

Water census

Year 2015

The volume of water abstracted for drinking use amounted to 9.5 billion cubic meters in 2015, broadly stable compared to 2012 (+0.3%)

84.3% of the water abstracted for drinkable use derived from fresh groundwater (48.0% from well and 36.3% from spring), 15.6% from fresh surface water (9.9% from artificial basin, 4.8% from river and 0.9% from natural lake) and the remaining 0.1% from sea or brackish waters.

Nearly one third (33.0%) of the water withdrawn came from treatment plants so as to ensure the drinking water standards.

8.3 billion of cubic meters of water for drinking use were placed in the municipal distribution networks: 375 liters per capita per day, with a slight decrease of 0.4% compared with 2012.

220 liters per capita was the quantity of water daily delivered by public water supply to the users (21 liters less than 2012). A total volume of 4.9 billion cubic meters is necessary to meet the drinkable needs of the territory.

In 2015 total water losses amounted to 41.4% of the water in input in the supply network, indicating a worsening compared to 2012, when the indicator was 37.4%.

The real losses, after deduction of customer meter inaccuracies, systematic data handling errors in customer billing systems and unauthorized consumption, were equal to 38.3% of the volume input in the network. It was a huge volume, equal to 3.2 billion cubic meters which, upon estimating 80 m³ per inhabitant each year, represented the yearly water necessity for about 40 million people.

All regions showed, although with different levels, a general deterioration of the losses level in water supply networks, with the exception of Valle d'Aosta and Piemonte.

In 2015 urban wastewater treatment plants (UWWTP) in operation were 17,897, and most of them were located in northern Italy (10,630).

UWWTP with advanced treatment, even representing only 12.9% of the total plants, processed 66.7% of pollutant loads. In most cases, these plants were at the service of big urban areas.

The load of pollutants from industry that flowed to the UWWTP with secondary or advanced treatment, decreased by 8.0% compared to 2012.

A little increase in the percentage of civil pollution loads treated by secondary or advanced UWWTP has been observed, shifting from 57.6% in 2012 to 59.6% in 2015.

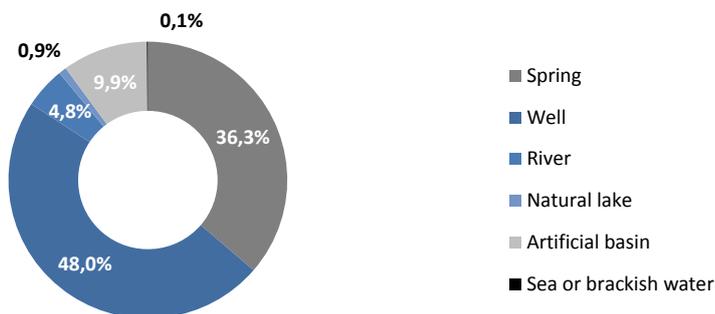
A high level of fragmentation persisted in the management of water services, with 2,857 companies operating in Italy in 2015; in 17.0% of cases they were specialized managers and 83.0% were municipalities. Compared to 2012, the number of managers has decreased by 304 units.

Water abstraction

The volume of water abstracted for drinking use amounted to 9.5 billion cubic meters in 2015. Compared to the 2012 urban water census, it had a slight decrease of 0.3%.

84.3% of the water abstracted for drinkable use derives from fresh groundwater (48.0% from well and 36.3% from spring), 15.6% from fresh surface water (9.9% from artificial basin, 4.8% from river and 0.9% from natural lake) and the remaining 0.1% from sea or brackish water (Figure 1).

FIGURE 1. WATER ABSTRACTION FOR DRINKABLE USE BY SOURCE. Year 2015, percentage composition



According to the quality of water withdrawn it can be necessary to effect some treatments, more invasive than the ordinary disinfection or chlorination, in order to eliminate possible pollutants and to guarantee the quality in the nets, up to the faucets of the consumers.

33.0% of the water abstracted came from the treatment plants in order to ensure the drinking water standards.

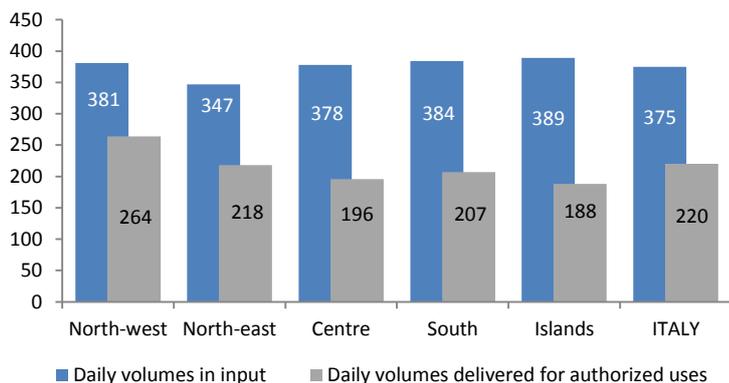
Water input in public water supply

8.3 billion of cubic meters of water for drinking use were placed in municipal distribution networks: 375 liters per capita per day, with a decrease of 0.4% compared with 2012.

Water delivered

Water delivered for authorized uses by public water supply was equal to 4.9 billion cubic meters (Figure 2): 220 liters per capita per day (21 liters less than 2012).

FIGURE 2. WATER INPUT IN PUBLIC WATER SUPPLY NETWORK AND WATER DELIVERED FOR DRINKABLE USES BY GEOGRAPHICAL AREA. Year 2015. Liters per capita per day

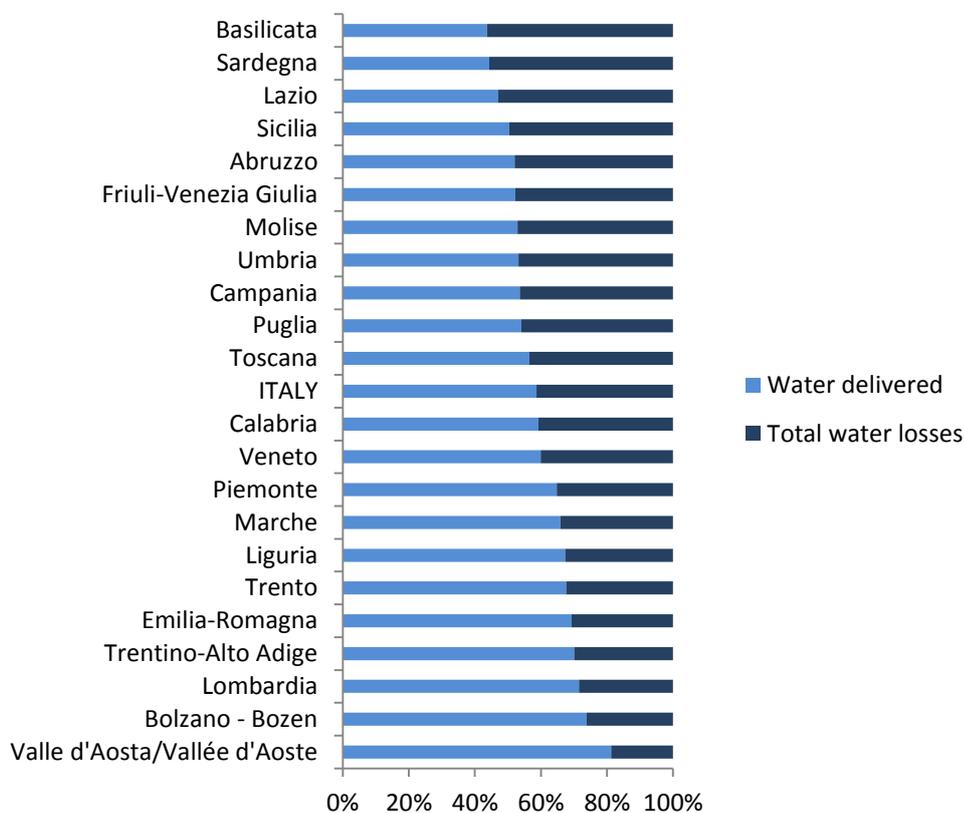


Water losses

Water lost by leaky pipes in the distribution system have been calculated as the percentage of water losses (total and real) and the volumes input in the public water supply and the delivered water for authorized uses. The indicator referred to the total losses amounted to 41.4%, indicating a deterioration compared to what happened in the previous census when it was 37.4%.

More than 3.4 billion cubic meters were lost in the journey along the pipes. Compared to 2012, the regional dispersion of network showed the most critical situations in the regions of the Islands and Centre-South Italy. Although with different levels, all the regions indicated a general worsening of the losses level in the water supply network, with the exception of Valle d'Aosta and Piemonte (Figure 3).

FIGURE 3. WATER DELIVERED FOR DRINKABLE USES AND TOTAL WATER LOSSES BY REGION. Year 2015. Percentage values on the volume input in public water supply network

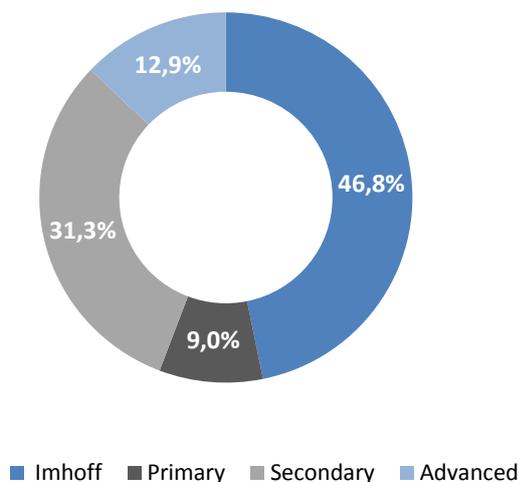


In the evaluation of the temporal variations which took place among 2012 and 2015 it is necessary to signal that changes can be imputable not only to the different real performance of the network, but also to the modification of the criteria used in the water balance construction, particularly in the calculation of not measured volumes. The real losses, after deduction of errors of measurement and not authorized consumptions, were equal to 38.3% of the volume input in the network. It is an enormous volume, equal to 3.2 billion cubic meters that, esteeming an annual mean consumption of 80 cubic meters for inhabitant, would satisfy the water demands for one year of around 40 million of people.

Wastewater treatment plants

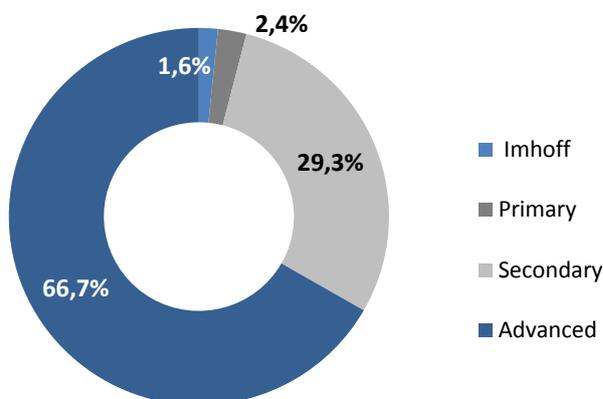
In 2015 urban wastewater treatment plants (UWWTP) in operation were 17,897. Most of the plants were located in the North of Italy (10,630).

FIGURE 4. URBAN WASTEWATER TREATMENT PLANTS BY TIPOLOGY. Year 2015. Percentage composition



UWWTP with advanced treatment, even representing only 12.9% of the total plants, processed 66.7% of pollutant loads (Figure 5). In most cases, these plants were at the service of big urban areas.

FIGURE 5. POLLUTTANT LOADS BY TREATMENT TIPOLOGY. Year 2015. Percentage composition



Comparing with 2012 results, the load of pollutants coming from industry and flowing to the UWWTP with secondary or advanced treatment, decreased by 8.0%.

A little increase in the percentage of civil pollution loads treated by secondary or advanced UWWTP has been observed, shifting the indicator from 57.6% in 2012 to 59.6% in 2015.

Water services management

A high level of fragmentation persisted in the management of water services, with 2,857 companies operating in Italy in 2015; in 17.0% of cases they were specialized companies and 83.0% were municipalities. Compared to 2012, the number of water management companies has decreased by 304 units.

Methodological note

Since 1951 Istat has periodically collected information on water resources for domestic use through a specific census, aiming to describe the state of urban water services in Italy. The respondent units are all management companies operating in Italy in the urban water services.

The survey contents have been progressively updated by considering both the European directives on Water resources and the increasing request of information from public institutions and private stakeholders.

In the 2015 edition a web questionnaire with a customized compilation has been developed through an in-house software. This type of data-capture has limited the statistical burden on the respondents and provided an higher quality of data gathered.

The web questionnaire has been structured in five sections: (i) water abstraction for each sampling point managed, (ii) water transmission and water exchanges among management companies, (iii) public water supply network, (iv) public sewerage and (v) urban wastewater treatment plants.

The main variables disseminated with this report are:

- water management companies by service;
- water abstraction for drinkable use by type of source;
- water input in the public water supply (absolute values and per capita);
- water delivered (absolute values and per capita);
- water losses (total, apparent and real);
- urban wastewater treatment plants (number by type and pollutants loads).

Data have been disseminated at regional and national level and, if crucial, the comparison with the 2012 results have been explicated. For the public water supply network a detail for province and municipal capitals is also given.

For more details please refer to the Italian version

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