1000 t/ year													
Of which Incineration with energy recovery	1000 t/ year													
Of which landfilling on a controlled site	1000 t/ year											531	552	545
Of which landfilling on a non- controlled site	1000 t/ year													
Of which other disposal (specify in the footnote, please)	1000 t/ year													

Note: Definitions are presented in sheet t1a. In case different definitions are applied in the country, specify, please. Please explain the category "Other disposal". Please insert any additional information necessary for explanation of figures presented.

**Time series data on the indicators for 1990-2010, Table 2b. Final waste disposal: Management of non-hazardous industrial waste: (Republic of Macedonia)**

	Unit	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009*	2010**
<b>Total amount generated</b>	1000 t/ year											1356	11264,8 t + 771,6 m3	
Of which recycling	1000 t/ year											319	375,2 t + 157,8 m3	
Of which composting	1000 t/ year													
Of which incineration- without energy recovery	1000 t/ year													
Of which Incineration with energy recovery	1000 t/ year													
Of which landfilling on a controlled site	1000 t/ year											1177	10674,9 t + 572,1 m3	
Of which landfilling on a non- controlled site	1000 t/ year													
Of which other disposal (specify in the footnote, please)	1000 t/ year												214,6 t + 41,7 m3	

Note: Definitions are presented in sheet t1a. In case different definitions are applied in the country, specify, please. Please explain the category "Other disposal". **Other disposal means temporary storage**. Please insert any additional information necessary for explanation of figures presented.

**\*Data are in 1000 t/year and 1000 m3/year. 2010\*\* Calculation of data and information is still going on**

**Time series data on the indicators for 1990-2010, Table 3. Transboundary movements of hazardous waste :(Republic of Macedonia)**

	Unit	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Import of hazardous waste	1000 t/ year													
Export of hazardous waste	1000 t/ year													
Import - export	1000 t/ year													
Total hazardous waste managed	1000 t/ year													
Of which recycling	1000 t/ year													
Of which incineration	1000 t/ year													
Of which landfilling	1000 t/ year													
Of which other disposal (specify in footnote, please)	1000 t/year													

**Notes: Process of strengthening the capacity for fulfilling the obligations according to Basel Convention is going on, we expect the output in next year.**  
Please use the definition of hazardous waste in accordance with the Basel Convention. If data according to the Basel Convention are not available, amounts can be given according to national or any other international definition, but should be labelled accordingly. Other definitions are presented in sheet t1a. In the case that different definitions are applied in the country, specify, please. Please explain the category "Other disposal". Please insert any additional information necessary for explanation of figures presented..