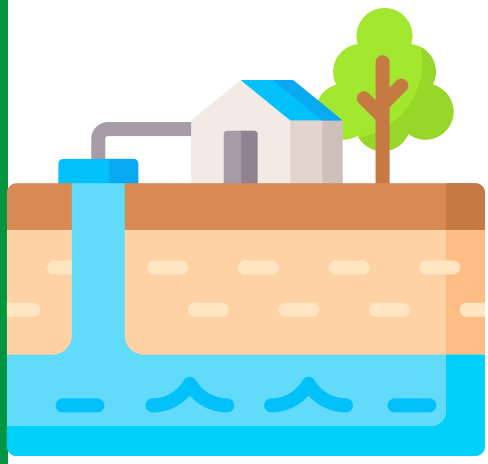
CHALLENGE 4:

Revalorization of graywater in the urban environment.



STATUS QUO PROBLEM

Water constitutes an **essential element** in nature and stands as a fundamental resource for human subsistence and the development of their daily activities. At the same time, various economic sectors, including **energy, transportation, agriculture, and manufacturing industry,** base their operation on the availability and efficient management of this water resource.

Extreme weather events, such as **heat waves** linked to climate change, impact water treatment and supply in various ways. The combination of high temperatures and increasing **water demand** pose a threat to environmental sustainability and urban quality of life. These **extreme heat events** have resulted in droughts, forest fires and thousands of deaths.

Over the past 50 years, the World Health Organization (WHO) estimates that **heat waves have caused 150,000 premature deaths in Europe.** The adaptation of cities and municipalities to these high temperatures is an unavoidable necessity, and in this challenge, water reuse emerges as a fundamental ally.

DESCRIPTION OF CHALLENGE:

We understand as **graywater** all domestic wastewater generated in **household processes, such as cleaning utensils, washing clothes and bathing**, excluding that coming from the toilet. As these waters have a lower pollutant load than conventional wastewater, they can be treated more easily.

At the European level, **domestic consumption represents approximately 12% per year,** with an average of 144 liters per person per day being supplied to households in Europe.

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In this context, graywater from household appliances such as **air conditioners, washing machines, dishwashers and showers is a valuable but underutilized source of resources.** The challenge lies in developing innovations that optimize the reuse of graywater from various domestic sources.

This water has the potential to be reclaimed and reused in activities such as **garden irrigation or toilet flushing.** The focus of this initiative is not only to mitigate the **impacts of heat waves**, but also to **highlight the environmental benefits of taking advantage of these treated water resources.** This practice not only contributes to preserving the environment, but also results in significant savings in water consumption.

Project example: HYDRALOOP

DESCRIPTION GUIDING PRINCIPLES

(TO HELP YOU WITH YOUR RESEARCH, WE SUGGEST THAT YOU READ ABOUT):

- Efficient technologies for greywater collection and treatment, **prioritizing commonly used appliances** in homes and buildings.

- Innovative systems that allow the distribution of this treated water for non-potable uses, such as **irrigation of urban crops and parks**. Positive impact on the reduction of water consumption, thus contributing to the **resilience of cities in the face of heat waves.**

OUR PARTNERS

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