

UNSD Environment Statistics Questionnaire

2010 Session

Water Section

Water supply industry: E 36

The water collection treatment and supply industry includes water collection, treatment and distribution activities for domestic and industrial needs. This includes abstraction of water for distribution from various sources (mainly surface water and groundwater), natural water (CPC 1800) treatment for distribution and the actual distribution of natural water (CPC 1800) by pipes, channels and other means. The operation of irrigation canals is also included; however the provision of irrigation services through sprinklers, and similar agricultural support services, is not included.

(Remark: In earlier versions of the questionnaire, the term Public Water Supply was used instead of Water Supply Industry)

Wastewater treatment (sewerage): E 37

This division includes:

- operation of sewer systems or sewer treatment facilities
- collecting and transporting of human or industrial wastewater from one or several users, as well as rain water by means of sewerage networks, collectors, tanks and other means of transport (sewage vehicles etc.)
- emptying and cleaning of cesspools and septic tanks, sinks and pits from sewage; servicing of chemical toilets
- treatment of wastewater (including human and industrial wastewater, water from swimming pools etc.) by means of physical, chemical and biological processes like dilution, screening, filtering, sedimentation etc.
- maintenance and cleaning of sewers and drains, including sewer rodding

Agriculture, forestry and fishing: A 01-03

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 habitats.

Manufacturing: C 10-33

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.

Electricity industry: D 351

Production, transmission and distribution of electricity.

For the purposes of this questionnaire, water for hydroelectricity generation (e.g. water behind dams) should be excluded.

Other economic activities:

For the purpose of the questionnaire, other economic activities refer to all other economic activities not specified before.

Precipitation: W1, 1

Total volume of atmospheric wet precipitation (rain, snow, hail, dew, etc.) falling on the territory of the country over one year, in million cubic metres (mio m3).

Actual evapotranspiration: W1, 2

Total actual volume of evaporation from the ground, wetlands and natural water bodies and transpiration of plants. According to the definition of this concept in Hydrology, the evapotranspiration generated by all human interventions is excluded, except unirrigated agriculture and forestry. The 'actual evapotranspiration' is calculated using different types of mathematical models, ranging from very simple algorithms (Budyko, Turn Pyke, etc.) to schemes that represent the hydrological cycle in detail.

Internal flow: W1, 3

Total volume of river run-off and groundwater generated over the period of a year, in natural conditions, exclusively by precipitation into a territory. The internal flow is equal to precipitation less actual evapotranspiration and can be calculated or measured. If the river run-off and groundwater generation are measured separately, transfers between surface and groundwater should be netted out to avoid double counting.

Inflow of surface and groundwaters: W1, 4

Total volume of actual external inflow of rivers and groundwater, coming from neighbouring countries. Boundary waters should be divided 50/50 between the two riparian countries, unless other water sharing agreements exist.

Renewable freshwater resources: W1, 5

= Internal flow + Inflow of surface and groundwaters.

Outflow of surface and groundwaters: W1, 6

Actual outflow of rivers and groundwater into neighbouring countries and/or into the sea.

Long-term annual average: W1

Arithmetic average over at least 20 consecutive years. Please provide average over available period and indicate the length of the time period in the footnotes.

Fresh surface water: W2

Freshwater which flows over, or rests on, the surface of a land mass; natural watercourses such as rivers, streams, brooks, lakes, etc., as well as artificial watercourses such as irrigation, industrial and navigation canals, drainage systems and artificial reservoirs. For purposes of this questionnaire, water obtained through bank filtration is included under (fresh) surface water. Sea-water, and transitional waters, such as brackish swamps, lagoons and estuarine areas are not considered fresh surface water. Bank filtration is the use of existing geologic formations adjacent to surface water bodies to filter drinking water. Wells are dug in fine, sandy sediments next to water bodies and water is extracted from these wells. Water in the water bodies filters through the sediments, removing contaminants.

Fresh groundwater: W2

Freshwater which is being held in, and can usually be recovered from, or via, an underground formation. All permanent and temporary deposits of water, both artificially charged and naturally, in the subsoil, of sufficient quality for at least seasonal use. This category includes phreatic water-bearing strata, as well as deep strata under pressure or not, contained in porous or fracture soils. For purposes of this questionnaire, groundwater includes springs, both concentrated and diffused, which may be subaqueous.

Gross freshwater abstracted: W2, 1 & W3, 1

Water removed from any source, either permanently or temporarily. Includes abstraction by the water supply industry (ISIC 36) and direct abstraction by other activities, and water abstracted but returned without use, such as mine water and drainage water.

Freshwater abstraction by water supply industry: W2, 2

Water abstraction by economic units engaged in collection, purification and distribution of water (including desalting of sea water to produce water as the principal product of interest, and excluding system operation for agricultural purposes and treatment of wastewater solely in order to prevent pollution.)

The water supply industry is classified as ISIC 36 in the International Standard Industrial Classification of All Economic Activities (ISIC Rev. 4).

Freshwater abstraction by Electricity industry (ISIC 351): W2, 6, W2, 16 & W2, 26

Excludes water for hydroelectricity generation (e.g. water behind dams).

Gross fresh groundwater abstracted: W2, 21

Fresh groundwater removed from the ground, either permanently or temporarily. Includes abstraction by the water supply industry (ISIC 36) and direct abstraction by other activities, and water abstracted but returned without use, such as mine water and drainage water. Note artificial recharge is not deducted from this figure.

Water returned without use: W3, 2

Water discharged into freshwaters without use, or before use. Occurs primarily during mining and construction activities. Excludes discharges into the sea.

Net freshwater abstracted: W3, 3

= Gross freshwater abstracted - water returned without use.

Desalinated water: W3, 4

Total volume of water obtained from desalination of (i.e. removal of salt from) seawater and brackish water.

Reused water: W3, 5

Used water directly received from another user with or without treatment. Excludes water discharged into a watercourse and used again downstream. Excludes recycling of water within industrial sites.

Imports of water: W3, 6

Total volume of bulk freshwater that is imported from other countries as a commodity through pipelines or on ships or trucks. Excludes bottled water.

Exports of water: W3, 7

Total volume of bulk freshwater that is exported to other countries as a commodity through pipelines or on ships or trucks. Excludes bottled water.

Total freshwater available for use: W3, 8

= Net freshwater abstraction + Desalinated water + Reused water + Imports of water - Exports of water.

Losses during transport: W3, 9 & W5, 2

The volume of freshwater lost during transport between a point of abstraction and a point of use, and between points of use and reuse. Includes leakages and evaporation. Excludes losses due to illegal tapping and use of water which should be included in use figures in Table W4.

Total freshwater use: W3, 10 & W4, 1

Refers to the quantity of freshwater that is actually used in a year by end users including water delivered by the water supply industry (ISIC 36), water directly abstracted for own use and water received from other parties. Excludes freshwater returned without use.

= Total freshwater available for use - Losses during transport (in Table W3)

= used by (Household + Agriculture, forestry and fishing + Manufacturing + Electricity industry + Other economic activities) (in Table W4)

Household freshwater use: W4, 2

Freshwater used in the normal functioning of households (e.g. drinking and washing). It may include watering of a household garden but should not include freshwater used for commercial agriculture.

Irrigation in agriculture: W4, 4

Artificial application of water on land to assist in the growing of crops and pastures.

Gross freshwater supplied by water supply industry (ISIC 36): W5, 1

Water delivered by water supply industry to the user. Includes losses during transport.

Net freshwater supplied by water supply industry (ISIC 36): W5, 5

Gross freshwater delivered by public water supply industry minus freshwater losses during transport.

Total (urban, rural) population supplied by water supply industry (ISIC 36): W5, 11-13

The percentage of the resident population connected to the water supply.

Wastewater: W6

Water which is of no further value to the purpose for which it was used because of its quality, quantity or time of occurrence. However, wastewater from one user can be a potential supply to a user elsewhere. Cooling water is included.

Wastewater treatment (ISIC 37): W6

Wastewater treatment (ISIC 37) is all treatment of wastewater in wastewater treatment plants. Wastewater treatment plants are usually operated by public authorities or by private companies working by order of public authorities. Includes wastewater delivered to treatment plants by trucks.

Primary wastewater treatment: W6

Treatment of wastewater by a physical and/or chemical process involving settlement of suspended solids, or other process in which the Biological Oxygen Demand (BOD5) of the incoming wastewater is reduced by at least 20% before discharge and the total suspended solids of the incoming wastewater are reduced by at least 50%. To avoid double counting, water subjected to more than one type of treatment should be reported under the highest level of treatment only.

Secondary wastewater treatment: W6

Post-primary treatment of wastewater by a process generally involving biological or other treatment with a secondary settlement or other process, resulting in a Biological Oxygen Demand (BOD5) removal of at least 70% and a Chemical Oxygen Demand (COD) removal of at least 75%. To avoid double counting, water subjected to more than one type of treatment should be reported under the highest level of treatment only.

Tertiary wastewater treatment: W6

Treatment (additional to secondary treatment) of nitrogen and/or phosphorous and/or any other pollutant affecting the quality or a specific use of water: microbiological pollution, colour etc. The different possible treatment efficiencies ('organic pollution removal' of at least 95% for BOD5, 85% for COD, 'nitrogen removal' of at least 70%, 'phosphorus removal' of at least 80% and 'microbiological removal') cannot be added and are exclusive.

Independent wastewater treatment: W6

Collection, preliminary treatment, treatment, infiltration or discharge of domestic wastewater from dwellings generally between 1 and 50 population equivalents, not connected to a wastewater collection system. An example is septic tanks. Excluded are systems with storage tanks from which the wastewater is transported periodically by trucks to a wastewater treatment plant.

Design capacity (volume): W6, 2

The average daily volume that a treatment plant or other facility is designed to treat.

Biochemical Oxygen Demand (BOD5): W6, 3

Amount of dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water. This is measured at 20 degrees Celsius for a period of five days. The parameter yields information on the degree of water pollution with organic matter.

Design capacity (BOD): W6, 3

The quantity of oxygen-demanding material that wastewater treatment plants are designed to treat daily with a certain efficiency. For secondary treatment plants the BOD-capacity is mostly limited by the oxygenation capacity, i.e. the quantity of oxygen that can be brought into the water to keep the oxygen concentration on a suitable level.

Actual occupation (volume): W6, 4

The average daily volume of wastewater that treatment plants actually treat.

Actual occupation (BOD): W6, 5

The average quantity of oxygen-demanding material that wastewater treatment plants treat daily (with a certain efficiency). For secondary treatment plants the BOD-capacity is mostly limited by the oxygenation capacity, i.e. the quantity of oxygen that can be brought into the water to keep the oxygen concentration on a suitable level.

Sewage sludge production (dry matter): W6, 17

The accumulated settled solids, either moist or mixed, with a liquid component as a result of natural or artificial processes, that have been separated from various types of wastewater during treatment. Data on dry weight should be provided. If data are only available for wet weight, please fill in the data for wet weight and specify in a footnote.

Population connected to wastewater collecting system: W7, 1

The percentage of population connected to the wastewater collecting systems (sewerage). Wastewater collecting systems may deliver wastewater to treatment plants or may discharge it without treatment to the environment.

Population connected to wastewater treatment: W7, 2

The percentage of population whose wastewater is treated at wastewater treatment plants.

Population with independent wastewater treatment (e.g. septic tanks): W7, 4

The percentage of population whose wastewater is treated in individual, often private facilities such as septic tanks.

Population not connected to wastewater treatment: W7, 6

The percentage of the resident population whose wastewater is neither treated in treatment plants nor in independent treatment facilities.

Freshwater:

Freshwater is water that contains only minimal quantities of dissolved salts, especially sodium chloride, thus distinguishing it from sea water or brackish water.

Brackish water:

Water that is saltier than freshwater and less salty than sea water. Technically, brackish water contains between 0.5 and 30 grams of salt per litre, but most brackish water have a concentration of total dissolved salts is in the range of 1,000-10,000 milligrams per litre (mg/l).

Sea water:

Sea water is water from a sea or ocean. On average, sea water in the world's oceans has a salinity of ~3.5%. This means that for every 1 litre (1000 ml) of sea water there are 35 grams of salts (mostly, but not entirely, sodium chloride) dissolved in it.