



METHODOLOGICAL EXPLANATION

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IRRIGATION OF LAND

This methodological explanation relates to the data releases:

Irrigation of land, Slovenia, annually (First Release)



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1 PURPOSE

The purpose of publishing the data on irrigation is to present the data on the amount of water used for irrigation by source, the cadastral area of potential and actual irrigated land, and the types of crops on irrigated land.

Key statistics in the survey on irrigation systems are:

- Amount of water abstracted for irrigation
- Area of irrigated land
- Annual consumption of water for irrigation

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: irrigated land and types of crops on irrigated land.

The unit described by the published data is irrigation of land according to:

- cadastral area of irrigated land,
- water for irrigation,
- irrigated land
- types of crops on irrigated land.

The main characteristics of units are the gross and net irrigable area (ha), sources of water needed for irrigation (1000m³), the area of agricultural land(ha) by types of crops on irrigated land, and the amount of water used for irrigation (1000m³).

4 SELECTION OF OBSERVATION UNIT

Observed units within the annual survey Irrigation of land are all business entities (full capture) that are holders of water rights to use water for irrigation of agricultural and other land, and all business entities that are managers of large or small irrigation systems are covered.

The survey covers about 126 units.

5 SOURCES AND METHODS OF DATA COLLECTION

Data are collected annually.

Data are obtained with the survey entitled Irrigation Systems (VOD-N). Data are obtained by fieldwork with a questionnaire on the irrigation systems (VOD-N), completed by the observation units with the data and returned to us by post.

Observation units are business entities that manage large or small irrigation systems, have a valid water permit and use water for irrigation of agricultural and other land.

Data for the survey are not obtained from administrative sources.

6 DEFINITIONS

Irrigation is artificial adding of water during the vegetation period when there is not enough water in the soil with the purpose to provide the optimum growth and development of cultivated plants. By irrigating land agricultural production is intensified, a more varied selection of plant varieties is achieved and output is better and more abundant. Irrigation comprises measures and equipment for providing, distributing and using water with the intent to provide plants with the optimum humidity in the ground.

Irrigation system is a system of man-made channels for supplying water to land to allow plants to grow.

Irrigation systems are divided into:

- large irrigation systems, which are intended for a large number of users for shared use according to an irrigation schedule;
- small irrigation systems, which are intended for one user or for several users who use the irrigation system independently one from the other. They are usually built on an area smaller than 10 hectares and pump less than 100 litres of water per second.

Area of irrigated land. The figure is based on the records of the LPIS (Land Parcel Identification System). This is a compact area of agricultural or forest land with the same type of actual use, which is used by one agricultural holding.

Annual water consumption. The figure is the state recorded on the water meter. If there are no water meters, water consumption should be estimated

based on the irrigated areas, the number of watering days and the average pump efficiency. Correct irrigation means proper water consumption and minimized pollution of the environment, taking into account the following parameters: irrigation ration, irrigation turn and duration of irrigation.

Water resource is a source of water that is captured for public supply, for technological processes or for irrigation.

Groundwater is water located beneath the surface in the saturation zone and in direct contact with soil or subsoil.

Running water covers natural watercourses such as streams, rivers and torrents, irrespective of whether they have a constant flow or not.

Water reservoir (retaining reservoir) is an artificial or natural water area that is used to store water for households or industry. In nature this is an artificial lake that is formed behind an artificial barrier or behind a river dam. Reservoirs are used for irrigation or for electricity production.

Arable land is agricultural land which is ploughed and which produces annual and some perennial agricultural crops (cereals, maize, potato, herbs and strawberries, legumes, hops, sugar beet, fodder crops, vegetables, ornamental plants, permanent crops and other).

Plantations are areas of land on which fruit plants are planted, either one type of fruit or a variety of fruit species.

Olive plantations are areas planted with olive trees which comprise at least 0.01 ha.

Arboriculture includes land cultivated with tree seedlings or seedlings of shrubs.

Vineyards are areas of agricultural land planted with vines, which are uniformly arranged (terrace or vertical), where a single cultivation system is possible and which measure at least 0.01 ha. The vineyard also includes nurseries.

Nurseries are areas on which root stocks for noble vines are cultivated.

Meadows and pastures are areas overgrown with grass, clover and other forage plants which are periodically cut or grazed. Such areas are not in rotation and not ploughed. Permanent pastures are also areas covered with individual trees, where tree density does not exceed 50 trees per hectare.

Greenhouses are glasshouse and plastic houses with a stronger structure and longer life, where ornamental plants, cut flowers, vegetables, herbs, parent plants, substrate, plants, strawberries, etc., are grown.

Snowed up areas are all areas designed for snowing up of ski slopes.

Other irrigated areas are golf courses, various sports fields and lawns.

7 EXPLANATIONS

7.1 CLASSIFICATIONS

In the context of the data publication classifications are used the NUTS classification (Classification of Territorial Units for Statistics) was established for statistical purposes and is based on administrative or institutional breakdowns of Member States of the European Union according to uniform criteria. 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 available: Nomenclature of Territorial Units for Statistics (NUTS). It is 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.

DATA PROCESSING OTHER

Data collected with fieldwork interviewing contain the identification number of the reporting units, the code of the municipality and the code of the hydrographic area.

The controller in the Data Control Section first checks whether the reporting units completed the questionnaire correctly with the required data. Before the data capture, visual, logical and computational control of the collected data is implemented. The correctness of the codes of hydrographic areas in which agricultural and other areas are irrigated is checked, and, if necessary, the missing codes are completed and wrongly entered data on the amount of water

for irrigation, on the cadastral area of potential and actual irrigated area, and the type of crops on irrigated land are corrected, the totals and other deficiencies are corrected, and data consistency is provided. Any uncertainty regarding the data is checked with the reporting units and any error correction is carried out in cooperation with them. After all these checks and corrections the data are entered into an Excel table; there additional logical and computational controls of the obtained data are made.

Then the obtained results are tabulated; processing ends with the preparation of tables arranged according to the value of certain variables. Procedures (imputation, weighting) due to missing responses (non-response) are not conducted in this survey.

In the final analysis the data are compared with the data from the previous year according to different variables and statistical regions and any significant discrepancies are further examined.

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. Sign "z" is used to hide the data to protect the reporting unit.

8 PUBLISHING

SiStat Database: Environment - Water - [Irrigation](#) The data are published in the form of an absolute at the level of Slovenia.

Values 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, Irrigation): »Irrigation, Slovenia, annually«
- EUROSTAT (Statistical Office of the European Union)

- United Nations (UN)
- 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

SURS started to collect data on irrigation in 1980 with the VOD-4 survey (report on irrigation and drainage systems). In 2001, the survey was modified into the present Land Irrigation (VOD-N) survey.

By 2002, the methodology changed several times. The unit of measurement for monitoring the amount of water for irrigation was l/s and thus not comparable with the unit of measurement introduced later (m³). In 2003, the survey was revised, so that the time series can be monitored in detail since then. There was another revision in 2011, which, however, only abolished the breakdown of data on irrigation by crops and added the category “snowing of slopes”. Since 2013, the data have been additionally published by statistical regions.

There were no breaks in time series, so all time points are comparable. The data on irrigation are available since 2003.

10 OTHER METHODOLOGICAL MATERIALS

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

- Questionnaire:
 - Irrigation of land (VOD-N)

Theme: Environment, Subtheme: Water

- Quality report for the survey:
 - Irrigation systems (VOD-N)

Theme: Environment, Sub-theme: Water