



United Nations Statistics Division (UNSD) and United Nations Environment Programme (UNEP)
QUESTIONNAIRE 2010 ON ENVIRONMENT STATISTICS

Section: WASTE

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GUIDANCE

INTRODUCTION

The biennial data collection which is a joint activity of the United Nations Statistics Division (UNSD) and the United Nations Environment Programme (UNEP) contributes to the development of the UNSD International Environment Statistics Database. The data will be analyzed and consolidated by UNSD for use in international work and will be made available to users at UNSD's website.

The data requested in this questionnaire may be initially collected or compiled by different institutions in a country. The national statistical offices or ministries of environment are asked to bring together the data from these different sources.

Where a country has provided data to previous UNSD/UNEP Questionnaires on Environment Statistics, the 2010 Questionnaire has been pre-filled with these data. Countries are requested to add data for later years and to check the time series for consistency.

The definitions are listed in order of appearance of the variables. Where variables are repeated, the definition can be found where the variable first appeared.

Copies of the questionnaire are available online at <http://unstats.un.org/unsd/environment/questionnaire.htm>. Data from previous data collections are available at <http://unstats.un.org/unsd/environment/qindicators.htm>.

Waste management is a key concern for the environment and the sustainable management of natural resources. The primary targets of waste management are:

- Reducing toxicity and volume of waste generated in the different production and consumption processes;
- Increasing the share of recovered waste materials;
- Sound environmental management of waste for disposal.

The purpose of the waste questionnaire is to provide consistent data to draw reliable information and trends on:

- the share of economic activities and households in the generation of waste;
- the generation and treatment of hazardous waste;
- the generation, collection, treatment and composition of municipal waste.

Changes from the UNSD/UNEP Questionnaire 2008 on Environment Statistics:

The table on generation and recycling of selected waste materials has been suspended.

The table on management of hazardous waste has been modified and a flow chart has been developed to demonstrate the relationship between hazardous waste stocks and flows.

The table on waste treatment and disposal facilities has been suspended.

A data validation section is added next to each table. It includes two validation table types: time series validation and coherence validation. It will help both the country and UNSD to validate the data provided.

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STEPS TO FOLLOW

- Fill in the contact institution information at the top of each table.
- Check the pre-filled data and, if possible, kindly update in the table. Tables are pre-filled with data received from previous UNSD/UNEP Questionnaires. Check the pre-filled footnotes and correct them if necessary.
- If necessary, include footnotes to give additional information on data. Assign codes in alphabetical order (e.g., A, B, C...) in the first column to the right of the data and in the 'Footnotes' section below each table. Write your explanatory text in the footnote text column next to the associated code. If there are big data fluctuations in the time series, add footnotes to explain the large changes.
- Based on the definitions provided, fill in the tables as much as possible (see the Definitions Sheet). If a different definition or methodology has been used, explain the differences in a footnote or provide the definition and/or methodology applied in the Supplementary Information Sheet (R6).
- If data are not available for the years included in each table, provide the data you might have for other years and add a footnote for the years to which the data apply. Note that years 1996 -1999 can also be viewed/edited: Select column H to column T, right-click, and select "Unhide".
- Provide as much information as possible in the footnotes on the source and data collection method for each value.
- If the requested data are not available, 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".**
- Report data in the requested unit.
- Attach any documents or reference which could help UNSD to understand your data.
- After you have filled in the data for each table, check the flagged cases (in red) for data coherence in the data validation section next to each table.

Contact us: If you have any questions, contact the United Nations Statistics Division

- by mail: UN Statistics Division, Environment Statistics Section, DC2 -1416, 2 United Nations Plaza, New York, New York, 10017, USA
- by e-mail: envstats@un.org
- by fax: +1 (212) 963-0623
- by phone: Reena Shah at +1 (212) 963-4586, or Yongyi Min at +1 (212) 963-9296, or Daniel Clarke +1 (917) 367-7048, or Robin Carrington at +1 (212) 963-6234.

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DESCRIPTION OF TABLES

In many countries there are no comprehensive data or estimates of the total amounts of waste generated by the different human/economic activities. Instead they focus on certain types of waste or waste materials that are of high priority for waste management. If this is the case, fill in the tables of the questionnaire with partial data. If the data refer to certain types of waste, report them under the relevant wider categories of the questionnaire and provide an explanation with a footnote.

In some countries, waste statistics are only available at regional or city level. If there are no data at the national level, report the regional or city level data and provide a footnote indicating the coverage of the data.

Table R1: Generation of Waste by Source

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 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, provide data for household waste generation and total waste generation. If data do not cover all waste sources, leave the total waste generation cell blank.

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.

Table R2: Management of Hazardous Waste

Hazardous waste here refers to 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 Annex I) (URL: <http://www.basel.int/>). If data are not available according to the Basel Convention, amounts can be given according to national definitions and footnoted accordingly. If that is the case, give information on national definitions/classifications in the Supplementary Information Sheet.

Hazardous waste is commonly stored in temporary storage 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 before treatment. Countries may also have imported hazardous waste either for treatment or disposal. 'Stock of hazardous waste at the beginning of the year' + 'Hazardous waste generated during the year' + 'Hazardous waste imported during the year' - 'Hazardous waste exported during the year' - 'Hazardous waste treated or disposed of during the year' = 'Stock of hazardous waste at the end of the year'.

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In principle, the sum of the amounts of hazardous waste going to: 'Recycling' + 'Incineration' + 'Landfilling' + 'Other' 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.

Table R3: Management of Municipal Waste

This table focuses on management of municipal waste. The total amount of 'Municipal waste collected' is the amount that is effectively collected/removed from households and other origins by or on behalf of municipalities (by public or private companies).

In some instances, part of the municipal waste collected may be exported to other countries before treatment. Countries may also have imported municipal waste for treatment or disposal. The total amount of 'Municipal waste managed in the country' is calculated as: municipal waste collected in the country - municipal waste exported + municipal waste imported.

In principle, the sum of the amounts going to 'Recycling' + Composting' + 'Incineration' + 'Landfilling' + 'Other' should be equal to the amount of 'Municipal waste managed in the country'. Nevertheless, as there can be double counting due to secondary waste quantities (e.g., residues of incineration which are landfilled or residues from composting which are incinerated), the sum can be higher than the amounts to be managed.

The 'Percentage of total population served by municipal waste collection' is usually estimated using the percentage of addresses in the municipalities from where waste is collected. It is expressed as a percentage of the total population. Similarly, the urban population served is expressed as a percentage of the total urban population, and the rural population served is expressed as a percentage of the total rural population. Apply national definition for "urban" and "rural" population.

The formulas for "Percentage of population (total, urban, rural) served by municipal waste collection" can be expressed as:

$$P_{\text{total}} = T_s / T = (U_s + R_s) / (U + R),$$

$$P_{\text{urban}} = U_s / U,$$

$$P_{\text{rural}} = R_s / R,$$

where T_s = Total population served, T = Total population, U_s = urban population served, U = urban population, R_s = rural population served, R = rural population.

The relationship between these three values is normally: $P_{\text{rural}} < P_{\text{total}} < P_{\text{urban}}$.

Table R4: Composition of Municipal Waste

Municipal waste is composed of a mix of different materials. Usually, the composition of municipal waste is determined from the physical analysis of waste samples. The table asks for the percentages of the mass of the main material groups in mixed municipal waste. If only the composition of household waste is available, provide the information in a footnote.

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Table R5: Management of Municipal Waste — City Data

This table aims to provide a comprehensive picture of the collection, treatment and disposal of municipal waste at local level. Countries are kindly asked to provide data for the most populous cities of the country. Duplicate this table if you can provide data for additional cities.

Table R6: Supplementary Information Sheet

Provide national definitions for waste, hazardous waste and municipal waste if they are different from the definitions provided by UNSD, and any additional information that can help the interpretation of your data, such as survey methods applied, quality statements on the data, etc.

In addition, countries are encouraged to provide or attach any complementary source of information such as website addresses, publications, results of surveys, etc., related to the waste topic, particularly if countries encountered difficulties filling in the questionnaire.

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List of Definitions

Industry Classification

This questionnaire asks for data on the total amount of waste (both non-hazardous and hazardous), generated by various economic activities and households. The sectoral breakdown follows the International Standard Industrial Classification of all Economic Activities (ISIC Rev.4). For the full classification, see <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27>.

ISIC Code(s)	Questionnaire abbreviation	ISIC Rev. 4
A 01-03	Agriculture, forestry and fishing	Agriculture, forestry and fishing cover crop and animal production, hunting and related service activities, forestry and logging, fishing and aquaculture. This section includes the exploitation of vegetal and animal natural resources, comprising the activities of growing of crops, raising and breeding of animals, harvesting of timber and other plants, animals or animal products from a farm or their natural habitat.
B 05-09	Mining and quarrying	Mining and quarrying include the extraction of minerals occurring naturally as solids (coal and ores), liquids (petroleum) or gases (natural gas). Extraction can be achieved by different methods such as underground or surface mining, well operation, seabed mining etc. This section also includes supplementary activities aimed at preparing the crude materials for marketing, which are often carried out by the units that extracted the resource and/or others located nearby.
C 10-33	Manufacturing	Manufacturing includes the physical or chemical transformation of materials, substances, or components into new products. The materials, substances, or components transformed are raw materials that are products of agriculture, forestry, fishing, mining or quarrying as well as products of other manufacturing activities. Substantial alteration, renovation or reconstruction of goods is generally considered to be manufacturing.
D 35	Electricity, gas, steam and air conditioning supply	This section includes the activity of providing electric power, natural gas, steam, hot water and the like through a permanent infrastructure (network) of lines, mains and pipes. The dimension of the network is not decisive; also included are the distribution of electricity, gas, steam, hot water and the like in industrial parks or residential buildings. This section therefore includes the operation of electric and gas utilities, which generate, control and distribute electric power or gas. Also included is the provision of steam and air-conditioning supply. This section excludes the operation of water and sewerage utilities. This section also excludes the (typically long-distance) transport of gas through pipelines.
E 38	Waste collection, treatment and disposal activities; materials recovery	This division includes the collection, treatment, and disposal of waste materials. This also includes local hauling of waste materials and the operation of materials recovery facilities (i.e., those that sort recoverable materials from a waste stream).
F 41-43	Construction	Construction includes general construction and specialized construction activities for buildings and civil engineering works. It includes new work, repair, additions and alterations, the erection of prefabricated buildings or structures on the site and also construction of a temporary nature.
E 36, 37, 39 G-U 45-99	Other economic activities excluding ISIC 38	For the purpose of the questionnaire, other economic activities excluding ISIC 38 refer to all other economic activities not specified before.

Definitions for Waste

Table	Term	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.
R1, 1	(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.
R1, 2	(Waste from) Mining and quarrying	All waste from mining and quarrying activities. This category refers to ISIC divisions 05 to 09.
R1, 3	(Waste from) Manufacturing	All waste from manufacturing activities. This category refers to ISIC divisions 10 to 33.
R1, 4	(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.
R1, 5	(Waste from) Construction	All waste from construction activities. This category refers to waste generated in ISIC division 41 to 43.
R1, 6	(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.
R1, 7	(Waste from) Households	Waste material usually generated in the normal functioning of households.
R2, R3 & R5	Management of waste	Collection, transport, treatment and disposal of waste, including after-care of disposal sites.
R2	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).
R2, 6; R3, 7 & R5, 6	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.
R2, 7; R3, 9 & R5, 8	Incineration	The controlled combustion of waste with or without energy recovery.
R2, 8; R3, 11 & R5, 10	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.

Definitions for Waste

Table	Term	Definitions
R2, 9	Other (waste treatment/disposal for hazardous waste)	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.
R3, R4 & R5	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.
R3, 3 & R5, 5	Total amount of municipal waste collected	Municipal waste collected by or on behalf of municipalities, as well as municipal waste collected by the private sector. It includes mixed waste, and fractions collected separately for recovery operations (through door-to-door collection and/or through voluntary deposits).
R3, 6	Municipal waste managed in the country	The amount of municipal waste collected in the country - amount exported before treatment or disposal + amount imported for treatment or disposal.
R3, 8 & R5, 7	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.
R3, 10 & R5, 9	Incineration with energy recovery	Incineration in which evolving thermal energy is used for the production of steam, hot water or electric energy.
R3, 12 & R5, 11	Controlled landfilling	Final placement of waste into or onto the land in a controlled landfill site.
R3, 14-16 & R5, 2	Population (total, urban, rural) served by municipal waste collection	The proportion of the total, urban and rural population covered by regular municipal waste removal service in relation to the total, urban and rural population, respectively, of the country or the city.
R3, 13 & R5, 12	Other (waste treatment/disposal)	Any final treatment or disposal different from recycling, composting, incineration and landfilling. Releasing into water bodies and permanent storage are included here.

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Table R1: Generation of Waste by Source

• Unhide to view/edit previous years

• If the value turns red, please check if it is correct.

Line	Category	Unit	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
1	Agriculture, forestry and fishing (ISIC 01-03)	1000 t												
2	Mining and quarrying (ISIC 05-09)	1000 t												
3	Manufacturing (ISIC 10-33)	1000 t												
4	Electricity, gas, steam and air conditioning supply (ISIC 35)	1000 t												
5	Construction (ISIC 41-43)	1000 t												
6	Other economic activities excluding ISIC 38	1000 t												
7	Households	1000 t												
8	Total waste generation (=1+2+3+4+5+6+7)	1000 t												

Notes:

- 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 7) and total waste generation (line 8). If data do not cover all waste sources, please leave the total waste generation cell blank (line 8).
- 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".
- Please provide in the Footnotes Section below information on the source and data collection methodology for the values provided, such as estimation methods (if any), and the titles of the original sources (e.g., surveys or administrative records).
- Data can also be viewed/edited for years 1996 -1999. Select column H to column T, right-click, and select "Unhide".

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Footnotes

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Table R2: Management of Hazardous Waste

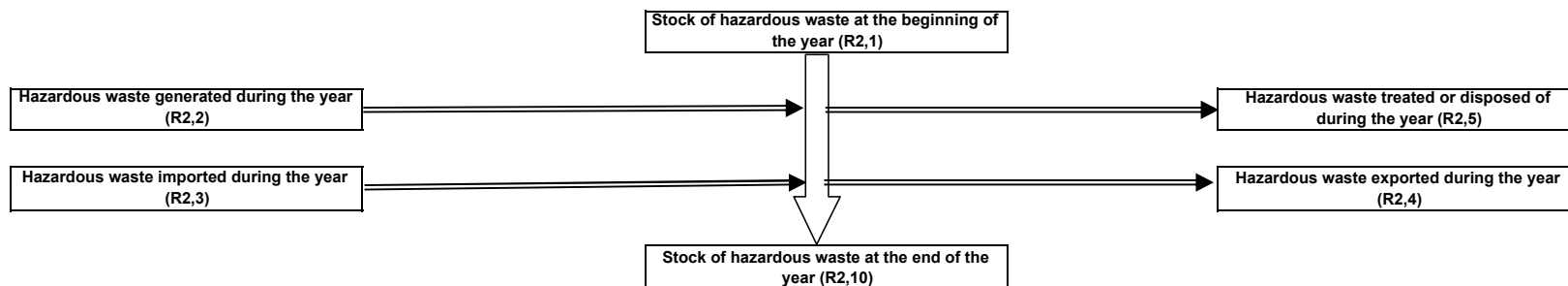
• Unhide to view/edit previous years

• If the value turns red, please check if it is correct.

Line	Category	Unit	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
1	Stock of hazardous waste at the beginning of the year	tonnes												
2	Hazardous waste generated during the year	tonnes												
3	Hazardous waste imported during the year	tonnes												
4	Hazardous waste exported during the year	tonnes												
5	Hazardous waste treated or disposed of during the year	tonnes												
6	<i>Amounts going to:</i> Recycling	tonnes												
7	Incineration	tonnes												
8	Landfilling	tonnes												
9	Other, please specify in the footnote	tonnes												
10	Stock of hazardous waste at the end of the year (=1+2+3-4-5)	tonnes												

Notes:

- Please note that the unit in this table is **tonnes (metric tons)**.
- 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".
- Please provide in the Footnotes Section below information on the source and data collection methodology for the values provided, such as estimation methods (if any), and the titles of the original sources (e.g., surveys or administrative records).
- Data can also be viewed/edited for years 1996 -1999. Select column H to column T, right-click, and select "Unhide".
- **Diagram:**



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Table R3: Management of Municipal Waste

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• If the value turns red, please check if it is correct.

Line	Category	Unit	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
1	Municipal waste collected from households	1000 t												
2	Municipal waste collected from other origins	1000 t												
3	Total amount of municipal waste collected (=1+2)	1000 t												
4	Municipal waste imported for treatment/disposal	1000 t												
5	Municipal waste exported for treatment/disposal	1000 t												
6	Municipal waste managed in the country (=3+4-5)	1000 t												
7	<i>Amounts going to:</i> Recycling	1000 t												
8	Composting	1000 t												
9	Incineration	1000 t												
10	<i>of which: with energy recovery</i>	1000 t												
11	Landfilling	1000 t												
12	<i>of which: controlled landfilling</i>	1000 t												
13	Other, please specify in the footnote	1000 t												
14	Total population served by municipal waste collection	%												
15	Urban population served by municipal waste collection	%												
16	Rural population served by municipal waste collection	%												

Note:

- For line 1-13, 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".
- For line 14-16, if the requested data are not available or the country does not have rural (or urban) population, please leave the cell blank.
- Please provide in the Footnotes Section below information on the source and data collection methodology for the values provided, such as estimation methods (if any), and the titles of the original sources (e.g., surveys or administrative records).
- Data can also be viewed/edited for years 1996 -1999. Select column H to column T, right-click, and select "Unhide".

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Table R4: Composition of Municipal Waste

• Unhide to view/edit previous years

• If the value turns red, please check if it is correct.

Line	Category	Unit	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
1	Paper, paperboard	%												
2	Textiles	%												
3	Plastics	%												
4	Glass	%												
5	Metals	%												
6	Other inorganic material	%												
7	Organic material	%												
8	<i>of which</i> : food and garden waste	%												
9	TOTAL	%	100	100	100	100	100	100	100	100	100	100	100	100

Note:

- 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".
- Please provide in the Footnotes Section below information on the source and data collection methodology for the values provided, such as estimation methods (if any), and the titles of the original sources (e.g., surveys or administrative records).
- Data can also be viewed/edited for years 1996 -1999. Select column H to column T, right-click, and select "Unhide".

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City name: _____

Table R5: Management of Municipal Waste — City Data

• Unhide to view/edit previous years

• If the value turns red, please check if it is correct.

Line	Category	Unit	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
1	Total population of the city	1000 inh.												
2	Percentage of city population served by municipal waste collection	%												
3	Municipal waste collected from households	1000 t												
4	Municipal waste collected from other origins	1000 t												
5	Total amount of municipal waste collected (=3+4)	1000 t												
6	<i>Amounts going to:</i> Recycling	1000 t												
7	Composting	1000 t												
8	Incineration	1000 t												
9	<i>of which: with energy recovery</i>	1000 t												
10	Landfilling	1000 t												
11	<i>of which: controlled landfilling</i>	1000 t												
12	Other, please specify in the footnote	1000 t												

Notes:

- Countries are kindly asked to provide data for the most populous cities of the country. Please duplicate this table if you can provide data for additional cities.
- 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".
- Please provide in the Footnotes Section below information on the source and data collection methodology for the values provided, such as estimation methods (if any), and the titles of the original sources (e.g., surveys or administrative records).
- Data can also be viewed/edited for years 1996 -1999. Select column H to column T, right-click, and select "Unhide".

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Table R6: Supplementary Information Sheet

Please insert national definitions for waste, hazardous waste, municipal waste and other complementary information on waste.
Waste:
Hazardous waste:
Municipal waste:
Please insert any additional information that can help the interpretation of your data, such as survey methods applied, quality statements on the data, etc.
Please describe the difficulties encountered in filling in the questionnaire.