



METHODOLOGICAL EXPLANATION

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PUBLIC SEWAGE SYSTEM

This methodological explanation relates to the data releases:

Public sewage system, Slovenia, annually (First Release)



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1 PURPOSE

The purpose of publishing the data on the public sewage system is to present the data on the amount of waste water by source, place of discharge, level of treatment and technical equipment of the sewage system in Slovenia.

Key statistics in the survey on irrigation system are:

- Amount of waste water by source of pollution;
- Amount of treated waste water by level of treatment;
- Amount of discharged waste water by place of discharge;
- Number of sewage connections and length of the sewage network.

2 LEGAL FRAMEWORK

- [Annual Programme of Statistical Surveys \(LPSR\) \(only in Slovene\)](#)
- [National Statistics Act \(OJ RS, No. 45/95 and 9/01\)](#)
- Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy (CELEX: 32000L0060)

3 UNIT DESCRIBED BY THE PUBLISHED DATA

The units described by the published data are produced waste water according to :

- source of pollution by waste water,
- place of discharge,
- untreated or treated waste water,
- level of treatment
- operation of the sewage system.

The main characteristics of units are the amount of waste water produced by source of pollution according to the place of discharge and the amount of treated (by treatment levels) and untreated waste water produced (1000m³) and sewerage system operation (number of connection to the sewerage system and length of sewerage network in meters).

4 SELECTION OF OBSERVATION UNIT

With the annual survey **Public Sewage System (VOD-K)** all business entities (full capture) that are operators of sewage systems or concessionaires managing sewage systems or have taken over the management of sewage systems are covered.

The survey covers 109 units.

5 SOURCES AND METHODS OF DATA COLLECTION

Data are collected annually.

Data for the survey are obtained from the administrative source, i.e. from the database of the information system of public environmental protection services kept by the Ministry of the Environment and Spatial Planning.

Data for the survey are obtained from the administrative source.

Administrative databases are:

- The quantity of waste water generated by source,
- The quantity of waste water discharged treated and untreated by municipalities and sub basins,
- Waste water discharged by water sources, municipalities and sub basins,
- Waste water generated by level of treatment, by municipalities,
- Connection table of sewerage systems with municipalities (the length of the network, the number of connections).

6 DEFINITIONS

Public sewage is sewage infrastructure facilities designed for municipal public service of draining and treatment of urban waste water and drainage waste water.

Building connections to public sewage, septic tanks and small treatment plants with treatment capacity smaller than 50 PE are not objects of public sewage.

Sewage consists of a network of feeders, channels, gutters and other equipment for draining waste water which are connected with the sewage network and from which drainage of waste water from buildings and drainage water from roofs and from hardened, paving or other covered area is assured.

Sewage system is a system for common collection and draining of urban or/and industrial waste water with drainage waste water.

Waste (polluted) water is water which is after use or as atmospheric precipitation discharged into public sewage or waters. Waste water is a mixture

of domestic, industrial/process or drainage wastewater.

Domestic waste water is waste water from residential settlements and services which originates predominantly from the human metabolism and from household activities.

Urban waste water is domestic waste water or the mixture of domestic waste water with industrial waste water and/or run-off rain water. Urban waste water originates from household activities for water use in sanitary places, cooking, washing and other housework. Urban waste water is also water which is generated in public buildings or in other activities and is by origin and by ingredients similar to domestic water. Urban waste water is also industrial waste water the daily flow of which does not exceed 15 m³ and the annual volume of which does not exceed 4,000 m³, and at the same time annual environmental load does not exceed 50 PE (population equivalent).

Industrial (process) waste water is water discharged after being used in, or generated by, industrial production processes and which is of no further immediate value to these processes. This waste water originates after industry, trade, economic or agriculture use and is not similar to urban waste water. Industrial waste water is also a mixture with technological and urban or/and rain water if mixed waters are discharged by common outflow into public sewage or directly into waters. Industrial waste waters are also cooling waters and liquids which are collected and run off from facilities for processing, storing or disposal of waste.

Where process water recycling systems are installed, process waste water is the final discharge from these systems. To meet quality standards for eventual discharge into public sewers, this process waste water is subjected to ex-process in-plant treatment.

Drainage waste water is water which as a result of atmospheric precipitation runs off as polluted water from hardened, paved or with other materials covered area into waters or drains off into public sewage (or into soil).

Untreated waste water is waste water discharged into ambient media without treatment. Untreated waste water is released (directly or indirectly) into groundwater, watercourses, accumulations, lakes and sea without prior treatment in treatment plants.

Treated waste water is waste water discharged from a treatment plant. Wastewater treatment includes mechanical, chemical or biological methods of treatment or its combinations which is dependent on the exact standards of treatment.

Wastewater treatment is a process to render waste water fit to meet applicable environmental standards or other quality norms for recycling or reuse. Three broad types of treatment are distinguished in the questionnaire: primary, secondary and tertiary.

Primary treatment is treatment of (urban) waste water by a physical and/or chemical process involving settlement of suspended solids, or other process in which the BOD₅ of the incoming waste water is reduced by at least 20% before discharge and the total suspended solids of the incoming waste water are reduced by at least 50%.

Secondary treatment is treatment of (urban) waste water by a process generally involving biological treatment with a secondary settlement or other process, resulting in a BOD removal of at least 70%, a COD removal of at least 75% and the total suspended solids of the incoming waste water are reduced by at least 90%.

Tertiary treatment is treatment (additional to secondary treatment) of nitrogen and phosphorous and/or any other pollutant affecting the quality or a specific use of water. In addition to requirements for secondary treatment, this treatment includes nitrogen removal of at least 70% and/or phosphorus removal of at least 80%. Tertiary treatment is additional treatment of substances that remain after secondary treatment. This improved treatment is necessary for sensitive areas of watercourses.

Treatment plant is a facility for treatment of waste water which reduces or eliminates water pollution. Treatment plants are urban (UWWTP), industrial (IWWTP) or independent treatment plants.

Urban waste water treatment plant (UWWTP) is a waste water treatment plant for urban waste water or for a mixture of urban and drainage waste water.

Industrial waste water treatment plant (IWWTP) is a waste water treatment plant for industrial (process) waste water, one or more devices of which are working the same or several different technological processes. If the industrial waste water drains off into the public sewage, then the IWWTP is designed for pre-treatment of industrial (process) waste water.

Collective waste water treatment plant is a waste water treatment plant for treatment of a mixture of urban or drainage waste water or both with industrial (process) waste water in which the industrial wastewater load is more than

50%, measured with COD.

Population equivalent (PE) is a unit for water loading with the organic biodegradable stuff which corresponds to pollution generated by one person during 24 hours. It is expressed as BOD₅ (a five-day biochemical oxygen demand). 1 PE is equal to 60g (BOD₅) of oxygen per day.

Sewage connection points are places of direct contact of the internal network within buildings with the sewage system.

Connection of building to the public sewage is a feeder and technological devices connected with it which drain off waste water into the public sewage network. Feeders of building connections are not part of the public sewage system.

7 EXPLANATIONS

7.1 CLASSIFICATIONS

In the context of the data publication the NUTS classification (Classification of Territorial Units for Statistics) that was established for statistical purposes and is based on administrative or institutional breakdowns of Member States of the European Union according to uniform criteria are used. The territory of Slovenia includes three levels:

- Level 1 (NUTS 1), entire country
- Level 2 (NUTS 2), cohesion regions: Vzhodna and Zahodna Slovenija
- Level 3 (NUTS 3), 12 statistical regions

More information: Nomenclature of Territorial Units for Statistics (NUTS), published on the SURS website (Methods and Classification - Classifications and code lists - Territorial code list):

- <https://www.stat.si/StatWeb/en/Methods/Classifications>

7.2 DATA PROCESSING

DATA EDITING

Data editing was not performed.

WEIGHTING

Weighting was not performed.

SEASONAL ADJUSTMENT

Seasonal adjustment is not applicable.
Methodological explanation

DATA PROCESSING OTHER

Data taken over from the administrative source contain the registration number of reporting unit, the code of the municipality, the code of the hydrographic area and the code of the water public sewage system. Data taken over from the administrative source need to be processed at the level of statistical regions and cohesion regions, and at the level of river basins and sub-basins.

The controlling, aggregation and tabulation of acquired data follows; processing ends with the preparation of tables arranged according to the values of certain variables.

Within the final analysis the data are compared with the data from the previous year by individual variables and by statistical regions and river basins. Any significant discrepancies are further examined. Data processing is followed by the final calculation and publication of data.

7.3 INDICES

Indices are not published.

7.4 PRECISION

The precision is not calculated.

7.5 OTHER EXPLANATIONS

Data that are statistically protected to respect the confidentiality of reporting units are replaced with the letter »z«.

Some totals do not add up due to rounding. Data protected because of confidentiality are not published.

8 PUBLISHING

SiStat Database: [Environment](#) - Public sewage network

The data are published in the form of an absolute at the level of Slovenia

value and are broken down by:

- o cohesion and statistical regions according to the standard classification at NUTS-2 and NUTS-3 levels,
- o river basins and catchment area

- First Release (Environment, Public sewage system): “ Public sewage system, Slovenia, annually
- EUROSTAT (Statistical Office of the European Union)
- The Organisation for Economic Co-operation and Development (OECD)
- European Environment Agency (EEA)

9 REVISION OF THE DATA

9.1 PUBLISHING OF PRELIMINARY AND FINAL DATA

Provisional data are not disseminated. Only final data are published.

9.2 FACTORS INFLUENCING COMPARABILITY OVER TIME

Despite the change of the data source, there was no break in the time series of data on the total amount of wastewater, so all time points are comparable.

Due to the change of the data source, from 2016 on the data on rainwater and run-off rainwater are presented within treated and untreated wastewater and not separately.

10 OTHER METHODOLOGICAL MATERIALS

Methodological materials on SURS's website are available at <https://www.stat.si/statweb/en/Methods/QuestionnairesMethodologicalExplanationsQualityReports>.

- Questionnaire:
 - SURS does not collect data for this survey by using a questionnaire.
- Quality report for the survey:
 - Public sewage system (VOD-K)
 - Theme: Environment, sub-theme: Water