



# Waste Statistics Manual

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## Contents

Topics	Page
Introduction	5
International Standards for Waste Sector	6
Chapter one: Waste Generation	11
Chapter Two: Hazardous Waste Management	15
Chapter Three: Municipal Waste Management	25
Chapter Four: Composition of Municipal Waste	35
Chapter Five : Management of Municipal Waste — City Data	41
Chapter Six: Other waste (Industrial Waste)	45
Chapter Seven: Wastes Sector Infrastructure	49
Manual Sources	53
Annexes	55

## Introduction

Waste statistics are considered the most important environment indicators that are provided by national statistical centres, bodies and institutions specialized in the waste sector.

These indicators play an important role in the economic and social planning in the countries of the Gulf Cooperation Council (GCC) due to the increasing population growth, urbanization and the industrial revolution witnessed by the region. All of these factors eventually lead to the increasing production of various types of wastes from the various economic sectors. Reducing the amount of waste generated, recycling and storing it in a safe manner are the basic requirements sought by the Gulf Cooperation Council (GCC) countries, which aim in the future to develop a mechanism that utilises waste to generate energy, such as electricity, in line with the sustainable development goals and policies in the region.

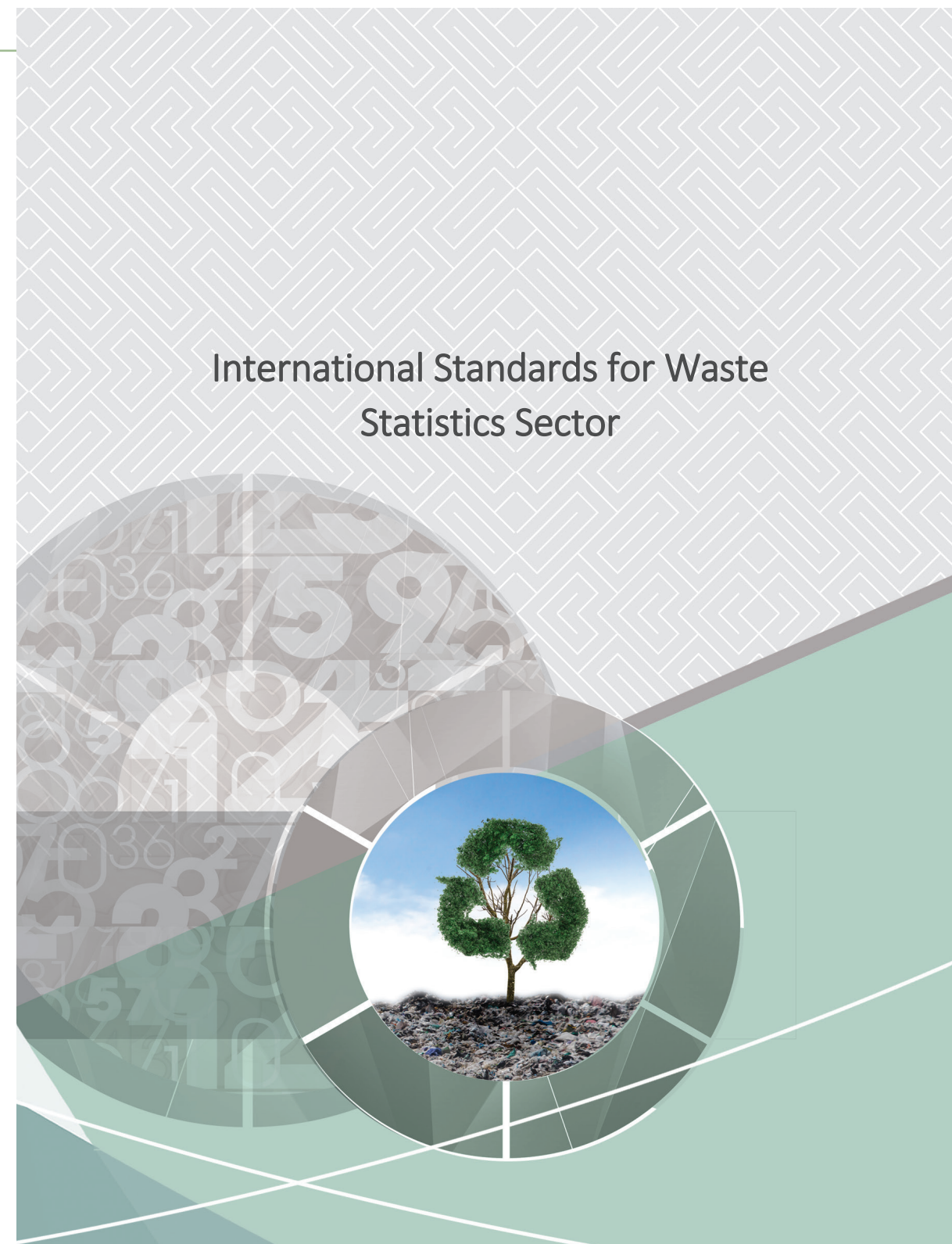
Given the importance of a manual on waste statistics, the Statistical Center of the Gulf Cooperation Council GCC-Stat, has prepared this manual that comprises the concepts and codes of economic activities that generate and dispose of the waste. The scope of this manual also covers waste products. The manual is divided into seven chapters,



which are the production of waste, hazardous waste management, municipal waste management, and the composition of municipal waste, municipal waste management - data on the level of the city, other waste / industrial waste and finally waste infrastructures.

Each chapter has a table that demonstrates the waste variables and their international classification symbols as per the International Standard Industrial Classification of All Economic Activities (ISIC), the Framework for Development of Environment Statistics, Eurostat encoding for waste products and the Basel Convention. The manual also contains the international definitions derived from the United Nations Statistics Division Form.

## International Standards for Waste Statistics Sector



## Framework for Development of Environment Statistics (FDES)

The FDES 2013 covers issues and aspects related to the environment for the purpose of analysis and policy and decision-making. It is designed to assist all countries in the formulation of environment statistics programmes by: (i) delineating the scope of environment statistics and identifying its constituents; (ii) contributing to the assessment of data requirements, sources, availability and gaps; (iii) guiding the development of multipurpose data collection processes and databases; and (iv) assisting in the co-ordination and organization of environment statistics, given the inter-institutional nature of the domain.

## International Standard Industrial Classification of All Economic Activities (ISIC.4)

ISIC rev 4 is the international reference classification of productive activities. Its main purpose is to provide a set of activity categories that can be utilized for the collection and reporting of statistics according to the activities involved.

## Basel Convention

The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal, commonly known as Basel Convention, is an international treaty intended to restrict and control international transport of hazardous waste. There are three instruments that have been added to the convention: The Ban Amendment, the Basel Protocol on Liability and Compensation for Damage Resulting from Trans-boundary Movements of Hazardous Waste, and the Framework for Environmentally Sound Management of hazardous waste and other waste.

Basel Convention is the most comprehensive global environmental agreement on hazardous and other wastes. It aims to protect human health and the environment against the adverse effects resulting from the generation, management, trans-boundary movements and disposal of hazardous and other wastes.

The Basel Convention regulates the trans-boundary movements of hazardous and other wastes and obliges its Parties to ensure that such wastes are managed and disposed of in an environmentally sound manner. The Convention covers toxic, poisonous, explosive, corrosive, flammable, eco-toxic and infectious wastes. Parties are also expected to minimize the quantities that are transported, to treat and dispose of wastes as close as possible to their place of generation and to prevent or minimize the generation of wastes at source.



## Chapter One: Waste Generation

### Generation of Waste by Source

Statistics on the amount and type of waste generated should be reported by the establishments (economic units) that generate it.

The broad waste categories frequently used in waste statistics, such as municipal, industrial and hazardous waste, combine and classify many different waste materials into categories based on the similarity of methods used in their collection, treatment and disposal.

Depending on the priorities and availability of resources, rather than estimating the total amount of waste generation, countries may prefer to focus on certain waste types that are important to them.

Countries may also wish to estimate the amount of waste generated by specific sectors or population groups, such as tourists.

**Table (1): Generation of Waste by Source**

Category	FDES Code	ISIC Code
Agriculture, forestry and fishing Waste	<b>3.3.1.a.1</b>	<b>01 to 03.</b>
Mining and quarrying waste	<b>3.3.1.a.2</b>	<b>05 to 09</b>
Manufacturing Waste	<b>3.3.1.a.2</b>	<b>10 to 33</b>
Electricity, gas, steam and air conditioning supply Waste	<b>3.3.1.a.4</b>	<b>35</b>
Construction and Demolition Waste	<b>3.3.1.a.5</b>	<b>41 to 43.</b>
Other economic activities excluding ISIC 38	<b>3.3.1.a.6</b>	<b>36 to 39, and 45 to 99.</b>
Households Waste	<b>3.3.1.a.7</b>	<b>97 &amp;98</b>

**Table (2): Generation of Waste by Sources**

Category	Definition
<b>Agriculture, forestry and fishing waste</b>	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).
<b>Mining and quarrying waste</b>	All waste from mining and quarrying activities.
<b>Manufacturing Waste</b>	All waste from manufacturing activities.
<b>Electricity, gas, steam and air conditioning supply Waste</b>	All waste from electricity, gas, steam and air conditioning supply. Waste from the production of nuclear energy should be excluded.
<b>Construction and Demolition Waste</b>	All waste from construction and demolition activities.
<b>Other economic activities excluding ISIC 38</b>	All other economic activities not specified above.
<b>Households Waste</b>	Waste material usually generated in the normal functioning of households.



## Chapter Two: Hazardous Waste Management

### Hazardous Waste Management

Hazardous waste is a special group of waste that, due to its toxic or other hazardous nature, requires special management and is controlled by law in many countries.

The Basel Convention, focuses on the control of trans-boundary movements of hazardous waste across international borders and establishes criteria for the environmentally sound management of such waste.

Reporting needs under this convention include the generation of hazardous waste, as well as the imports and exports of hazardous waste.



Table (3): Hazardous Waste Generation

Category	FDES Code	ESC-Stat code	Basel Convention Code
Stock of hazardous waste at the beginning of the year	NA	NA	NA
Hazardous waste generated during the year	c.3.3.1	NA	NA
<ul style="list-style-type: none"> <li>Medical hazardous waste generated</li> </ul>	NA	05	Y1-Y3
<ul style="list-style-type: none"> <li>Industrial hazardous waste generated</li> </ul>	NA	3.2	Y18
<ul style="list-style-type: none"> <li>Other hazardous waste generated</li> </ul>	NA	All except 05 and 3.2 (c.f. Annex2)	Y4-Y17, Y19-Y45

Table (4): Hazardous Waste Generation

Category	Definition
<b>Stock of hazardous waste at the beginning of the year</b>	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.
<b>Hazardous waste generated during the year</b>	Total Hazardous waste generated from substances unsafe to use commercially, industrially, agriculturally, or economically and has any of the following properties- ignitability, corrosively, reactivity & toxicity.
<b>Medical hazardous waste generated</b>	Solid or liquid wastes including containers, intermediate or end products generated during diagnosis, treatment & research activities of medical sciences.
<b>Industrial hazardous waste generated</b>	Liquid and solid wastes that are generated by manufacturing & processing units of various industries like chemical, petroleum, coal, metal, gas, sanitary & paper etc.
<b>Other hazardous waste generated</b>	<p><b>Radioactive waste:</b> Waste containing radioactive materials. Usually these are byproducts of nuclear processes. Industries that are not directly involved in nuclear activities, may also produce some radioactive wastes, e.g. radio-isotopes, chemical sludge etc.</p> <p><b>E-waste:</b> Electronic wastes generated from any modern establishments. They may be described as discarded electrical or electronic devices. Some electronic scrap components, such as CRTs, may contain contaminants such as Pb, Cd, Be or brominated flame retardants.</p>

**Table (5): Hazardous Waste Collected**

Category	FDES Code	EWC-Stat code	Basel Convention Code
<b>Total of Hazardous waste collected</b>	3.3.2.b	NA	NA
<b>Medical hazardous waste collected</b>	NA	05	Y1-3
<b>Industrial hazardous waste collected</b>	NA	3.2	Y18
<b>Other hazardous waste collected</b>	NA	Annex2	Y4-Y17, Y19-Y45
<b>Hazardous waste imported during the year</b>	3.3.2.g	5	2.11
<b>Hazardous waste exported during the year</b>	3.3.2.h	5	2.10

**Table (6): Hazardous Waste Collected**

Category	Definition
<b>Total of Hazardous waste collected</b>	Total Hazardous waste collected from substances unsafe to use commercially, industrially, agriculturally, or economically and has any of the following properties- ignitability, corrosively, reactivity & toxicity.
<b>Hazardous waste imported during the year</b>	Hazardous wastes imported by a country for the purpose of disposal or recovery
<b>Hazardous waste exported during the year</b>	Hazardous wastes exported by a country for the purpose of disposal or recovery

**Figure (1): Hazardous Waste Collected**





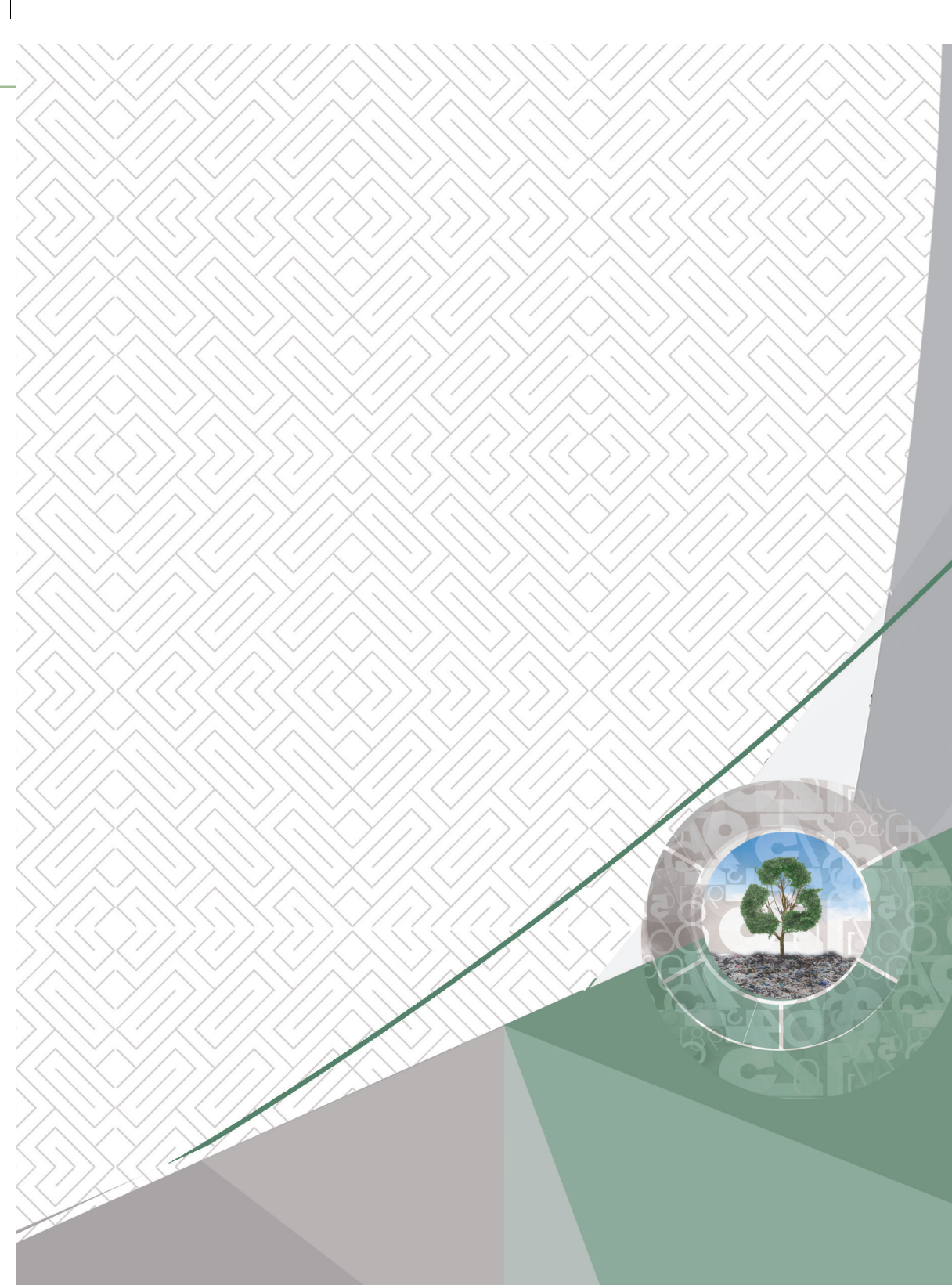
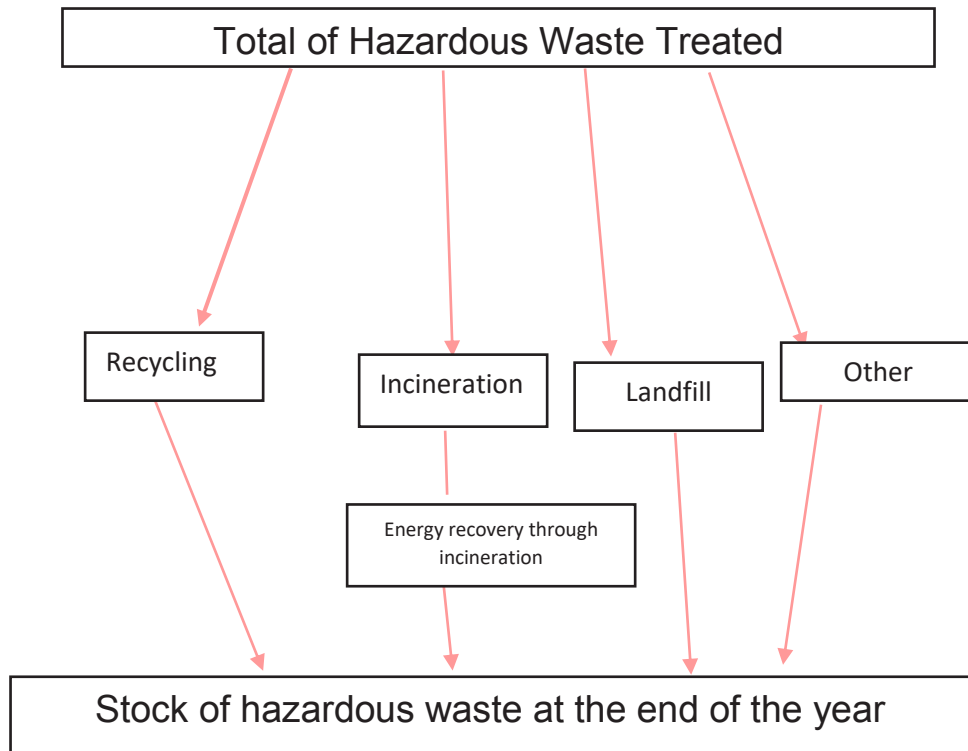
Table (7): Hazardous Waste Treated

Category	FDES Code	EWC-Stat / Basel Convention Code
Total Hazardous Waste Treated of which:	3.3.2.b.2	NA
▪ <b>Recycling</b>	3.3.2.b.2	R2-R11
▪ <b>Incineration of which:</b>	3.3.2.b.2	D10
• <b>Energy recovery from incineration</b>	3.3.2.b.2	R1
▪ <b>Landfilling</b>	3.3.2.b.2	D1 ,D5, D12
▪ <b>Other Waste Treatment/Disposal Methods</b>	3.3.2.b.2	D2, D3, D6, D7
Stock of hazardous waste at the end of the year	NA	NA

Table (8): Hazardous Waste Treated

Category	Definition
<b>Total Hazardous Waste Treated of which:</b>	Total Hazardous waste treated from substances unsafe to use commercially, industrially, agriculturally, or economically and has any of the following properties- ignitability, corrosively, reactivity & toxicity
▪ <b>Recycling</b>	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.
▪ <b>Incineration of which:</b>	The controlled combustion of waste with or without energy recovery.
• <b>Energy recovery through incineration</b>	The process of converting waste into usable heat or electricity through incineration
▪ <b>Landfilling</b>	Final placement of waste into or onto the land in a controlled or uncontrolled way. The definition covers both landfill 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.
▪ <b>Other Treatment/ Waste Disposal Methods</b>	Any final treatment or disposal different from recycling, incineration and landfill. Releasing into water bodies and permanent storage are included here.
<b>Stock of hazardous waste at the end of the year</b>	'Stock of hazardous waste at the end 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 beginning of the year.'

**Figure (2): Hazardous Waste Treated**





## Chapter Three: Municipal Waste Management

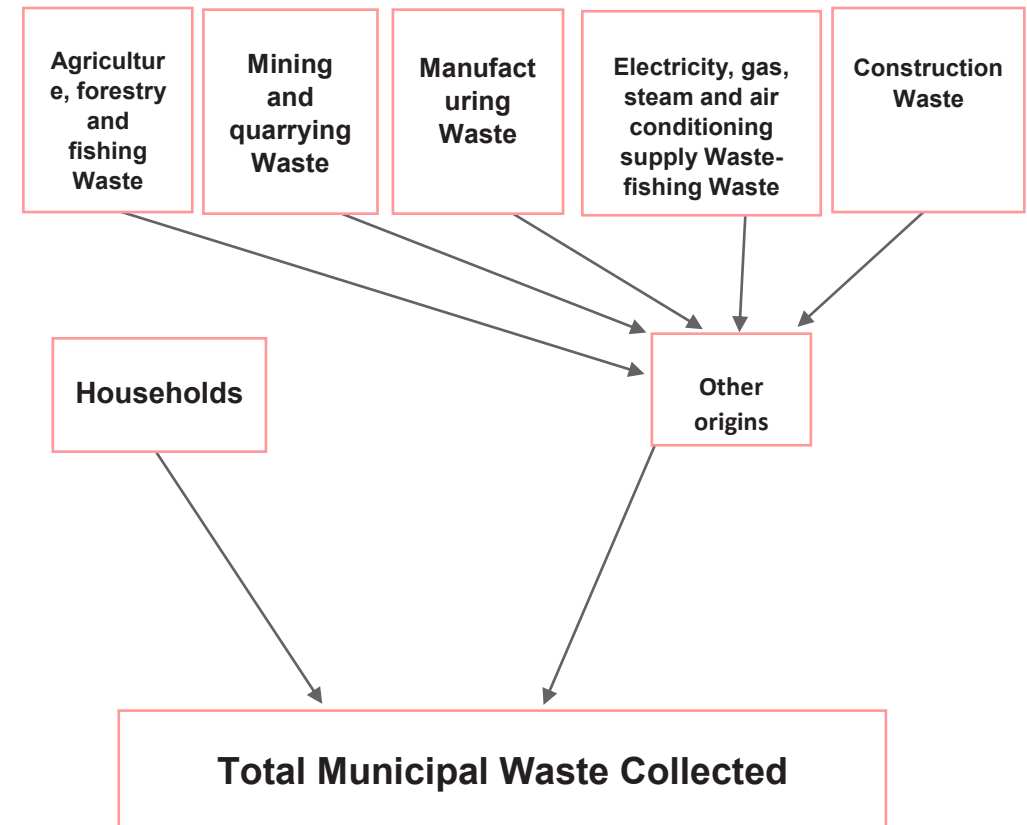
### Municipal Waste Management

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., appliances, 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 its treatment, municipal construction and demolition waste.

**Table (9): Municipal Waste Management**

Category	FDES Code	EWC-Stat Code	ISIC Code
Municipal waste collected from households	3.3.2.a.1	10.1	NA
Municipal waste collected from other origins	3.3.2.a.1	10.1	NA
Agriculture, forestry and fishing Waste	NA	NA	01-03
Mining and quarrying Waste	NA	NA	05-09
Manufacturing Waste	NA	NA	10-33
Electricity, gas, steam and air conditioning supply Waste	NA	NA	35
Construction Waste	NA	NA	41-43
Other economic activities waste excluding ISIC 38	NA	NA	36 to 39, and 45 to 99
Total amount of municipal waste collected	3.3.2.a.1	NA	NA

**Figure (3): Municipal Waste Collected**





**Table (10): Municipal waste managed in the country**

Category	FDES Code	EWC-Stat Code	ISIC Code
Municipal waste imported for treatment/disposal	3.3.2.e	5	NA
Municipal waste exported for treatment/disposal	3.3.2.f	5	NA
Municipal waste managed in the country	NA	NA	NA

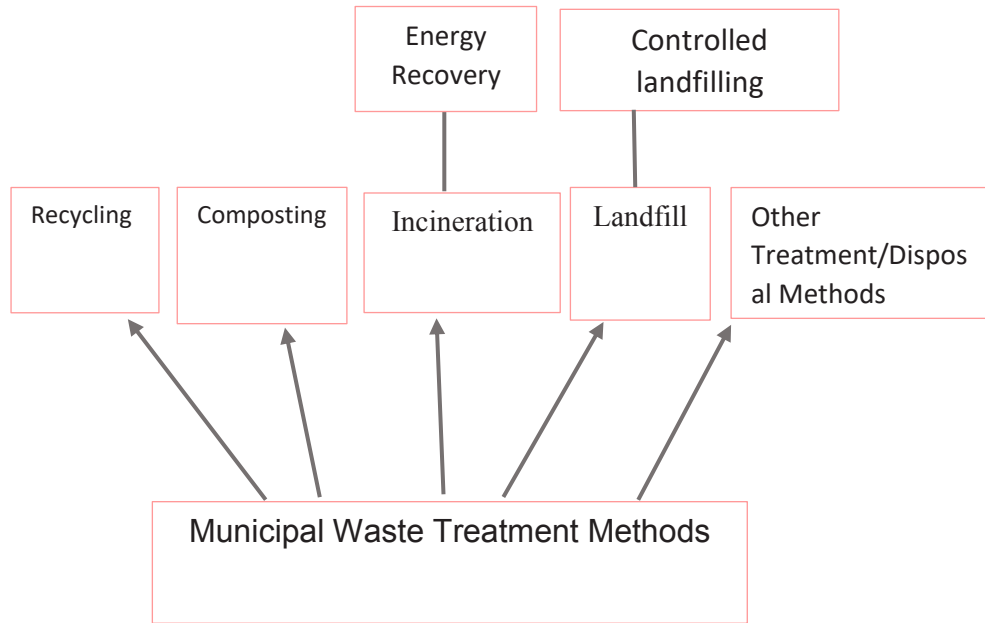
**Figure (4): Municipal Waste Managed in the Country**



**Table (11): Municipal Waste Treatment Methods**

Category	FDES Code	EWC-Stat Code	ISIC Code
Amounts going to:			
▪ Recycling	3.3.2.a.2	R2 — R11	4669
▪ Composting	3.3.2.a.2	NA	3821
▪ Incineration of which:	3.3.2.a.2	D10	382
• Quantities for energy extraction	3.3.2.a.2	R1	382
▪ Landfilling	3.3.2.a.2	D1 ,D5, D12	382
of which: controlled landfilling	3.3.2.a.2	NA	382
▪ Other Treatment/Disposal Methods	3.3.2.a.2	D2, D3, D6, D7	382

**Figure (5): Municipal Waste Treatment Methods**



**Table (12): Total population served by municipal waste collection**

Category	FDES Code
Total population served by municipal waste collection	5.1.2.c
Urban population served by municipal waste collection	5.1.2.c
Rural population served by municipal waste collection	5.1.2.c

**Figure (6): Population served by municipal waste collection**



**Table (13): Municipal Waste Management**

Category	Definition
<b>Municipal waste collected from households</b>	Waste material usually collected in the normal functioning of households.
<b>Agriculture, forestry and fishing</b>	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).
<b>Mining and quarrying</b>	All waste from mining and quarrying activities.
<b>Manufacturing</b>	All waste from manufacturing activities.
<b>Electricity, gas, steam and air conditioning supply</b>	All waste from electricity, gas, steam and air conditioning supply. Waste from the production of nuclear energy should be excluded.
<b>Construction</b>	All waste from construction and demolition activities.
<b>Other economic activities excluding ISIC 38</b>	All other economic activities not specified before.
<b>Total amount of municipal waste collected</b>	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 in specified collection sites)
<b>Municipal waste imported for treatment/disposal</b>	Municipal waste that is imported by a country for the purpose of disposal or treatment
<b>Municipal waste exported for treatment/disposal</b>	Municipal waste that is exported by a country before treatment or disposal
<b>Municipal waste managed in the country</b>	The amount of municipal waste collected in the country - amount exported before treatment or disposal + amount imported for treatment or disposal.

**Continue: Table (13): Municipal Waste Management**

Category	Definition
<b>Amounts going to: Recycling</b>	It is the reprocessing of waste in accordance with the production process to convert waste outside the waste line, with the exception of re-use of waste 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
<b>Landfilling</b>	Final placement of waste into or onto the land in a controlled or uncontrolled way. The definition covers both landfill 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.
<b>Controlled Landfilling</b>	Final placement of waste into or onto the land in a controlled landfill site.
<b>Other Treatment/ Disposal Methods</b>	Any final treatment or disposal different from recycling, composting, incineration and landfill. Releasing into water bodies and permanent storage are included here.
<b>Total population served by municipal waste collection</b>	The percentage of the total, urban and rural resident population covered by regular municipal waste removal service in relation to the total, urban and rural resident population, respectively, of the country or the city.
<b>Urban population served by municipal waste collection</b>	The percentage of the total urban resident population covered by regular municipal waste removal service in relation to the total, urban resident population of the country or the city.
<b>Rural population served by municipal waste collection</b>	The percentage of the total rural resident population covered by regular municipal waste removal service in relation to the total and of the country or the city. rural resident population

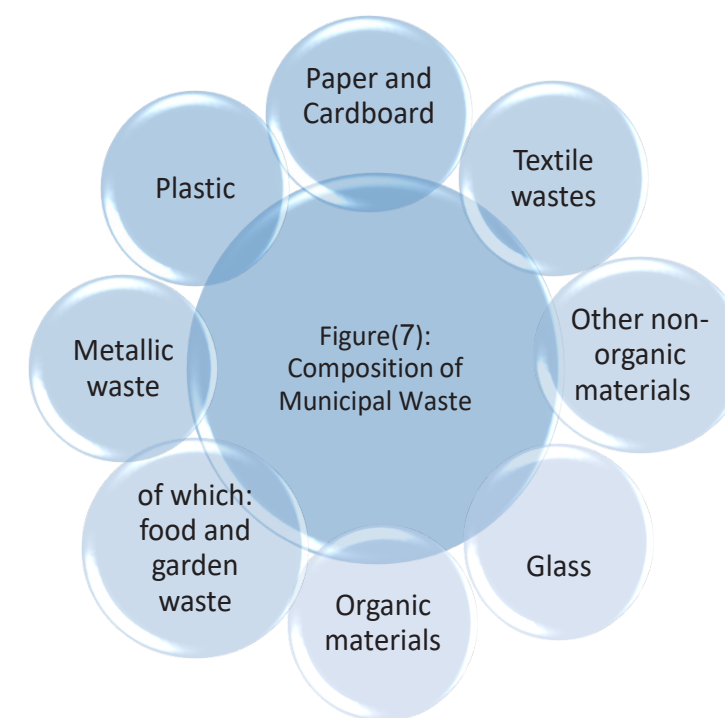


## Chapter Four: Composition of Municipal Waste



### 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. Countries are required to fill in the table with the percentages of the main categories of the components of the municipal waste depending on the availability of data. If the information available is only on the household waste, then countries are required to fill the table with that.



**Table (14): Composition of Municipal Waste**

Composition of Municipal Waste	EWC-Stat Code
Paper and Cardboard	07.2
Textile wastes	07.6
Plastic	07.4
Glass	07.1
Metallic waste	06
Other non-organic materials	All Except code mentioned in this table (annex2)
Organic materials	3.2, 3.3, 05, 12.6
of which: food and garden waste	9

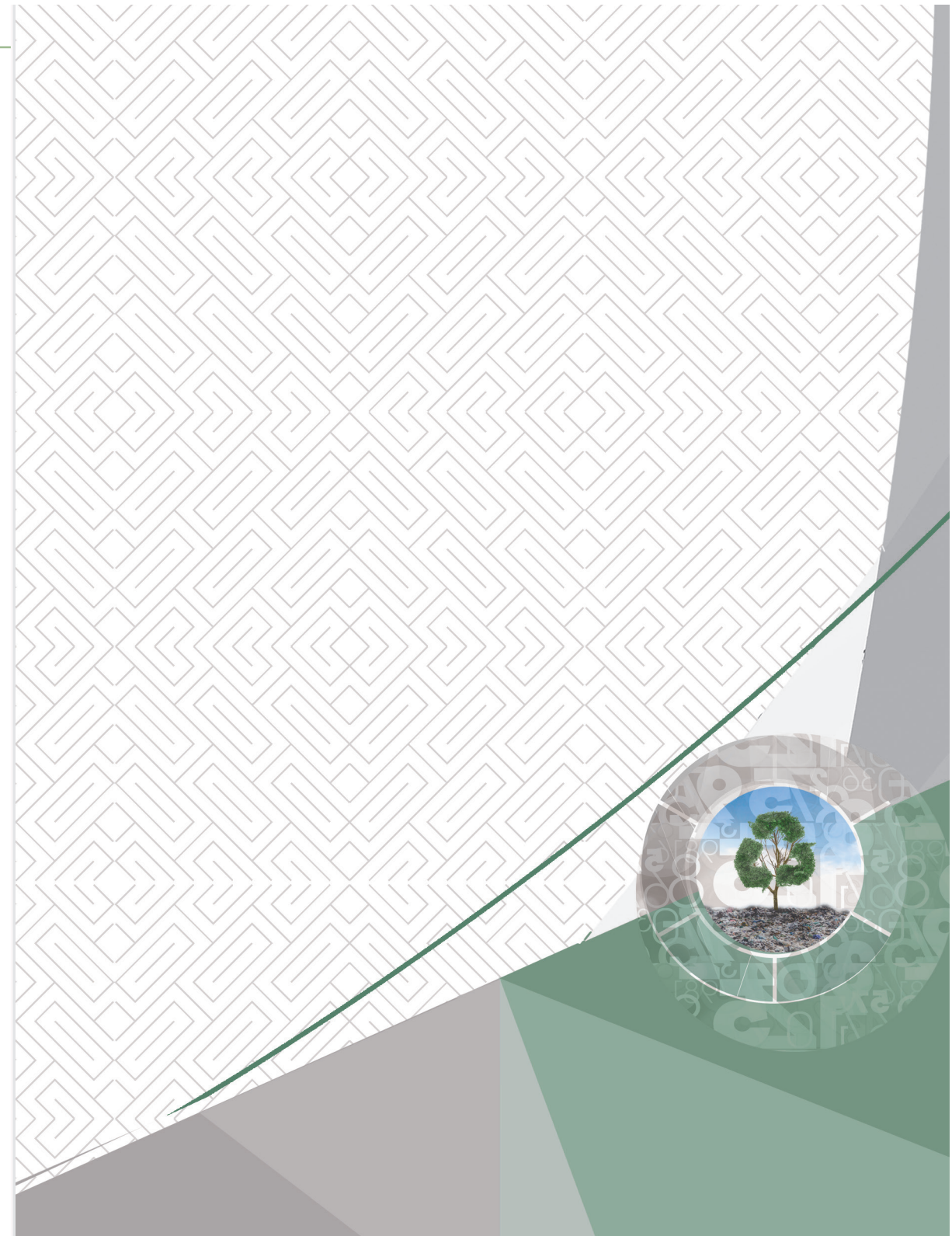
**Table (15): Composition of Municipal Waste**

Category	Definition
<b>Paper and Cardboard</b>	<p>Waste that basically consists of paper and cardboard and it can be generated by any economic activity or from the establishment municipal waste.</p> <p>These wastes are largely generated by three activities: separate collection, mechanical treatment of waste and pulp, and paper and cardboard production and processing.</p> <p>All paper and cardboard wastes are classified as non-hazardous.</p>
<b>Textile wastes</b>	<p>Waste generated by fiber, yarn, and fabrics industries.</p> <p>They originate from only a small number of activities: the leather and fur industry, the textile industry, the mechanical treatment of waste and separate collection.</p> <p>All textile wastes are classified non-hazardous.</p>
<b>Plastic</b>	<p>Waste that basically consists of plastic and it can be generated by any economic activity, such as packaging containers and packaging materials.</p> <p>All plastic wastes are nonhazardous. A distinction should be made between plastic wastes and mixed packaging (mixed and undifferentiated materials)</p>
<b>Glass</b>	<p>Waste that basically consists of glass and it can be generated by any economic activity; such as windows or glass bottles.</p> <p>Glass waste occurs in a small number of production sectors (construction and demolition, recycling of end-of-life vehicles and electrical, electronic equipment and glass manufacturing) and also as a</p>



**Continue: Table (15): Composition of Municipal Waste**

Category	Definition
	<p>result of the separate sorting by businesses and households, but can be generated by all sectors as consumption residues or packaging.</p> <p>Glass wastes are hazardous in case of glass powder (particle size relevant) and when containing heavy metals.</p>
<b>Metallic waste</b>	<p>Waste that basically consists of metal and it can be generated by any economic activity, such as cans, metal scrap, hardware, and building materials.</p> <p>Mixed metal wastes covered are nonhazardous.</p>
<b>Other non-organic materials</b>	<p>Waste that is not from plant or animal origin such as sand, dust and other composite materials.</p>
<b>Organic materials</b>	<p>Waste that is basically from plant or animal origin, such as food remains and garden waste as well as water and wood disposed of by households and industry. Organic waste can be decomposed with oxygen (fertilization) or without oxygen (anaerobic digestion) and in both cases, it can be considered a nutrient for the soil.</p>
<b>of which: food and garden waste</b>	<p>These wastes are vegetal wastes from food preparation and products, including sludge from washing and cleaning, materials unsuitable for consumption and green wastes. They originate from food and beverage production, and from agriculture, horticulture and forestry. Vegetal wastes are non-hazardous.</p>





## Chapter Five: Management of Municipal Waste — City Data

### Management of Municipal Waste — City Data:

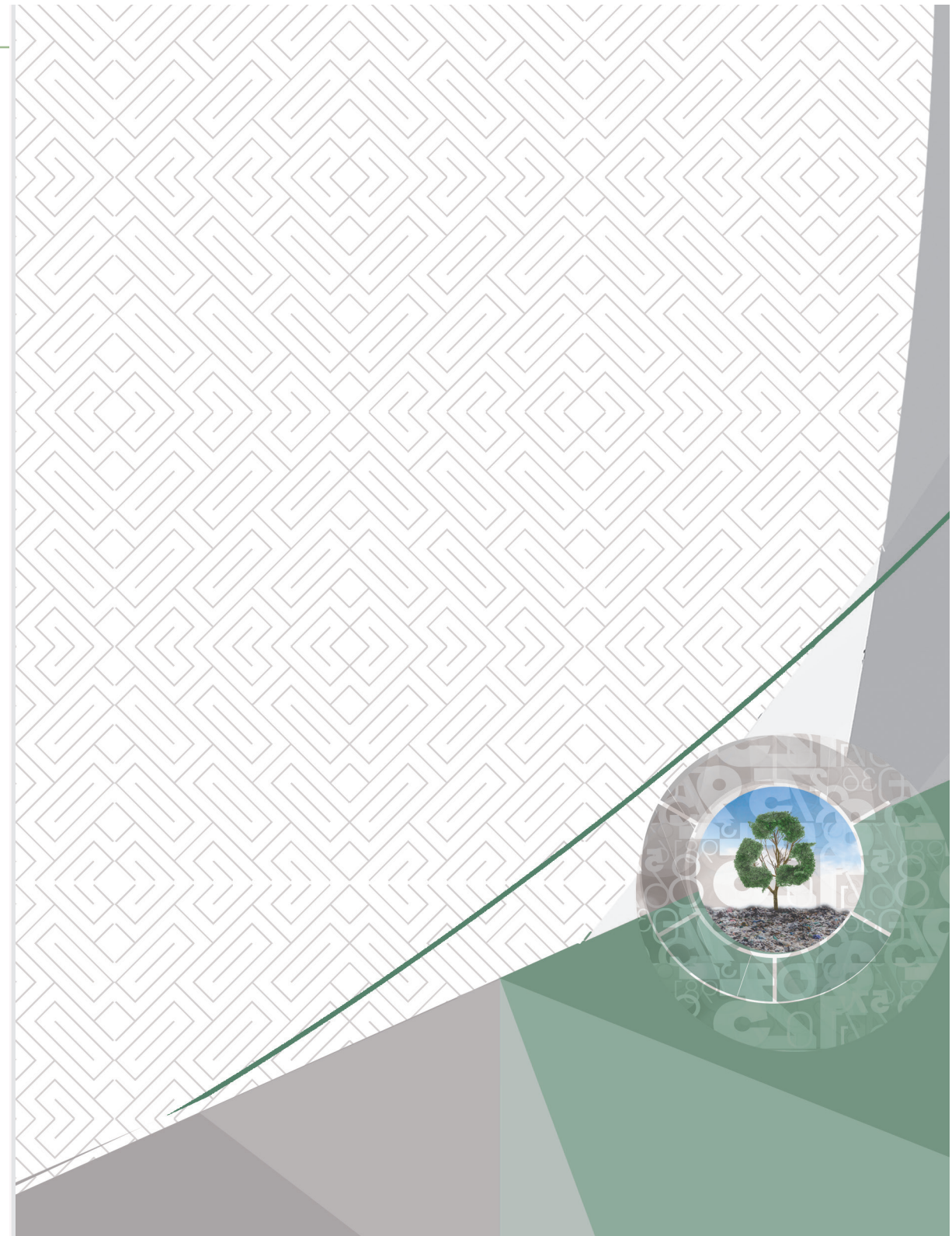
This table aims to provide a comprehensive picture of the collection, treatment and disposal of municipal waste at the local level. Countries are kindly asked to provide data for the most populous cities of the country. A table is to be filled for each city. Countries are also encouraged to provide data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

**Table (16): Management of Municipal Waste — City Data**

Category	Definition
Total population of the city	Total population selected for the study.
Percentage of city population served by municipal waste collection	The percentage of city population covered by regular municipal waste removal service in relation to the total city population.
Total amount of municipal waste collected for specific area	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).

Note:

That remaining variables were discussed in detailed in chapter four





## Chapter Six: Other waste (Industrial Waste)

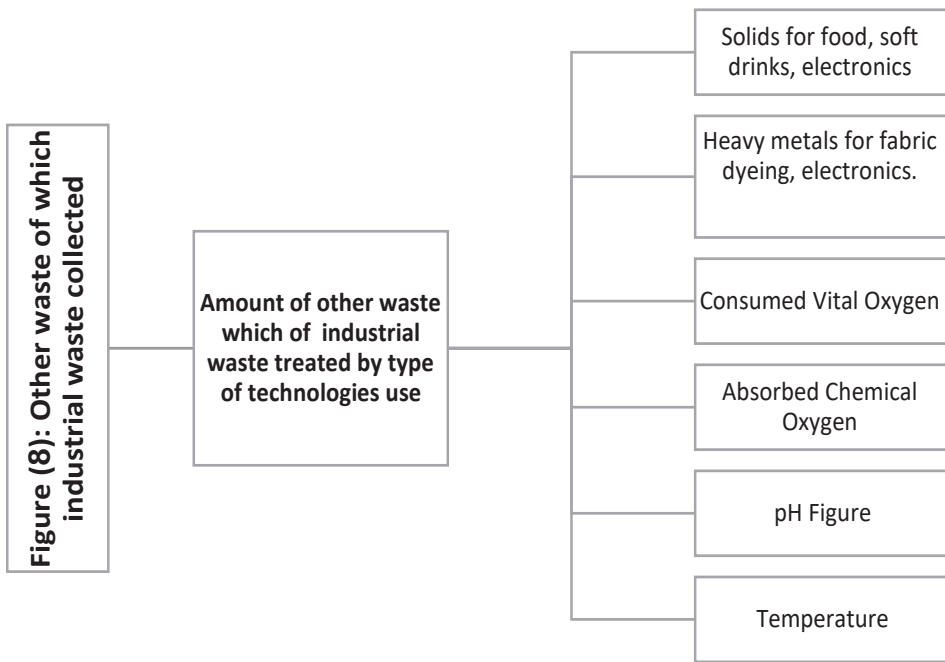
### Other/ Industrial Waste

These statistics describe the amount of industrial waste collected for treatment or disposal.

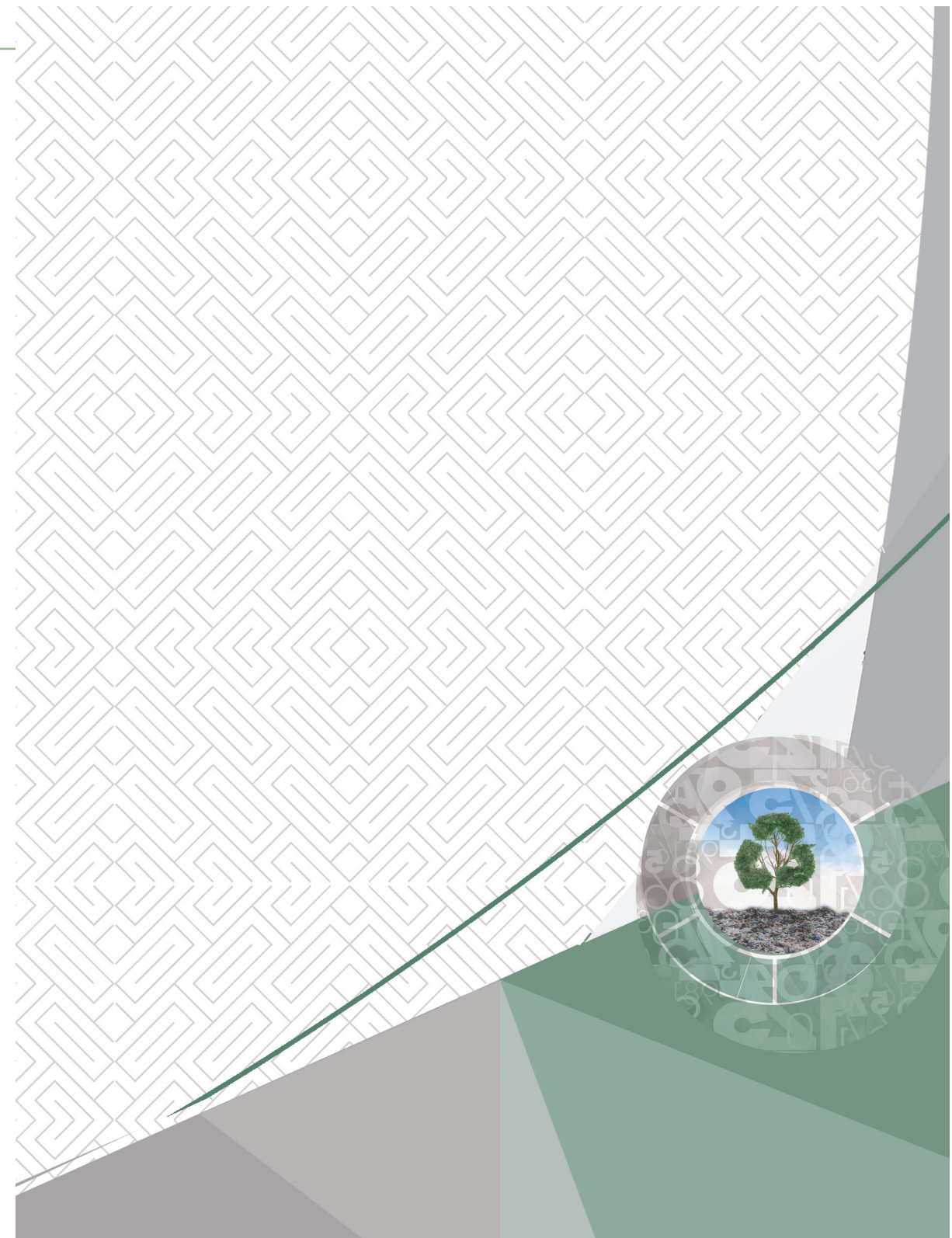
**Table (17): Other waste (Industrial Waste)**

Category	Definition	FDES Code
<b>Total other/industrial waste collected</b>	Means the total waste collected from all industrial and manufacturing activities	3.3.2.c.1
<b>Amount of other/industrial waste treated by type of treatment</b>	Industrial effluents that are subject to a range of physical and chemical analysis before throwing in order to avoid contamination of the environment and these measurements are as follows: <ol style="list-style-type: none"> <li>1. Temperature.</li> <li>2. pH Figure.</li> <li>3. Absorbed Chemical Oxygen</li> <li>4. Consumed Vital Oxygen</li> <li>5. Heavy metals for fabric dyeing, electronics.</li> <li>6. Solids for food, soft drinks, electronics ...</li> </ol>	3.3.2.c.2





**Figure (8): Other waste of which industrial waste collected**



## Chapter Seven: Wastes Sector Infrastructure

### Waste Sector Infrastructure

Hazardous waste treatment and disposal facilities should be specified by number of incineration facilities, landfills, and recovery facilities. Hazardous waste may also be incinerated in permitted industrial high temperature facilities such as cement kilns.



**Table (18): Waste Sector Infrastructure**

Category	Definition
<b>Number of hazardous waste treatment and disposal facilities</b>	Hazardous waste treatment and disposal facilities should be specified by number of incineration facilities, landfills, and recovery facilities. Hazardous waste may also be incinerated in permitted industrial high temperature facilities such as cement kilns.
<b>Capacity of hazardous waste treatment and disposal facilities</b>	The capacities of hazardous waste treatment and disposal facilities should be specified by capacity of incineration facilities, including co-incineration in appropriate industrial facilities, landfills, and recovery facilities.
<b>Number of municipal waste treatment and disposal facilities</b>	The number of waste treatment and disposal facilities should be specified by number of incineration facilities (with- or without energy recovery), landfills, and recycling facilities (including composting and anaerobic fermentation). Treatment facilities for hazardous waste should be indicated, characteristics for e.g. landfills should be broken down by landfill type (landfills for hazardous, non-hazardous and inert waste).
<b>Capacity of municipal waste treatment and disposal facilities</b>	The capacities of waste treatment and disposal facilities should be specified by capacity of incineration facilities (with- or without energy recovery), landfills, and recycling facilities (including composting and anaerobic fermentation). Treatment facilities for hazardous waste should be indicated, characteristics for e.g. landfills should be broken down by landfill type (landfills for hazardous, non-hazardous and inert waste).
<b>Number of industrial waste treatment and disposal facilities</b>	Waste treatment and disposal facilities should be specified by number of incineration facilities (with- or without energy recovery), landfills, recovery and recycling facilities. The number of treatment facilities for hazardous waste should be indicated, characteristics for e.g. landfills should be broken down by landfill type (landfills for hazardous, non-hazardous and inert waste).

**Table (18): Waste Sector Infrastructure**

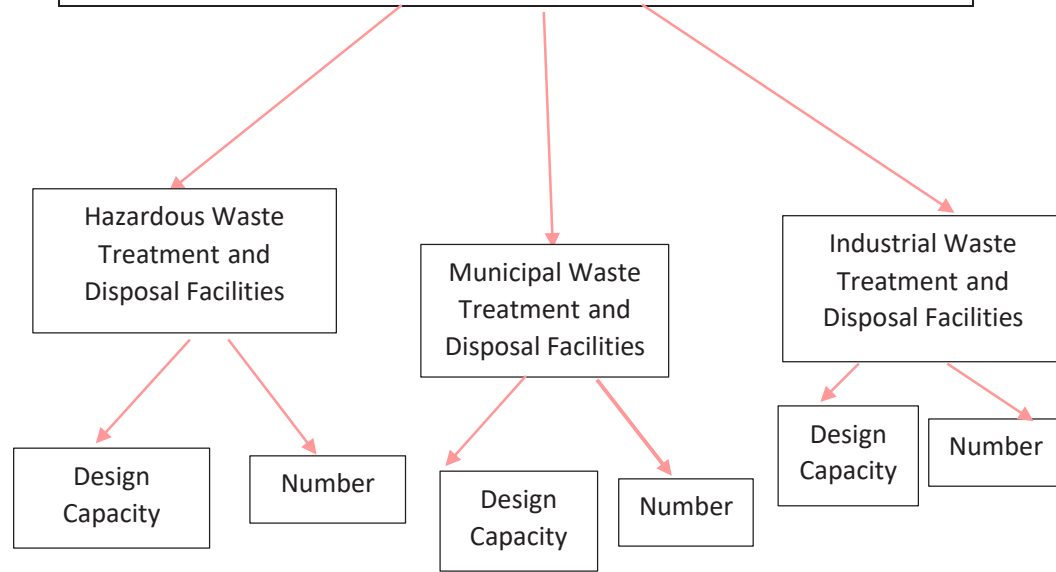
Category	Definition
<b>Capacity of industrial waste treatment and disposal facilities</b>	The capacities of industrial waste treatment and disposal facilities should be specified by capacity of incineration facilities (with- or without energy recovery), landfills, and recovery and recycling facilities. Treatment facilities for hazardous waste should be indicated, characteristics for e.g. landfills should be broken down by landfill type (landfills for hazardous, non-hazardous and inert waste).

**Table (19): Waste Sector Infrastructure**

Category	FDES Code
Number of hazardous waste treatment and disposal facilities	3.3.2.b.3
Design capacity of hazardous waste treatment and disposal facilities	3.3.2.b.4
Number of municipal waste treatment and disposal facilities	3.3.2.a.3
Design capacity of municipal waste treatment and disposal facilities	3.3.2.a.4
Number of industrial waste treatment and disposal facilities	3.3.2.c.3
Design capacity of industrial waste treatment and disposal facilities	3.3.2.c.4



**Figure (9): Waste Sector Infrastructure**



Manual Sources

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[https://unstats.un.org/unsd/publication/seriesM/seriesm\\_4rev4e.pdf](https://unstats.un.org/unsd/publication/seriesM/seriesm_4rev4e.pdf)

United Nation Environment Programme, Basel convention on the control of transboundary movement of hazardous waste and their disposal, 2014

<http://www.basel.int/Portals/4/Basel%20Convention/docs/text/BaselConventionText-a.pdf>

# Annexes

## Annex (1): ISIC Code

Category	ISIC Code
<b>Section A</b>	
<b>Agriculture, forestry and fishing</b>	
<b>Crop and animal production, hunting and related service activities</b>	01
<b>Forestry and logging</b>	02
<b>Fishing and aquaculture</b>	03
<b>Section B</b>	
<b>Mining and Quarrying</b>	
<b>Mining of coal and lignite</b>	05
<b>Extraction of crude petroleum and natural gas</b>	06
<b>Mining of metal ores</b>	07
<b>Other mining and quarrying</b>	08
<b>Mining support service activities</b>	09
<b>Section C</b>	
<b>Manufacturing</b>	
<b>Manufacture of food products</b>	10
<b>Manufacture of beverages</b>	11
<b>Manufacture of tobacco products</b>	12
<b>Manufacture of textiles</b>	13
<b>Manufacture of wearing apparel</b>	14
<b>Manufacture of leather and related products</b>	15
<b>Manufacture of wood and of products of wood and cork, except furniture manufacture</b>	16

Category	ISIC Code
Manufacture of paper and paper products	17
Printing and reproduction of recorded media	18
Manufacture of coke and refined petroleum products	19
Manufacture of chemicals and chemical products	20
Manufacture of basic pharmaceutical products and pharmaceutical preparations	21
Manufacture of rubber and plastics products	22
Manufacture of other non-metallic mineral products	23
Manufacture of basic metals	24
Manufacture of fabricated metal products, except machinery and equipment	25
Manufacture of computer, electronic and optical products	26
Manufacture of electrical equipment	27
Manufacture of machinery and equipment	28
Manufacture of motor vehicles, trailers and semi-trailers	29
Manufacture of other transport equipment	30
Manufacture of furniture	31
Other manufacturing	32
Repair and installation of machinery and equipment	33
<b>Section D</b>	
Electricity, gas, steam and air conditioning supply	
Electricity, gas, steam and air conditioning supply	35
<b>Section E</b>	
Waste management and remediation activities	

Category	ISIC Code
Waste collection, treatment and disposal activities; materials recovery	38
Remediation activities and other waste management services	39
<b>Section F</b>	
<b>Construction</b>	
Construction of buildings	41
Civil engineering	42
Specialized construction activities	43
<b>Section G</b>	
<b>Wholesale and retail trade; repair of motor vehicles and motorcycles</b>	
Wholesale and retail trade and repair of motor vehicles and motorcycles	45
Wholesale trade, except of motor vehicles and motorcycles	46
Retail trade, except of motor vehicles and motorcycles	47
<b>Section H</b>	
<b>Transportation and Storage</b>	
Land transport and transport via pipelines	49
Water transport	50
Air transport	51
Warehousing and support activities for transportation	52
Postal and courier activities	53
<b>Section I</b>	
<b>Accommodation and food service activities</b>	
Accommodation	55
Food and beverage service activities	56



Category	ISIC Code
<b>Section J</b> Information and communication	
Publishing activities	58
Motion picture, video and television programme production, sound recording and music publishing activities	59
Programming and broadcasting activities	60
Telecommunications	61
Computer programming, consultancy and related activities	62
Information service activities	63
<b>Section K</b> Financial and insurance activities	
Financial service activities, except insurance and pension funding	64
Insurance, reinsurance and pension funding, except compulsory social security	65
Activities auxiliary to financial service and insurance activities	66
<b>Section L</b> Real estate activities	
Real estate activities	68
<b>Section M</b> Professional, scientific and technical activities	
Legal and accounting activities	69
Activities of head offices; management consultancy activities	70
Architectural and engineering activities; technical testing and analysis	71
Scientific research and development	72
Advertising and market research	73
Other professional, scientific and technical activities	74

Category	ISIC Code
Veterinary activities	75
<b>Section N</b> Administrative and support service activities	
Rental and leasing activities	77
Employment activities	78
Travel agency, tour operator, reservation service and related activities	79
Security and investigation activities	80
Services to buildings and landscape activities	81
Office administrative, office support and other business support activities	82
<b>Section O</b> Public administration and defence; compulsory social security	
Public administration and defence; compulsory social security	73
<b>Section P</b> Education	
Education	85
<b>Section Q</b> Human health and social work activities	
Human health activities	86
Residential care activities	87
Social work activities without accommodation	88
<b>Section R</b> Arts, entertainment and recreation	
Creative, arts and entertainment activities	90
Libraries, archives, museums and other cultural activities	91

## Annex (2): Eurostat Waste Categories

Category	ISIC Code
Gambling and betting activities	92
Sports activities and amusement and recreation activities	93
<b>Section S</b>	
Other service activities	
Activities of membership organizations	94
Repair of computers and personal and household goods	95
Other personal service activities	96
<b>Section T</b>	
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	
Activities of households as employers of domestic personnel	97
Undifferentiated goods- and services-producing activities of private households for own use	98
<b>Section U</b>	
Activities of extraterritorial organizations and bodies	
Activities of extraterritorial organizations and bodies	99

Category	Waste classified	EWG-Stat Code
Spent solvents	Hazardous	01.1
Acid, alkaline or saline wastes	Non-Hazardous	01.2
Acid, alkaline or saline wastes	Hazardous	01.2
Used oils	Hazardous	01.3
Chemical wastes	Non-Hazardous	01.4, 02, 03.1
Chemical wastes	Hazardous	01.4, 02, 03.1
Industrial effluent sludge	Non-Hazardous	03.2
Industrial effluent sludge	Hazardous	03.2
Sludge and liquid wastes from waste treatment	Non-Hazardous	03.3
Sludge and liquid wastes from waste treatment	Hazardous	03.3
Health care and biological wastes	Non-Hazardous	05
Health care and biological wastes	Hazardous	05
Metallic wastes, ferrous	Non-Hazardous	06.1
Metallic wastes, non-ferrous	Non-Hazardous	06.2
Metallic wastes, mixed ferrous and non-ferrous	Non-Hazardous	06.3
Glass wastes	Non-Hazardous	07.1
Glass wastes	Hazardous	07.1
Paper and cardboard wastes	Non-Hazardous	07.2

Category	Waste classified	EWC-Stat Code
<b>Rubber wastes</b>	Non-Hazardous	07.3
<b>Plastic wastes</b>	Non-Hazardous	07.4
<b>Wood wastes</b>	Non-Hazardous	07.5
<b>Wood wastes</b>	Hazardous	07.5
<b>Textile wastes</b>	Non-Hazardous	07.6
<b>Wastes containing PCB</b>	Hazardous	07.7
<b>Discarded equipment</b>	Non-Hazardous	08 (excl. 08.1, 08.41)
<b>Discarded equipment</b>	Hazardous	08 (excl. 08.1, 08.41)
<b>Discarded vehicles</b>	Non-Hazardous	08.1
<b>Discarded vehicles</b>	Hazardous	08.1
<b>Batteries and accumulators wastes</b>	Non-Hazardous	08.41
<b>Batteries and accumulators wastes</b>	Hazardous	08.41
<b>Animal and mixed food waste</b>	Non-Hazardous	09.1
<b>Vegetal wastes</b>	Non-Hazardous	09.2
<b>Animal faeces, urine and manure wastes</b>	Non-Hazardous	09.3
<b>Household and similar wastes</b>	Non-Hazardous	10.1
<b>Mixed and undifferentiated materials</b>	Non-Hazardous	10.2
<b>Mixed and undifferentiated materials</b>	Hazardous	10.2
<b>Sorting residues</b>	Non-Hazardous	10.3
<b>Sorting residues</b>	Hazardous	10.3
<b>Common sludge</b>	Non-Hazardous	11

Category	Waste classified	EWC-Stat Code
<b>Mineral waste from construction and demolition</b>	Non-Hazardous	12.1
<b>Mineral waste from construction and demolition</b>	Hazardous	12.1
<b>Other mineral wastes (excl. C&amp;D waste, combustion wastes, soils, dredging spoils, waste from waste treatment)</b>	Non-Hazardous	12.2, 12.3, 12.5
<b>Other mineral wastes (excl. C&amp;D waste, combustion wastes, soils, dredging spoils, waste from waste treatment)</b>	Hazardous	12.2, 12.3, 12.5
<b>Combustion wastes</b>	Non-Hazardous	12.4
<b>Combustion wastes</b>	Hazardous	12.4
<b>Soils</b>	Non-Hazardous	12.6
<b>Soils</b>	Hazardous	12.6
<b>Dredging spoils</b>	Non-Hazardous	12.7
<b>Dredging spoils</b>	Hazardous	12.7
<b>Mineral waste from waste treatment and stabilized wastes</b>	Non-Hazardous	12.8, 13
<b>Mineral waste from waste treatment and stabilized wastes</b>	Hazardous	12.8, 13



## Annex (3): Basel convention code

Category	Basel Convention Code
Clinical wastes from medical care in hospitals, medical centers and clinics.	Y1
Wastes from the production and preparation of pharmaceutical products	Y2
Waste from pharmaceuticals, drugs and medicines	Y3
Metal carbonyls	Y19
Beryllium; beryllium compounds	Y20
Hexavalent chromium compounds	Y21
Copper compounds	Y22
Zinc compounds	Y23
Arsenic; arsenic compounds	Y24
Selenium; selenium compounds	Y25
Cadmium; cadmium compound	Y26
Antimony; antimony compounds	Y27
Tellurium; tellurium compounds	Y28
Mercury; mercury compounds	Y29
Thallium; thallium compounds	Y30
Lead; lead compounds	Y31
Inorganic fluorine compounds excluding calcium fluoride	Y32

Category	Basel Convention Code
Inorganic cyanides	Y33
Acidic solutions or acids in solid form	Y34
Basic solutions or bases in solid form	Y35
Asbestos (dust and fibres)	Y36
Organic phosphorus compounds	Y37
Organic cyanides	Y38
Phenols; phenol compounds including chlorophenols	Y39
Ethers	Y40
Halogenated organic solvents	Y41
Organic solvents excluding halogenated solvents	Y42
Any congener of polychlorinated dibenzo-furan	Y43
Any congener of polychlorinated dibenzo-p-dioxin	Y44
Organ halogen compounds other than substances referred to in this Annex (e.g. Y39, Y41, Y42, Y43, Y44)	Y45
Wastes collected from households	Y46
Residues arising from the incineration of household wastes	Y47
Deposit into or onto land, (e.g., landfill, etc.)	D1
Land treatment, (e.g., biodegradation of liquid or sludgy discards in soils, etc.)	D2
Deep injection, (e.g., injection of pumpable discards into wells, salt domes of naturally occurring repositories, etc.)	D3
Surface impoundment, (e.g., placement of liquid or sludge discards into pits, ponds or lagoons, etc.)	D4

Category	Basel Convention Code
Specially engineered landfill, (e.g., placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)	D5
Release into a water body except seas/oceans	D6
Release into seas/oceans including sea-bed insertion	D7
Incineration on land	D10
Use as a fuel (other than in direct incineration) or other means to generate energy	R1

