

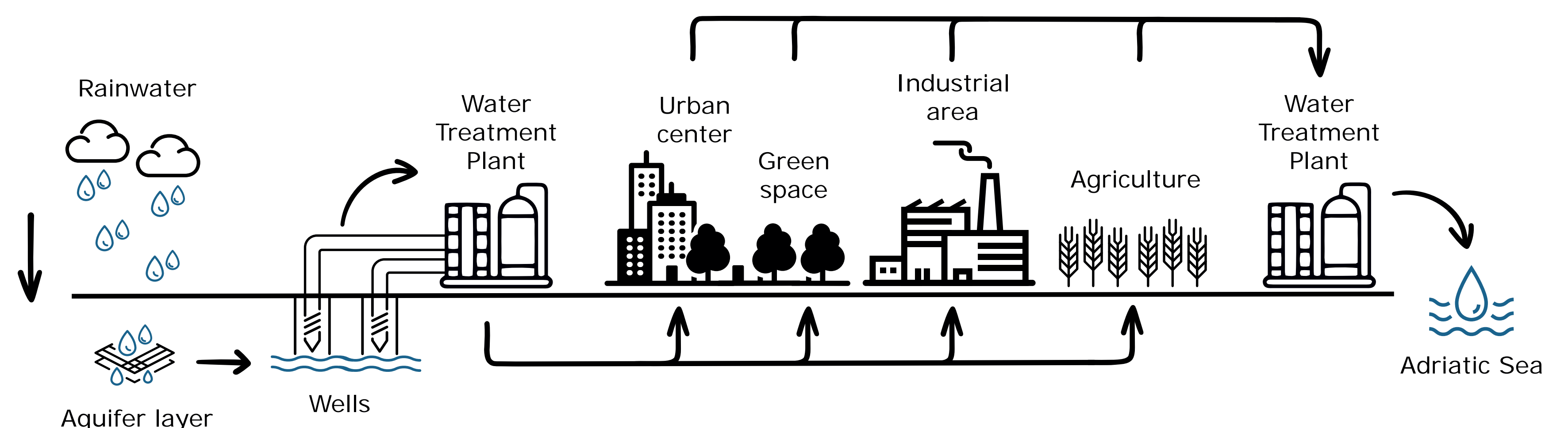
Treating previously inaccessible water sources that have been contaminated by certain microorganisms and seawater

Background

The limestone landscape of the Puglia region has formed several natural aquifers. These underground water sources supply more than 200 wells across this coastal region.



These wells were a valuable source of freshwater. After use and treatment, water taken from the wells was discharged into the sea. This drained the wells faster than they could naturally refill from the aquifers.

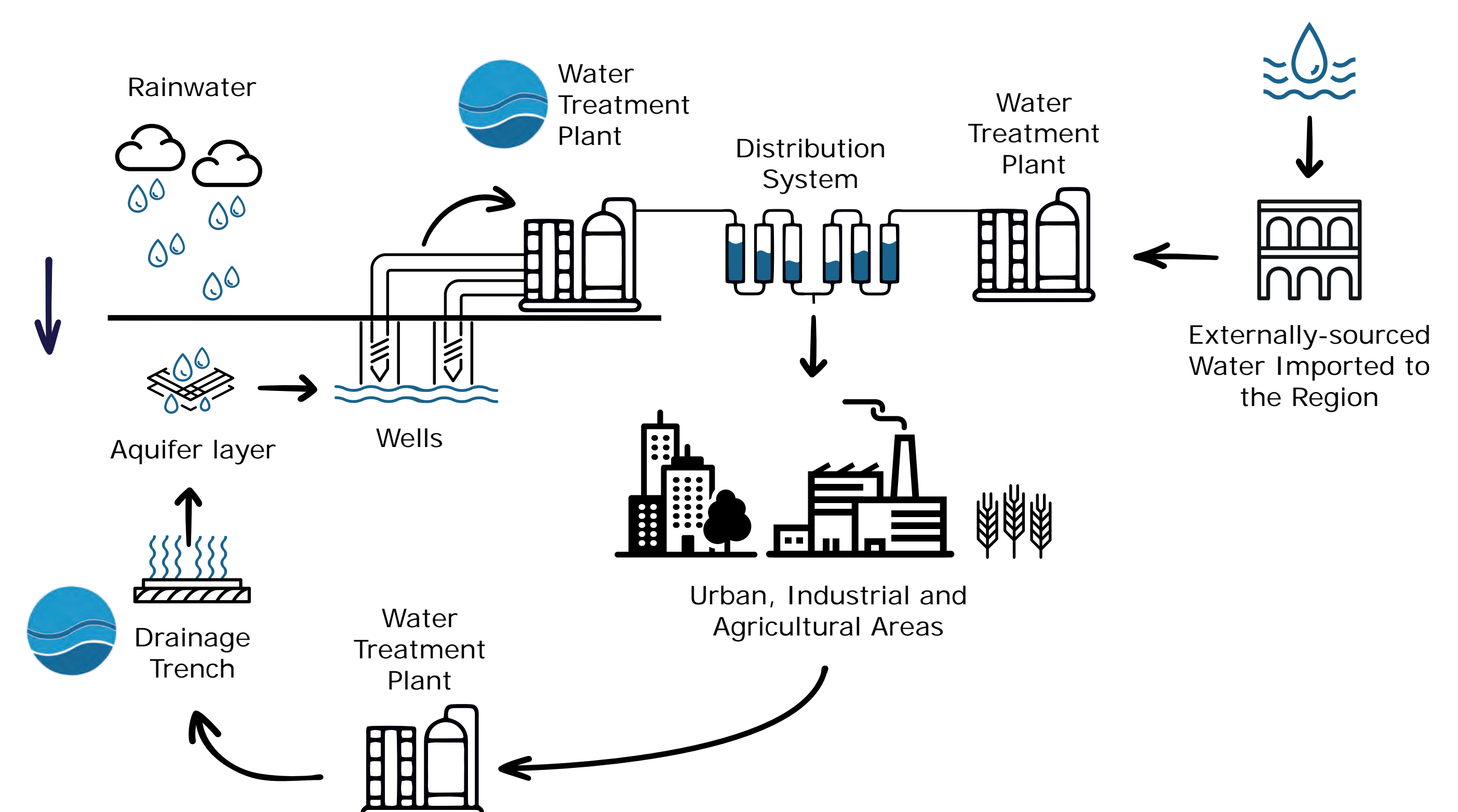


The wells were abandoned as a cost-effective, local source of water as exploitation activities have resulted in the aquifers steadily containing more salt water.

Circular Water Economy

Using Project Ô technologies, water use in the Puglia Region can apply a circular economy approach. By participating in Project Ô, the potential benefits to this region include:

- » **Maximising local water reuse** to strengthen resilience in the region and decrease the need for external water imports.
- » **Recharged aquifers** ensure their viability for future use and protects a long-term local source of water.
- » New local water reuse will **relieve pressure on the aqueduct** and can lead to a reduction of reliance on water from external sources.
- » Closing the loop requires new infrastructure and use of technologies which can lead to an **increase in local jobs in the environmental sector**.
- » Returning treated water to its source **supports the local environment** and stops water being discharged into the Adriatic Sea.



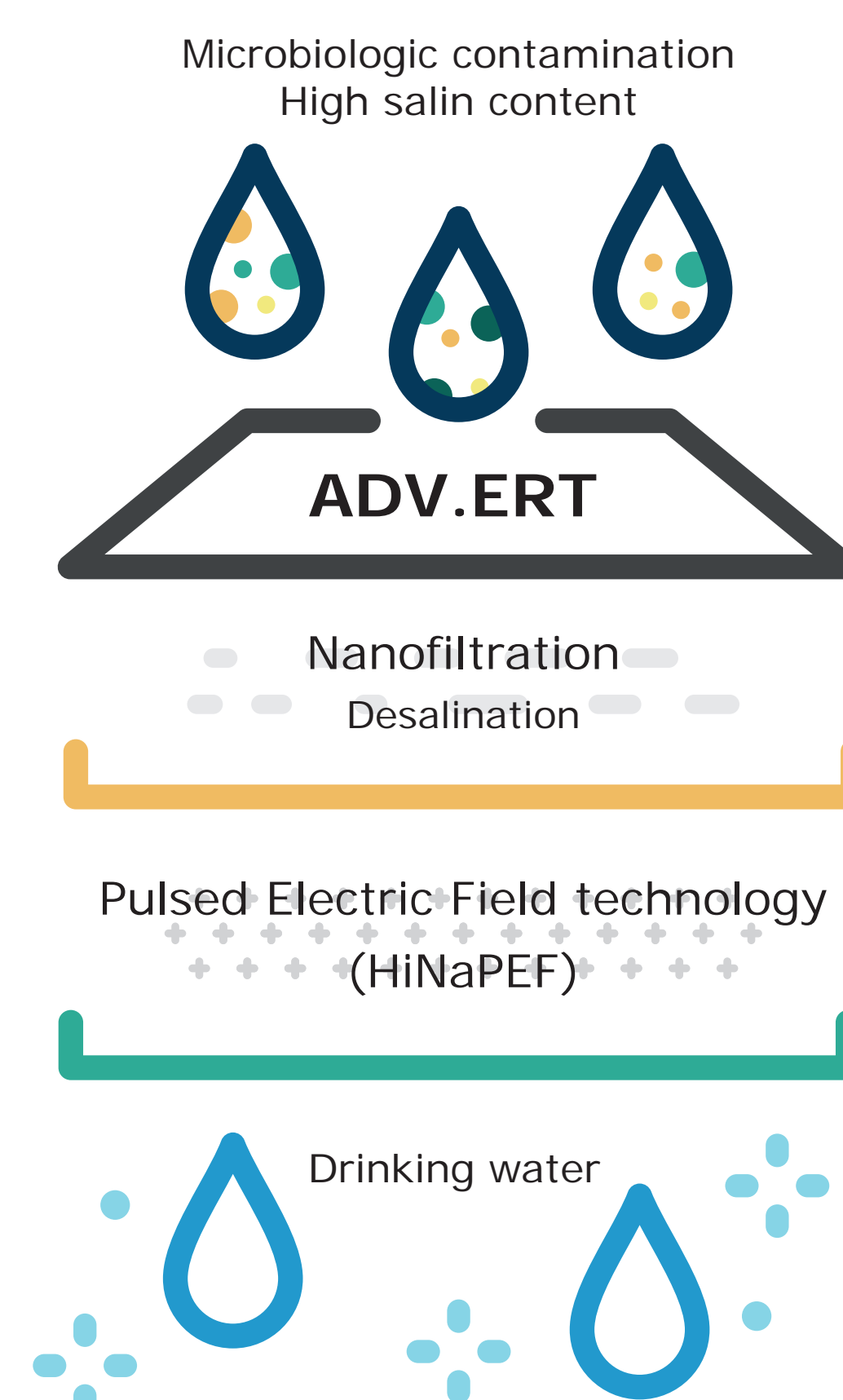
Reuse and water efficiency are key priorities for the Puglia region.

Technology

ADV.ERT is an advanced, tertiary treatment, mobile plant. It has been designed to treat contaminated freshwater out of the reach of existing water treatment plants.

The features of ADV.ERT include:

- » Relatively small dimensions.
- » Mobile and operates independently of a water treatment plant, so it can be used directly at the water source.
- » Low electrical energy consumption, which reduces costs and increases sustainability.
- » Low investment and operational costs with a low environmental impact.
- » Can be used to treat any water source with a variable level of contamination.



Project Ô has also developed a **Decision Analytic Platform (DAP)** to aid water resource management and help decision-makers compare the effect of making particular decisions.

- » Analyses difficult-to-measure factors and objectives.
- » Includes holistic factors like technology costs and local conditions.
- » Considers real-world factors, like regulations and financial mechanisms.
- » Generates interactive visualisations to aid data comparisons.
- » Shows the impacts of decisions on current and future water supply.

