Malta: water scarcity is a fact of life

Malta is one of the top 10 water-scarce countries in the world. What to do when nature provides only half of the water your population needs? Malta produces clean water and tries to make sure that not one drop is wasted.

How do you tackle water scarcity in Malta?

Due to its geographical position, water scarcity is natural in Malta. The Mediterranean climate, with low levels of rainfall and high temperatures, results in low natural water availabilities. Moreover, the density of the population in Malta is about 1 400 people per square kilometre. In other words, we have a low availability of water resources in a very densely populated area.

Nature can give only about half of our total needs. Since 1982, Malta has been producing water through desalination of seawater. Desalination has been complemented by an extensive water leak management and repair programme that our public water utility has heavily invested in since the 1990s. As a result, our current municipal water demand is about 60 % of what it was in 1992, mainly thanks to leakage management. We also introduced last year an ambitious water reuse programme to further fill in the gap between supply and demand.

There are competing demands, given that Maltas natural water resources are limited. Urban residents or farmers ask for more water, but nature also needs water. Any water management plan we develop in Malta has to ensure that natures needs for water are respected and met.

Isnt desalination a very expensive solution with significant impacts on the marine environment?

Unfortunately, since natural resources are not enough, producing freshwater is a must and not a choice for us. Moreover, desalination as a technology has gone through significant changes in recent years, particularly in terms of energy efficiency. The energy needed to produce 1 cubic metre of freshwater from seawater will be reduced to 2.8 kilowatt hours. Ten years ago that was close to 6 kilowatt hours. Desalination technology has become very efficient and the industry is continuously moving towards higher efficiency levels.

Regarding the impacts of desalination on the marine environment, this concerns mainly the discharge of brine, which is the by-product of the desalination process and is released into the sea. Our desalination plants are rather small and located in areas where there are strong marine currents. So the amount discharged is limited and gets diffused quickly.

The decision on where to install a desalination plant has to take into account many factors. The size of the plant is also important, not just from the point of view of the discharge, but also from the point of view of security of supply. Our three plants are strategically installed at different locations on the coast, mainly because, in the case of events such as an oil spill, when a plant needs to be shut down, the other two can remain in operation.

Given scarcity by nature, how do Maltese citizens contribute to water-saving efforts?

Maltese citizens use around 110 litres a day per person, which is relatively low compared with other EU countries. But there are also new pressures to take into consideration. For example, up to 50 000 foreigners came to work in Malta in connection with its recent economic growth. The tourism sector has also been steadily growing and is estimated to contribute to an equivalent population of around 40 000 people. More people on the islands mean a higher demand for water. Furthermore, people have different water consumption habits. If you are accustomed to using 250 litres of water per day in a water-rich country, it is difficult to reduce it to 110 litres in a matter of days. The Energy and Water Agency is currently putting in place an extensive water conservation campaign, which takes into account such demographic and socio-economic trends to comprehensively address water demand management

Similarly, the market is helping people to consume less. For example, today it is very difficult to buy a new large-volume toilet flush-tank. When you buy a tap, most probably it will already have an aerator on it. Washing machines and dishwashers are increasingly water and energy efficient. Recycling of water also has a big saving potential, which we have started to explore.

How will recycled water be used?

We are focusing on two systems: agricultural use and domestic use. The agricultural system, through polishing plants, plans to produce 7 million cubic metres of recycled water per year. This corresponds to one third of agricultural water use, according to our estimates. Another important measure is the development of small, in-field, rain water reservoirs.

At home, around 30-45 % of water is used for showering and a similar share for flushing. Using shower water, which is relatively clean, for flushing, where there is no direct contact with people, could reduce daily consumption from 110 litres to around 70 litres per person. The saving potential is immense, but our primary concern is always public health. The technology has to be safe, because ultimately it is about our health and our families health.

Interview of Manuel Sapiano, Chief Policy Officer (Water) Energy and Water Agency, Malta,
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