

The Value of Water Services



RELIABLE, SAFE WATER AROUND THE CLOCK

Our water service providers deliver day and night. Every time you need safe and clean tap water for drinking, hygiene and sanitation, all you have to do is open a tap.

These same service providers conduct used water away from our homes and businesses to treat it before it is returned to the environment, recycling the valuable nutrients along the way and helping to keep us healthy.

All too often these privileges are taken for granted. Understanding the value of our water services is investing in our future and the future of the next generations. Water gives us life. Awareness of the value of water services will ensure that they are effective, efficient, resilient, sustainable and affordable for all.





This paper intends to raise awareness amongst policy makers about the value of water services for Europe and its citizens. Understanding the value of our water services is investing in our future and the future of the next generations. Water gives us life. Awareness of the value of water services will ensure that they are effective, efficient, resilient, sustainable and affordable for all.

What are water services?

Water services were created over time to solve society's need and demand for safe drinking water and to protect environment by collecting and treating waste water. Nowadays the Water Framework Directive (WFD) ¹, aiming at the protection of all waters in the European Union, defines "water services" as all services which provide, for households, public institutions or any economic activity:

- ~ Abstraction, impoundment, storage, treatment and distribution of surface water or groundwater,
- ~ Waste water collection and treatment facilities which subsequently discharge into surface water.

This definition is a broad one, including the provision of these services to activities such as domestic uses, agriculture, navigation, industrial uses, hydroelectric power generation and flood protection, amongst others².

However, this paper will focus on water services related to:

1. the supply of water intended for human consumption, as defined by the Drinking Water Directive (DWD)³ – namely for drinking, cooking, food preparation or other domestic purposes, and
2. the collection and treatment of urban waste water, according to the definition of the Urban Waste Water Treatment Directive (UWWTD)⁴, which are provided to all types of agglomerations: urban, peri-urban and rural.

¹ 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.

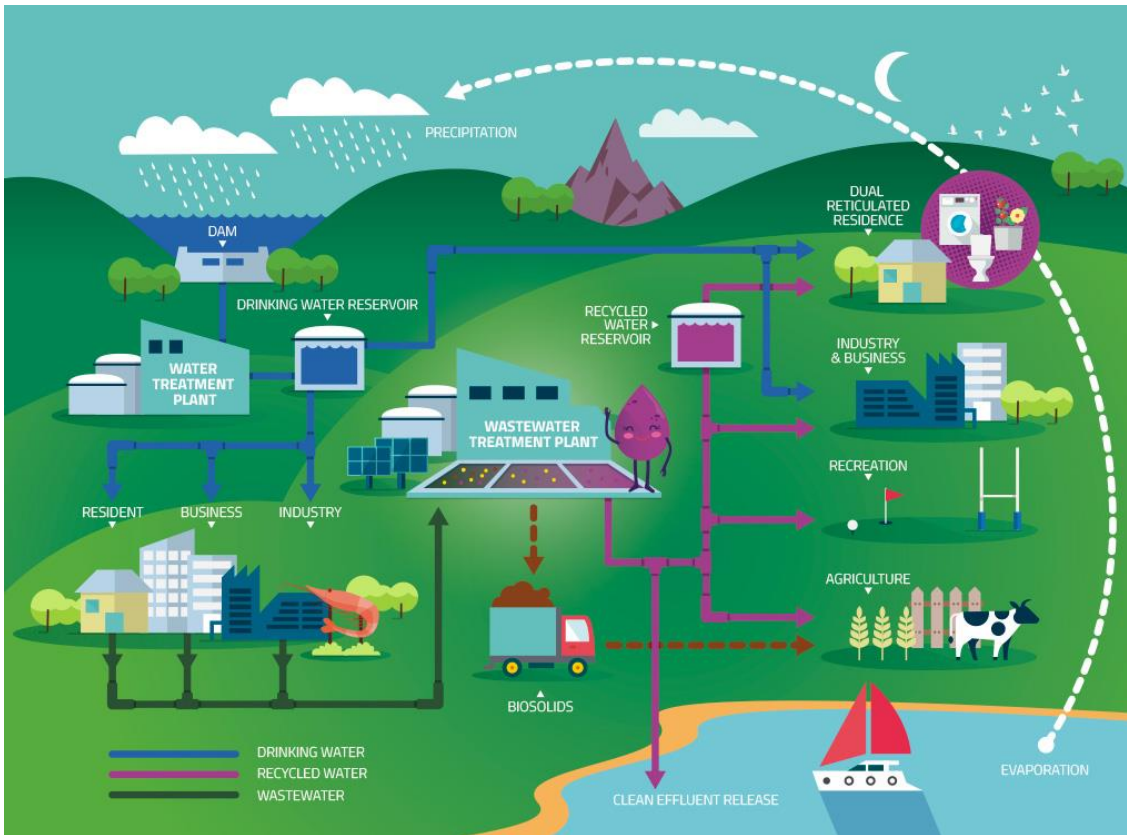
² [ECJ ruling C-525/12](#)

³ Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption.

⁴ Council Directive (91/271/EEC).



The following image illustrates these water services:



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The drinking water supply services are composed of abstraction, treatment (including desalination), storage, quality monitoring and distribution of water intended for human consumption (excluding mineral bottled water), while sanitation services are made up of urban waste water collection (sewerage network) and monitored treatment services to meet the required quality for the treated urban waste water and contribute to environmental protection. In Europe, there are over 4 million km of drinking water networks supplying 23 billion cubic meters of clean, safe water to homes each year. There is over 3 million km of sewerage network in operation transporting waste water to more than 21 000 urban waste water treatment plants⁵.

Water services require a very extensive set of infrastructure and assets: mechanisms for abstraction, pumping, storage facilities, pipelines, screening, overflows and treatment facilities which provide a wide range of processes going from simple filtration system up to advanced treatments depending on the particular characteristics of each water system.

Water services require professional organisation and management to provide effective, efficient, and resilient operation, maintenance, and renewal of its infrastructure, to provide

⁵ EurEau (2017) European water in figures, European Commission (2020) 10th Technical assessment on the Urban Waste Water Treatment Directive Implementation



safe and clean drinking water as well as the required collection and treatment of waste water, today and for the years to come. At the same time, water services are a key driver for economic development; without them, most of our economic and social activities as a society would not be possible.

1. Water matters. Why do we need to talk about water services?

Water is life. This is a clear and obvious fact. But how do we get safe drinking water and how is our waste water treated? And how do water services contribute to protecting both human health and the environment?

Invisible, yet indispensable

Many citizens just know that safe drinking water is in their taps, and that waste water just disappears when being flushed. We believe that everyone should know where our drinking water comes from and where waste water goes.

Water services are essential services. They are often taken for granted in the EU, because fortunately, they are extremely reliable services. In addition, the production and transportation of drinking water and the transportation and treatment of waste water are largely invisible to citizens: wells and pipelines are underground, while treatment facilities are isolated from residential areas.

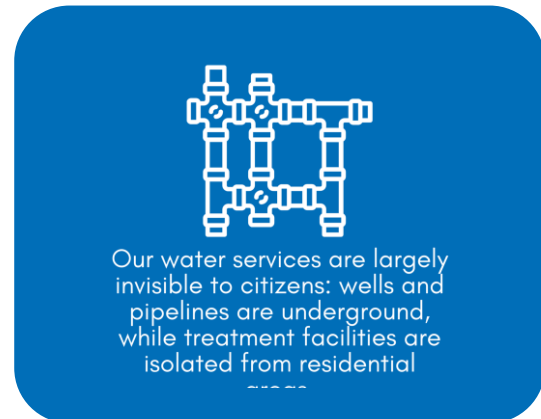
Water and sanitation: a human right

Water and sanitation are human rights, as recognised by the United Nations⁶ to be essential for living a life in dignity and the realisation of all human rights. In this sense, water supply and sanitation services play a fundamental role in realising these basic human rights.

Besides the five criteria established according to the Human Rights to Water and Sanitation (available, safe, acceptable, physically accessible, and affordable water), several principles determine their implementation: non-discrimination and equality, access to information, the right to participation, sustainability, and non-regression.

2020 became the year of the unprecedented COVID-19 pandemic, the infectious disease caused by the most recently discovered coronavirus, SARS-CoV-2. In this devastating pandemic, water services have proven to be even more essential, given that one of the main, and most effective, hygiene measures to prevent the spreading of the virus is handwashing with water and soap.

Despite the huge progress made, not all European citizens enjoy a safe water supply and



⁶ EurEau [briefing note on Making the human right to water and sanitation a reality in Europe](#).



adequate sanitation services. The European Commission's impact assessment⁷ of the Drinking Water Directive refers to Eurostat estimates that around 23 million people in Europe lack a connection to the public water supply network: this does not mean that they lack access to drinking water.

According to WHO data, 99.7% of the population in the EU and the UK lived in homes connected to the water supply system in urban or rural areas in 2015⁸.

According to Eurostat, a positive trend is observed for the share of the total population living in households without basic sanitary facilities (such as bath, shower, indoor flushing toilet) that decreased from 2.5% in 2013 to 1.9% in 2018⁹ in the EU and the UK.

Likewise, the WHO reports that 97.2% of the population in the EU and the UK had access to improved sanitation facilities (sewage system, septic tank or other hygienic means of sewage disposal)¹⁰ in 2015.

Since 2012¹¹, connection rates to secondary treatment have increased in more than two-thirds of the reporting Member States. Among the 15 countries that, according to the most recent data, reported a connection rate of 80% or more to at least secondary treatment are many of the early, or 'old' (former EU15) Member States, where the implementation of the Urban Waste Water Treatment Directive is more advanced, while the lowest-scoring countries were in the Mediterranean and the Black Sea region. It should be noted that connection to secondary treatment is not expected to reach 100%, since the Urban Waste Water Treatment Directive only obliges bigger agglomerations to introduce secondary treatment, while agglomerations below 2,000 population equivalents should find alternative solutions to reach the same level of protection for water bodies.

Furthermore, the new Drinking Water Directive includes a specific article addressing access to water for all, and a similar article is likely to be included in the revision of the Urban Waste Water Treatment Directive.

Key to sustainable transition

The value of water services to society goes beyond realising these human rights; there is much more. Water services do not only contribute to protecting human health and wellbeing, but also social equality, the protection of the environment and a more sustainable economy. In this sense, water services play a key role in the transition to a circular and sustainable economy, as well as in the mitigation of and adaptation to climate change, and contribute substantially to the European Green Deal.

Up to the challenge

Water services must always be forward-looking. In addition to providing security of supply on a day-to-day basis, it is also important to anticipate what problems may arise in the future and how to tackle them. Therefore, it will require shouldering myriad challenges

⁷ [Eur-LEX](#).

⁸ [Sustainable development in the European Union](#) 2020 edition, p. 123-124.

⁹ [Eurostat](#)

¹⁰ [WHO](#).

¹¹ [Sustainable development in the European Union](#) 2020 edition, p. 123-124.



such as ageing infrastructure, lack of cost recovery, imbalanced population growth, increasing pollution, with specifically, pollutants of emerging concern, and climate change that leads to more extreme weather events.

2. There is no Europe without water services

European societies could not have developed into what they are today, without the global contribution of their water services to sustainable development, protecting our health, our environment and contributing to our economy. The European urban water sector raises its voice today to highlight and promote awareness of its role and the value of water services, in order to guarantee that European citizens continue to have, at least, the same high-quality water services they currently enjoy.

a. The role of water services in contributing to sustainable development and the achievement of the SDGs






The United Nations (UN) define sustainable development¹² as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs, calling for concerted efforts towards building an inclusive, sustainable and resilient future for people and planet. Sustainable development is based on three core elements: social inclusion, environmental protection and economic growth which are interconnected and all crucial for the wellbeing of individuals and societies.

The adoption of the 2030 Agenda and its 17 Sustainable Development Goals (SDGs) in 2015 was a historic milestone for water and water services, where a specific SDG is dedicated to water and sanitation, SDG 6 "Clean water and sanitation for all". However, water and water services are not limited to this SDG 6. They are the cornerstone for the achievement of all SDGs.

	<p>Water services are vital, basic public services that contribute to reducing poverty (SDG 1) and ensuring good health and wellbeing (SDG 3), as well as agriculture, farming and food production (SDG 2). Providing accessible, affordable and safe water and sanitation (SDG 6), also contributes to the empowerment of women and girls (SDG 5) and to reducing gender inequality in education (SDG 4), thereby fostering inclusive societies (SDG 16) and reducing inequality (SDG 10). Furthermore, the water sector promotes public-private partnerships and also establishes alliances with many other stakeholders involved in the water cycle (SDG 17).</p>
	<p>There would be no sustainable cities or human settlements (SDG 11) without water services. The water sector implements solutions based on climate change adaptation and mitigation measures (SDG 13), and it also works towards</p>

¹² UN.



 7 AFFORDABLE AND CLEAN ENERGY	 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	 8 DECENT WORK AND ECONOMIC GROWTH	<p>reducing its environmental impacts and promotes efficient use of natural resources (SDG 12) and energy, by achieving increasingly improved energy efficiency and producing renewable energy (SDG 7). The water sector promotes resilient infrastructures and innovation (SDG 9) and contributes to the economy (SDG 8). In addition, waste water treatment improves the quality of water sources, protecting aquatic and marine ecosystems (SDG 14-15).</p>
 14 LIFE BELOW WATER	 15 LIFE ON LAND		

The absence of water services poses a real threat to health and wellbeing, considering the direct link to waterborne diseases, as well as to access to education and gender equality, and therefore hinders equitable social development and inclusion, as well as sustainable, inclusive and equitable economic growth.

The following chapters will further develop the role and the value of water services for each of the core dimensions of sustainable development.

b. Value of water services for the protection of health and the promotion of wellbeing

Water services have been contributing to protecting human health for a long time in Europe. Until the 19th century, people obtained the water they needed from the nearest well or from rivers, streams and lakes. At the end of the 19th century, hand in hand with huge urbanisation, water-borne diseases, such as cholera, started to spread. Furthermore, waste water was treated neglectfully: although it was diverted from the densely populated areas into canals, it flowed untreated into the rivers, lakes or into pits specially built for sewage.

The development of microbiological and chemical knowledge at the end of the 19th and beginning of the 20th century made it clear that a controlled hygienic drinking water supply and the treatment of waste water was necessary, which accelerated the development of water and waste water services, plus hygiene services (currently designated under the acronym: WASH), allowing for an increase of life expectancy, mostly through a reduction of infant and child mortality.

The remarkable efficiency of water services in Europe is such that the sector is now largely overlooked and forgotten unless there is a service outage. However, the Covid-19 crisis reminds us that water services are at the root of the most basic plans to cope with this sort of pandemic. In this sense, many European water service providers have voluntarily developed monitoring or surveillance systems to track the evolution of the pandemic through the presence of the virus genetic material in waste water.

Water service providers comply with the strict EU legislation (the Drinking Water Directive and the Urban Waste Water Treatment Directive) to prevent or eliminate pollution which can pose a risk to human health, as well as to the environment. Furthermore, the presence of contaminants of emerging concern, require a permanent evolution and adaptation of the water services in order to protect human health.



But water services not only play a role regarding the protection of human health, they also contribute to the promotion of wellbeing.

According to the European Commission, 70% of the EU population lives in urban areas, and it is predicted to rise over to 80% by 2050¹³. Wise cities, aiming at protecting their citizens, and providing wellbeing to them, are water-wise cities. In this sense, many of the climate change mitigation and adaptation strategies adopted by water service providers not only protect the city, but also citizens, by using synergies. As an example, floodable urban parks, not only protect from flooding but also create green areas to be enjoyed by people. Likewise, the use of green and blue infrastructures linked to the urban water cycle, make cities more liveable and citizen-friendly.

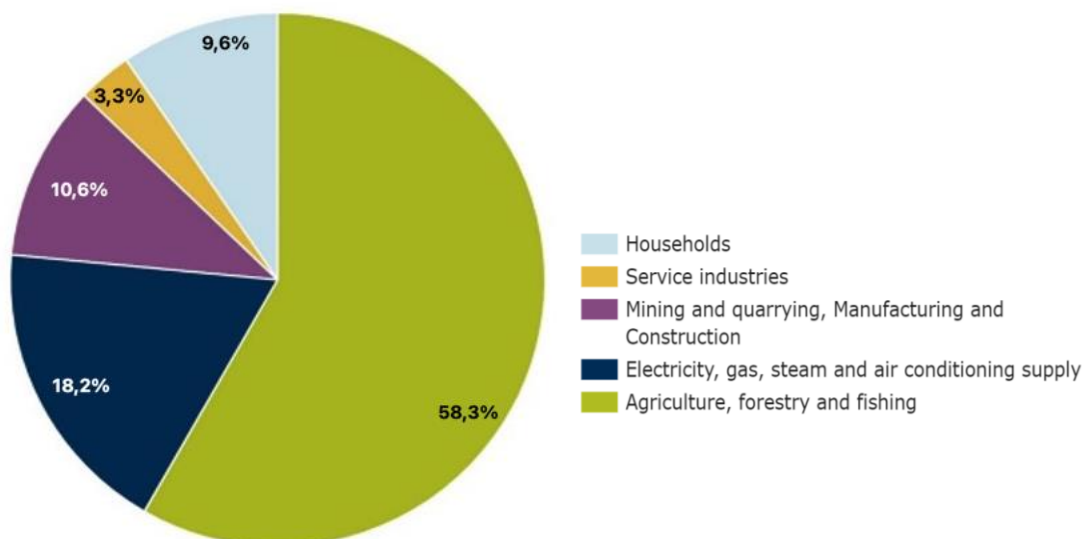
Furthermore, water service providers implement strategies to manage droughts and water scarcity, in order to ensure water supply.

Adequate water services provide people with security, wellbeing and quality of life, allowing for carrying out our daily activities with comfort and appropriate conditions, no matter what.

c. Value of water services for environmental protection

Protection of water resources and aquatic ecosystems is a key condition for maintaining a healthy environment.

Water abstraction for the purposes of drinking water supply to households has an impact on the environment. Supplying 450 million European citizens with safe drinking water, water services use 9.6% of the total annual water used in Europe, as shown in the chart below ¹⁴.



In order to see this in the wider context, it is worth remembering that while only around 9% of Europe's total farmland is irrigated, agriculture, forestry and fishing still account for

¹³ European Commission [Reflection Paper Towards a Sustainable Europe by 2030](#).

¹⁴ EEA, [Water use in Europe by economic sector, 2017 – Data cover EEA member and cooperating countries](#)



around 60% of total water use in Europe. In spring, this percentage can jump to beyond 60% to help crops grow after planting, especially highly sought after and higher-priced fruits and vegetables such as olives or oranges, which require a lot of water to mature.

Energy production accounts for around 20% of annual water use. Here, the water is predominantly used for cooling in nuclear and fossil fuel-based power plants. It is also used to produce hydro-electricity. Mining and manufacturing account for 10%.

Water services return the water abstracted to nature after collecting and treating waste water. Furthermore, water service operators are committed to continuously improving network efficiency and other water assets, thus contributing to a more sustainable use of water resources.



Without effective sanitation services, it is impossible to maintain healthy surface and ground waters, seas and oceans. Waste water treatment plants play a key role in preventing pollutants from entering the environment. They are part of the holistic, chain approach that is needed, together with effective source control measures, to be able to restore biodiversity, to reach the goals of the Water Framework Directive and to truly achieve the zero pollution ambition of the EU's Green Deal

Only a healthy and clean marine and freshwater environment protects human health and wellbeing. Water services providers are engaged in water resources protection, stopping the spread of pollutants and water eutrophication.

Moreover, water services are key players in the implementation of a circular economy. In this regard, urban waste water treatment plants are evolving into bio-factories, producing energy from biomass, recovering nutrients, producing reclaimed water for reuse and reducing their carbon footprint.

Current population growth and anthropogenic activities have an impact on the environment, and in this scenario, effective, efficient and sustainable water services become paramount for a sound environmental protection. Enabling water services to fulfil this role requires not only financing, but also public awareness and co-responsibility, implementing the Polluter Pays and Precautionary Principles, as well as a control at source approach to pollution.

d. Value of water services for economic growth

Four huge technical transitions have occurred in the relationship of water and the economy:

1. Before the Roman Empire, communities had to settle next to water sources to allow for their growth. The development of Roman towns triggered off the construction of aqueducts to transport water, allowing for the development of more prosperous settlements all around the Empire. In addition, run-off and waste water started



- being collected by sewers.
2. After the decline of the Roman Empire and its infrastructures during the Middle Age, industrialisation in the 19th Century, as already mentioned, brought a revolution in the purification of drinking water through new technologies, fighting against epidemics such as cholera, making cities safer and allowing for greater economic growth.
 3. The 20th century brought the wider dissemination of water services, establishing the circular local water cycle.
 4. We are currently in the fourth revolution of water services (Water 4.0), where digitalisation is an added value for running water services. Besides, holistic strategies are being developed and implemented, showing the need of participative governance models.

Cities therefore have played an important role in the development of water services. However they are particularly vulnerable to climate change and natural disasters and, in this sense, water services enhance the resilience of cities towards climate change, contributing to their economic sustainability. The promotion and implementation of green and blue infrastructure protect cities from flooding, for example, fostering their resilience while avoiding major negative impacts due to economic losses. Likewise, ensuring water supply during water scarcity and droughts allows for economic activities to avoid disruption. Water services may play a key role in urban planning.

Water services are relevant drivers for the transition to a circular economy. Water reuse has allowed for the development of economic activities such as agriculture even during water scarce periods, as well as for many industrial processes. Besides, water services produce energy from renewable sources (hydroelectric power, heat, biogas) and recover nutrients, such as nitrogen and phosphorus (which is very scarce as natural phosphate).

The development of water services is based on innovative solutions, which fuels economic development. Innovation, and not only technological innovation, but also in governance, communication, public policy and partnerships, is key to guaranteeing safe, sustainable and resilient water services for the decades to come. Innovation has, for example, been a key enabling factor in reducing energy demand and embracing circular economy principles. Water services embrace many disciplines such as chemistry, biology, engineering, economics, IT, etc. making it an important sector for synthetisation and the introduction of new inventions and patents.

Water services are provided 24/7 without interruption, by multidisciplinary teams of professionals (engineers, technicians, economists, lawyers, communicators, chemists, etc.). At the EU level, water services employ 475.000 full time equivalent (FTE)¹⁵. In addition, there are numerous indirect jobs in companies supplying water services providers with the products (e.g. pipes, pumps, water technology, chemicals, etc.) or services (planning, engineering, construction, advice, etc.).

¹⁵ Europe's Water in Figures – 2021 edition. EurEau. Pending publication.



Water services directly make a significant contribution to the EU economy. The sector invests approximately €41 billion annually in its infrastructure and “are net contributing sectors, both publicly and privately managed, in terms of added value and employment. The total gross value added (GVA) of the water industry (collection, treatment, supply and sewerage) reached €43.84 billion, or 0.35% of the total EU28 value added in 2010 (Eurostat, 2013). For reference, the sustainable water management market was estimated in 2011 at €361 billion worldwide (BMU, 2012)”¹⁶.

3. It’s time to spread the message

We have shown how water services are the cornerstone of sustainable development for Europe in its three dimensions: social, environmental and economic. Water services will continue to serve European citizens. But we depend on your understanding and support in raising the awareness of the role of water services for people, the environment and our economy, to address together the challenges of the present and the future.



About EurEau

EurEau is the voice of Europe’s water sector. We represent drinking water and waste water operators from 29 countries in Europe, from both the private and the public sectors.

Our members are 34 national associations of water services. At EurEau, we bring national water professionals together to agree European water sector positions regarding the management of water quality, resource efficiency and access to water for Europe’s citizens and businesses. The EurEau secretariat is based in Brussels.



EurEau

With a direct employment of around 475,000 people, the European water sector makes a significant contribution to the European economy.

¹⁶ Acteon, [Potential for stimulating sustainable growth in the water industry sector in the EU and the marine sector - input to the European Semester-Water Industry Final REPORT.](#)