

## C-3: Total water use

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## 1) General description

### 1.1) *Brief definition*

This indicator specifies the availability of freshwater from various sources (freshwater abstracted, desalinated water, reused water, net imports of water) and its use to meet the needs of households, agriculture, industry, and other economic activities. The water use is provided as a total for the whole country and broken down by economic activity according to the International Standard Industrial Classification of All Economic Activities (ISIC). Moreover, the indicator shows total water use per unit of GDP.

### 1.2) *Units of measurement*

The total volume of water use and the volume by economic activity are measured in million cubic metres per year; total water use per unit of GDP is expressed as cubic meters per international dollars (constant prices, purchasing power parity).

### 1.3) *Context*

Relation to other indicators from the Guidelines - This indicator relates to indicators "C-1: Renewable freshwater resources", "C-2: Freshwater abstraction", "C-7: Water losses" and "C-8: Reuse and recycling of freshwater".

## 2) Relevance for environmental policy

### 2.1) *Purpose*

The indicator provides a measure of the pressure on the environment in terms of water abstraction from different sources (including freshwater abstracted, desalinated water, reused water, and with regard to water losses).

### 2.2) *Issue*

The availability of water for meeting basic human needs is a prerequisite for life, health and economic development. This indicator is important for defining the level of development of

water economy services and the degree of water accessibility to cover the needs of population and society. The indicator also helps to identify trends in water use in a particular country. Finally, as water use depends on the structure of national economy, this indicator takes into account the purchasing power parity (PPP) at constant prices to facilitate comparisons between countries.

### **2.3) International agreements and targets**

#### *a) Regional level*

The ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes obliges the Parties to prevent, control and reduce transboundary impact, use transboundary waters in a reasonable and equitable way and ensure their sustainable and ecologically sound management.

#### *b) Subregional level*

The Environmental Strategy for countries of Eastern Europe, Caucasus and Central Asia, adopted by the 2003 Ministerial Conference “Environment for Europe”, requires the preparation and implementation of programs for integrated water management. In the European Union, the Water Framework Directive (Directive 2000/60/EC) obliges the Member States to promote the sustainable use of available water resources based on long-term protection and to ensure a balance between abstraction and recharge of water with the aim of achieving a “good water status” by 2015.

## **3) Methodology and guidelines**

### **3.1) Data collection and calculations**

The data on water use are collected from the water supply industry, i.e. public or private bodies whose main functions are water collection, treatment and distribution activities for domestic and industrial needs, and from the recipients of water from water supply systems. The total freshwater available is calculated as the sum of freshwater abstracted, desalinated water, reused water and imports of water minus exports of water. The total freshwater use can be calculated as the product of total freshwater available minus losses of water during the transport of water by water supply infrastructure. The water use by economic activities should be calculated by summarizing the data on the use of water through a centralized water supply system and through self-supply for drinking and service needs and for production purposes, as well as data on the use of water for irrigation and on agricultural water supply (including drinking and service needs of the rural population). Water for hydroelectricity generation purposes should be excluded from electricity industry.

### 3.2) Internationally agreed methodologies and standards

The UNSD/UNEP Questionnaire on Environmental Statistics (Table W2); The Joint OECD/Eurostat Questionnaire on the State of the Environment (Inland Waters, Table 3.1); International Recommendations for Water Statistics (IRWS), UNSD 2010.

## 4) Data sources and reporting

Many countries of South-Eastern and Eastern Europe, Caucasus and Central Asia have databases that contain fairly exhaustive time series of data on water use, collected by national environmental authorities from the water supply industry and other enterprises and users by using statistical reporting forms. These data are collected in water cadasters. Information on water use is published in statistical yearbooks and/or national state-of-the-environment reports. National environmental authorities provide data to the UNSD Environment Statistics Database.

## 5) References at the international level

- European Commission – Water Policy: [http://ec.europa.eu/environment/water/index\\_en.htm](http://ec.europa.eu/environment/water/index_en.htm);
- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (Water Framework Directive): [http://ec.europa.eu/environment/water/water-framework/index\\_en.html](http://ec.europa.eu/environment/water/water-framework/index_en.html)
- ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992): <http://www.unece.org/fileadmin/DAM/env/water/pdf/watercon.pdf>; amendment 2003: <http://www.unece.org/fileadmin/DAM/env/documents/2004/wat/ece.mp.wat.14.e.pdf>
- Environmental Indicator Report 2012, EEA 2012
- European Commission – Water Policy: [http://ec.europa.eu/environment/water/index\\_en.htm](http://ec.europa.eu/environment/water/index_en.htm)
- European Environment Agency (EEA): <http://www.eea.europa.eu/themes/water>

- Europe's Environment, The Fourth Assessment, EEA 2007
- Eurostat: <http://epp.eurostat.ec.europa.eu/portal/page/portal/sdi/indicators>
- Global water information system of the Food and Agriculture Organization (AQUASTAT): [http://www.fao.org/ag/agl/aglw/aquastat/water\\_res/waterres\\_tab.htm](http://www.fao.org/ag/agl/aglw/aquastat/water_res/waterres_tab.htm)
- Indicators of Sustainable Development: Guidelines and Methodologies, third edition, United Nations 2007: [http://www.un.org/esa/sustdev/natlinfo/indicators/methodology\\_sheets.pdf](http://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets.pdf)
- International Recommendations for Water Statistics (IRWS): <http://unstats.un.org/unsd/envaccounting/irws/irwswebversion.pdf>
- International Standard Industrial Classification of all Economic Activities, United Nations, Series M, No 4, rev.3
- Organization for Economic Co-operation and Development (OECD): <http://oecd.org/env/>
- Protocol on Water and Health to the ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes: <http://www.unece.org/fileadmin/DAM/env/documents/2000/wat/mp.wat.2000.1.e.pdf>
- The European Environment: State and Outlook 2010: Synthesis, EEA 2010
- United Nations Statistics Division (UNSD): <http://unstats.un.org/unsd/environment/>
- United Nations Statistics Division (UNSD)/United Nations Environment Programme (UNEP) Questionnaire on Environment Statistics (2013): <http://unstats.un.org/unsd/environment/questionnaire2013.html>
- World Health Organization (WHO): <http://www.euro.who.int/en/home>
- World Meteorological Organization (WMO): [www.wmo.ch](http://www.wmo.ch).