



## WATER IS A PRECIOUS COMMODITY

**W**hat is Veneto's contribution to the efficiency of the national water service and what is the environmental impact of human activity on water resources?

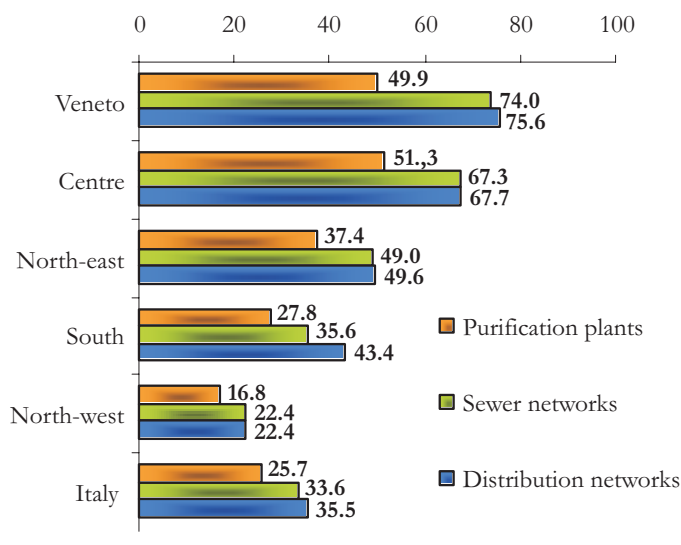
Veneto is one of the regions in which water abstraction is highest, with over 707 million cubic metres or 8.1% of the national total in 2005, and thus ranks fourth behind Lombardia, Campania and Lazio. When comparing these data to the population, Veneto, with little more than 149 cubic metres abstracted per inhabitant, is positioned slightly above the national average of 148.2 cubic metres abstracted per capita. This is the thirteenth place in the regional table, which is headed by Basilicata with more than 517 cubic metres per capita.

But how much of the water present in the distribution networks is then actually used by end consumers? In other words, what is the efficiency of the system of distribution? From this point of view Veneto is found to be competitive, because the share of water used compared to the total amount in the distribution networks amounts to 74.4%, a greater value than the national average of 69.9% and the 73.3% in the North-East.

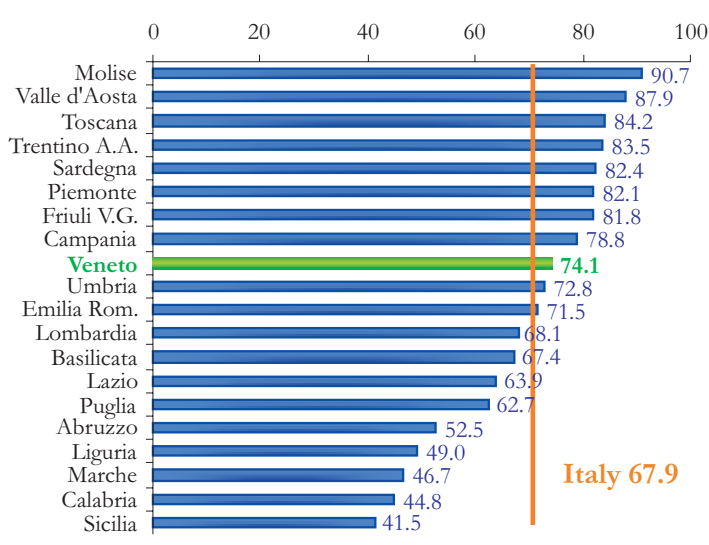
On December 31, 2005 the degree of implementation of the so-called "Galli law", which established a common water service (Servizio Idrico Integrato - SII) appointing certified water management authorities, was decidedly more marked in Veneto than in the rest of Italy. The percentage of municipalities with water services provided by SII-certified water management authorities is above the national average for every kind of service, such as for simple water distribution networks, for sewer networks and for purification plants. This position in the vanguard of the regions is also confirmed by the number of Equivalent Inhabitants Served (Abitanti equivalenti serviti - AES\*) by the purification plants compared to the potential Total of Equivalent Inhabitants in Urban areas (Abitanti Equivalenti Totali Urbani - AETU\*). With a ratio of 74.1% between the two values, Veneto is above the Italian average (67.9%), which is downgraded by the still precarious situation in several regions, in particular Sicilia, Calabria, Marche and Liguria, where the index does not even reach 50%.

### The common water system

**Municipalities with water services managed by SII-certified water management authorities (Sii) by kind of plant (percentage of total number of municipalities).\*\* Veneto and other territories – Year 2005**



**Percentage share of Equivalent Inhabitants Served by purification systems (effective AES) and Total Equivalent Inhabitants in Urban areas (AETU\*) by region - Year 2005**



**In Veneto the number of municipalities employing SII-certified water management authorities disposing of a distribution network amounts to 439, or 75.6% of the regional total, compared to Italy's 35.5%. For authorities with sewer systems this number amounts to 430 and for those with purification plants 290, i.e. a share of 74% and 49.9% of the municipalities respectively. These values that are decidedly above the national average.**

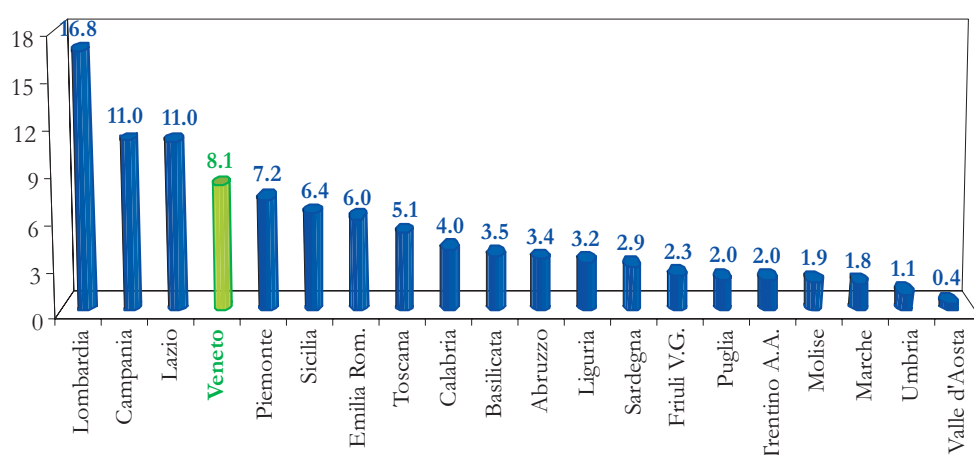
\*Equivalent Inhabitants Served are the measuring unit of the pollution load the water resources are subject to. In particular they represent the average biodegradable organic load in emitted on average into the waste water by a resident inhabitant. (see also Italian law decree No. 152/06). The AES, or Equivalent Inhabitants effectively Served measure the pollution load entering the purification plants. The AETU, or Total Equivalent Inhabitants in Urban areas, on the other hand, are a measure of the potential pollution load of a geographical area. The latter estimates urban waste water produced by households and similar private uses, hotels and tourists and micro-firms which operate in urban areas, all showing characteristics similar to those of human metabolism or household use and whose pollution is made up primarily of biodegradable substances.

\*\*The numbers for the islands are not reported here since in Sardegna management by the SII, by December 31, 2005, was not yet in operation, while in Sicilia there are no municipalities using SII certified water management authorities.

Source: Processing by Regione Veneto – Direzione Sistema Statistico Regionale on Istat data

## Exploitation of water resources

Abstraction of water for human consumption by region (% share of national total) – Year 2005

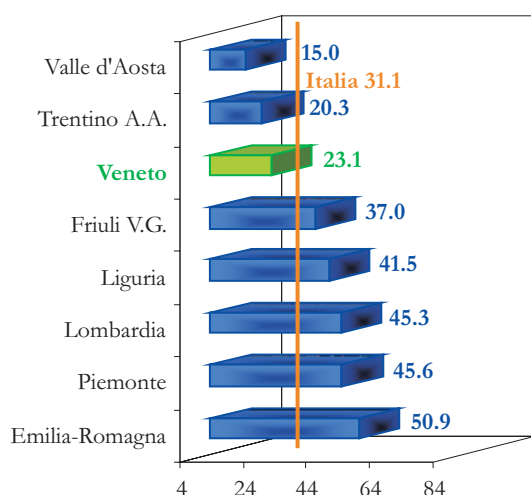


Thousands of cubic metres and cubic metres per capita of water abstracted for human consumption by region\* - Year 2005

	M <sup>3</sup>	M <sup>3</sup> pro capite
Basilicata	307,326	517.3
Molise	165,222	514.9
Valle d'Aosta	37,539	302.8
Abruzzo	293,163	224.6
Lazio	956,325	180.3
Trentino A. A.	172,407	175.0
Calabria	346,923	173.1
Liguria	275,064	170.8
Campania	960,310	165.8
Friuli V. G.	199,261	164.9
Lombardia	1,461,578	154.3
Sardegna	248,957	150.4
Veneto	707,663	149.3
Piemonte	628,504	144.8
Italia	8,705,837	148.2

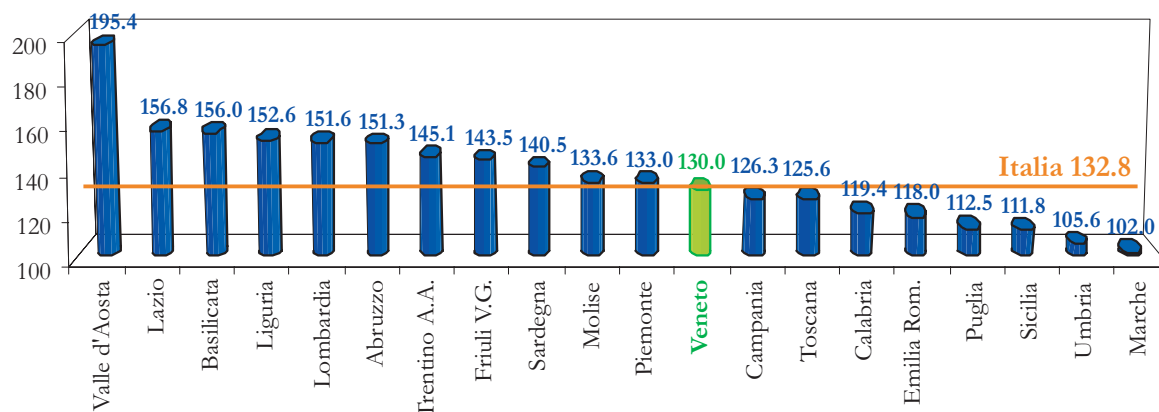
## Efficiency in the use of water resources

Share of purified potable water of the total abstracted (in %) in the regions of Northern Italy – Year 2005



In cases where there is more than one available water source, the groundwater ones are preferred as, on average, they are of better quality than surface sources, and normally do not require additional purification processes. A low index of purification expresses a greater wealth of high quality groundwater. In this respect Veneto has a particularly favorable hydrological situation, as the 163 million tonnes of water that are purified make up only 23.1% of the total water quantity abstracted, which lies below the national average of 31.1%. This places Veneto third among the regions of Northern Italy for its wealth of good quality potable water resources, only behind Trentino-Alto Adige and Valle d'Aosta (20.3% and 15% of purified drinking water respectively).

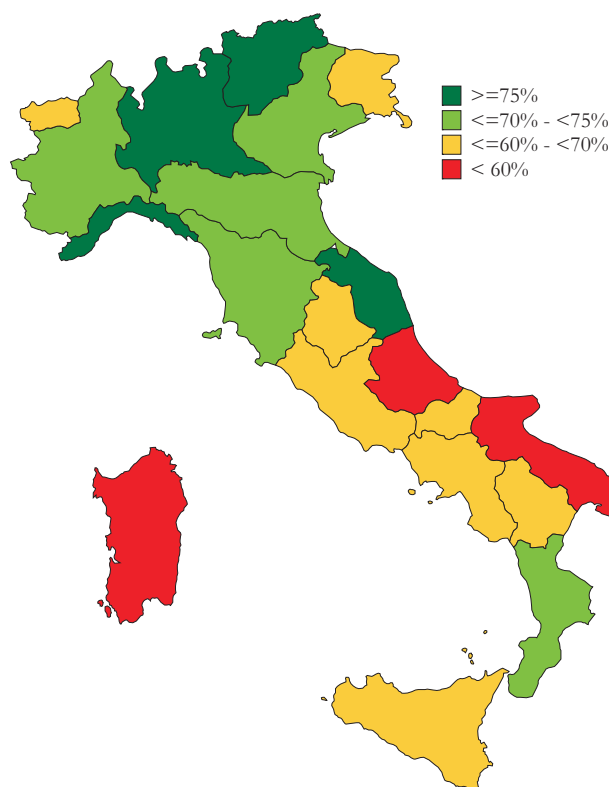
Water in the distribution network per capita by region (cubic metres per inhabitant) – Year 2005



In Italy 8,705,837 cubic metres of water are abstracted for human consumption and 7,799,364 cubic metres thereof are effectively put into the distribution network, which is 89.6%. In Veneto the 615,846 cubic metres of water that are pumped into the system are 87% of the total abstracted from the regional water resources, therefore a percentage slightly below the national average. Overall there are 132.8 cubic metres of water put into distribution per inhabitant on the national level. Veneto is substantially in line with this value, registering 130m per capita.

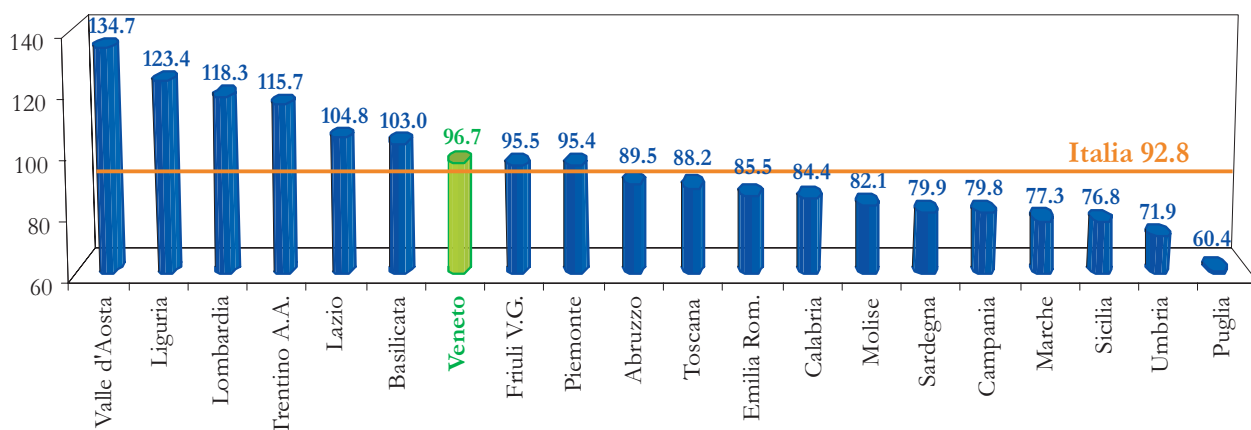
## Efficiency in the use of water resources

### Percentage of water consumed as a share of the total amount in the distribution networks of Italian regions – Year 2005



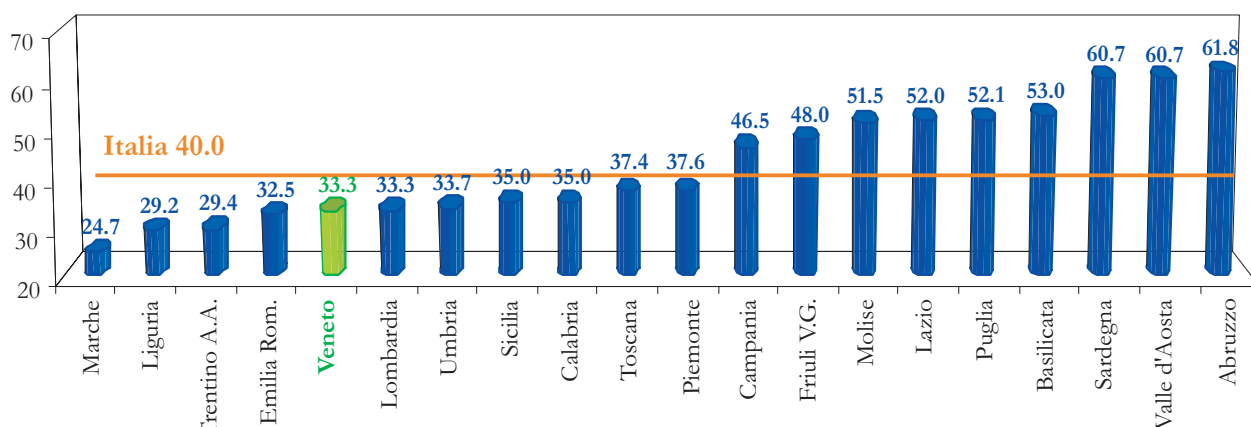
Water is thus abstracted, then purified for human consumption, put into the distribution networks and only a part of it latter is then effectively delivered for final consumption for various purposes: there are amounts unmetered for public use and, losses due to leaks in reservoirs when, in certain periods of the year, the water exceeds the storage capacity, possible theft and/or illegal abstraction from the network and, finally the loss from the conduits. The greater the percentage of water effectively consumed, the greater the efficiency of the entire water system. In Italy this percentage on average nears 70%, the result varies significantly from region to region. It ranges from nearly 81% in Liguria to less than 54% in Puglia. The Central-Northern regions are the ones with the most efficient water systems with values always above 70%. Veneto, with a percentage of consumed water over total abstracted amounting to 74.4%, ranks fifth among the best Italian regions.

### Water consumed per capita by region (cubic metres per inhabitant) – Year 2005



Veneto ranks seventh among the Italian regions with the greatest consumption of water per capita with 96.7 cubic metres per inhabitant per year, a number which exceeds the national average of 92.8. The situation among the regions is quite varied and reflects diverse geographic circumstances. Therefore consumption ranges from 135 cubic metres per capita in Valle D'Aosta to barely 60 in Puglia. Even analysing the differences between the water pumped into the distribution networks and the quantity effectively consumed per inhabitant, Veneto is the fifth most efficient region, with a level of loss amounting to 33.3 cubic metres per capita as opposed to 40 in Italy.

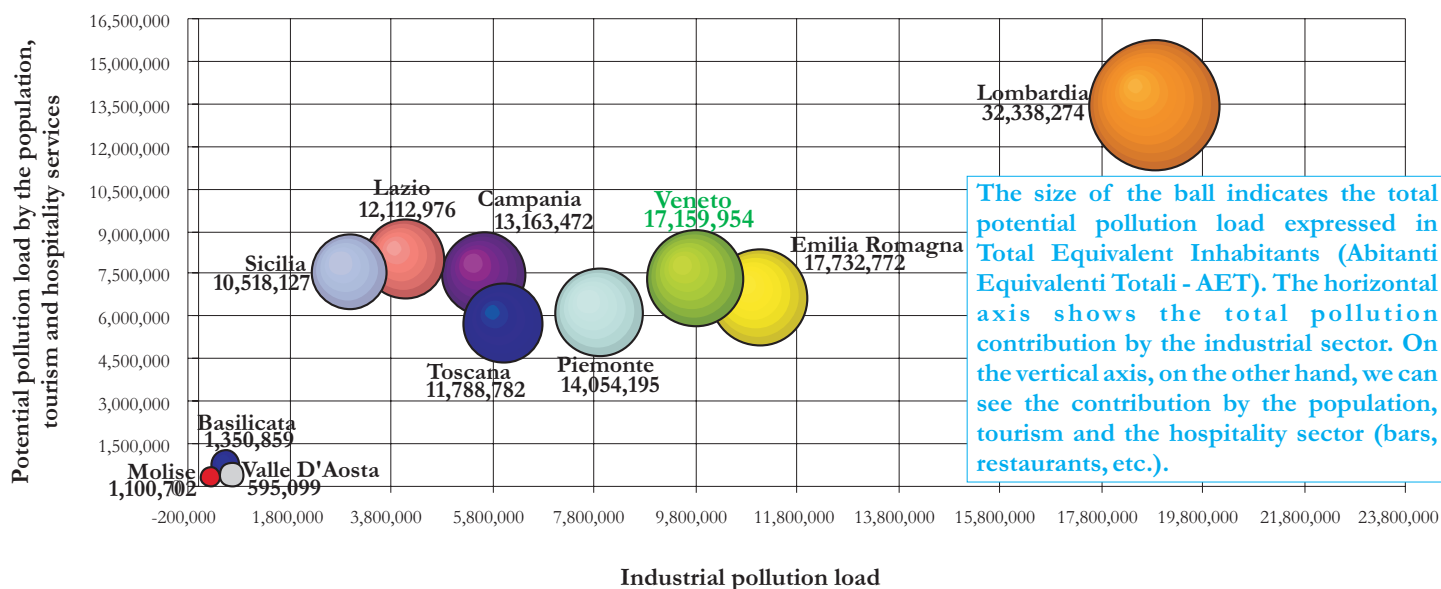
### Losses in the distribution of water in the Italian regions (cubic metres per capita)\* - Year 2005



\*Losses are calculated from the difference between the water put in the distribution networks and the quantities actually consumed  
Source: Processing by Regione Veneto – Direzione Sistema Statistico Regionale on Istat data

## Pollution of water resources

Potential pollution load (Total Equivalent Inhabitants – AET\*) by region\*\* and source of pollution – Year 2005

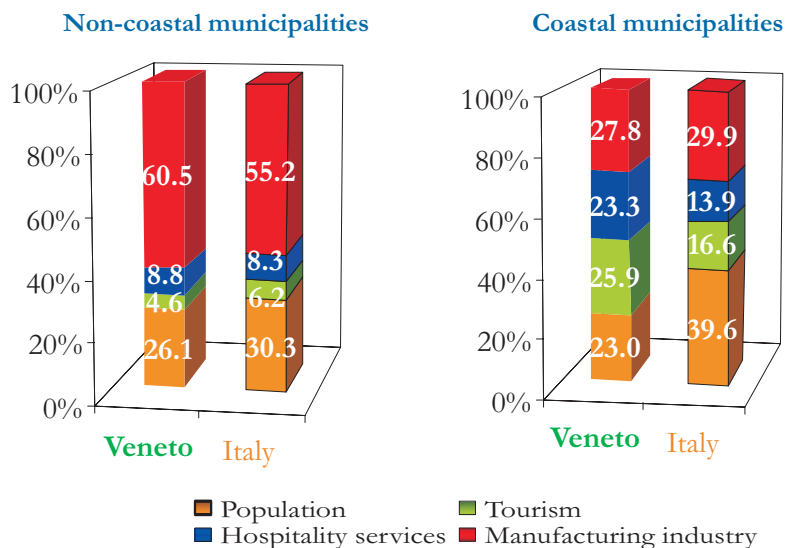


\*Like the Total Equivalent Inhabitants in Urban areas (AETU), AET is the measuring unit for the pollution load of water resources. In particular it represents the average organic biodegradable load discharged in waste water by a resident inhabitant (see also definition of Italian law decree No. 152/06). In their estimate, as opposed to the AETU, all waste water is considered, thus all that comes from industrial manufacturing within the municipality, which is therefore not comparable to household waste water. However, through conversion to Equivalent Inhabitants, only the biodegradable part is considered.

\*\*The first eight regions with the largest pollution loads (more than 10 million AET) and the three with the lowest.

The pollution load of waste water in Veneto is estimated at 17,160,000 AET\*, equal to 9.8% of the national total. Thus Veneto is among the regions in Italy with the highest environmental impacts for the exploitation of water resources. In Veneto the industrial sector alone is weighted at nearly 9,800,000 AET\*, that is 56.9% of the total. This number is clearly larger than the national average, in which industrial pollution is responsible for 49% of total pollution load.

Potential pollution load (% of Total Equivalent Inhabitants or AET) by kind and by geographical situation of the municipalities.



The distribution of the pollution load varies by the geographic position of the municipalities. Both for Italy and for Veneto a larger share comes from industry (55.2% and 60.5% respectively) in non-coastal municipalities, while in places near the sea the pollution load is distributed much more evenly among the sectors, especially in Veneto.

Source: Processing by Regione Veneto – Direzione Sistema Statistico Regionale on Istat data

In accordance with Regional Law no. 8 of 2002, Ufficio di Statistica della Regione Veneto gathers, analyses and disseminates statistical information for the benefit of the region. The processed data herein is the patrimony of the entire region and is published in brochures as well as on the Regione Veneto website at [www.regione.veneto.it/statistica](http://www.regione.veneto.it/statistica).