INCOVER

Innovative Eco-Technologies for Resource Recovery from Wastewater

Reclaimed water: the untapped resource?

Dwindling water resources in Europe: facts and figures

Pressures on Europe's water resources are increasing, and are no longer strictly limited to the southern states:

- Water stress[1] affects 1/3 of European territory and at least 11% of its population all year round – and this is not just in southern countries! (EC, 2012 & 2018).
- Climate change is increasing the frequency and intensity of droughts[2] – projections estimate that by 2030 half of the European river basins will be affected by water stress and scarcity (EC, 2012).
- Water scarcity[3] also has a heavy economic toll: water shortages in the period 1976-2006 amounted to losses up to **€100 billion** in Europe (EC, 2012).

According to the EC and the European Environment Agency (EEA), **agriculture** places the **biggest burden** on water resources (2017). It accounts for **36 %** of annual total water use in Europe thereby imposing a massive pressure on already dwindling water reserves (EEA, 2017). This percentage goes up in the summer reaching to about 60% and, in some southern European regions, up to 80% of total water abstraction.

Belgium, Bulgaria, Cyprus, Italy, Malta and Spain are currently using up 20% or more of their long-term supplies every year. Cyprus has consumed much more than 40% of its renewable supplies (EEA, 2017).

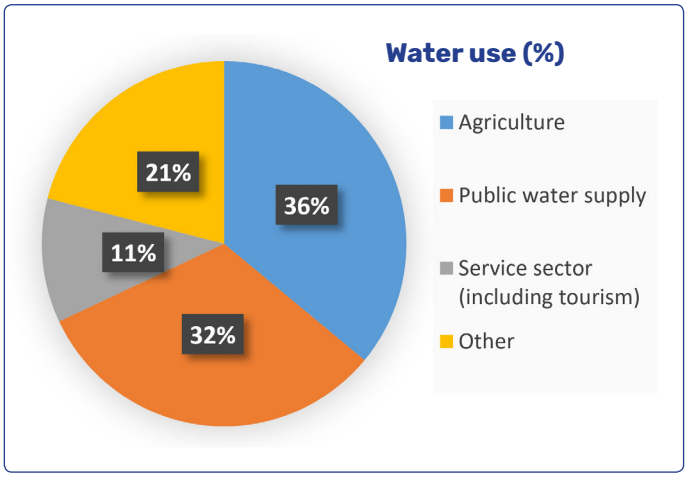
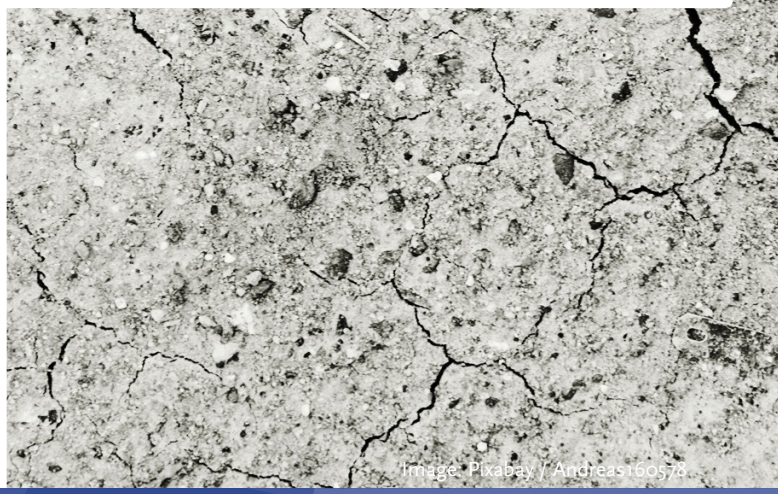


Figure: **Water use in the EU**
Adapted based on: EEA, 2017 (click here)



1 **Water stress**: "*occurs when the demand for water exceeds the available amount during a certain period or when poor quality restricts its use. Water stress causes deterioration of fresh water resources in terms of quantity (aquifer over-exploitation, dry rivers, etc.) and quality (eutrophication, organic matter pollution, saline intrusion, etc.)*" (EEA Water Glossary).

2 **Drought**: "*The naturally occurring phenomenon that exists when precipitation has been significantly below normal recorded levels, causing serious hydrological imbalances that adversely affect land resource production systems*" (EEA Glossary).

3 **Water scarcity**: "*occurs where there are insufficient water resources to satisfy long-term average requirements. It refers to long-term water imbalances, combining low water availability with a level of water demand exceeding the supply capacity of the natural system*" (EEA, 2018).

"How can we continue growing food without letting nature go thirsty for clean water?"[4]

The EEA poses the above question and recommends the following measures to **reduce water demand** in agricultural irrigation (2016):

- Investing in more efficient irrigation infrastructure and technologies;
- Improving application efficiency;
- Changing irrigation practices;
- Using more drought-resistant crops.

*Once measures to reduce demand have been fully utilised, farmers can take advantage of available **alternative water resources** such as reclaimed water.*

Uptake needs to be encouraged through policy and technical support:

- Put in place enabling policy frameworks (EU, national and local);
- Give farmers the right price incentives;
- Provide advice, assistance, training and capacity building to farmers.

Reclaimed water[5]: the untapped resource

Only about **2,41%** of the 40,000 million m^3 of the annual volume of wastewater treated in the EU is reused (EC, 2012). This poses a huge **untapped resource** useful in the fight against water scarcity. Utilising this reclaimed water for agriculture – under strict quality controls and monitoring – frees up fresh water for other uses such as drinking water and household use.

Reclaimed water for agricultural irrigation already successfully in use!

Countries such as Cyprus, Greece, Italy and Spain already use strictly regulated reclaimed water for agriculture. For example, in Gran Canaria 20% of water used across all sectors is supplied from treated wastewater, including the irrigation of 5,000 ha of tomatoes and 2,500 ha of banana plantations (EEA, 2016).

Reusing the total volume of treated wastewater in Europe could provide for nearly 44% of agricultural irrigation demand and avoid 13% of abstraction from natural sources. (EC, 2018).

Image: High Rate Algae Pond © Aqualia / Almeria

4 EEA, 2016 (www.eea.europa.eu/articles/water-for-agriculture)

5 **Reclaimed water** is urban wastewater that has been treated in compliance with the EU's requirements set out in Directive 91/271/EEC and which results from further treatment in a reclamation plant.

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Want to know more?
Then the following are just right for you!

- Would you drink your wastewater: A water brochure for young people (here);
- Water is too precious to waste – Factsheet (here);
- The European Commission's *proposal for a regulation on minimum requirements for water reuse* (here).

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