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Press Release

The Waterwise consortium gathers in Avigliana (Italy) to discuss first year results and next steps.

Assessment of headwaters vulnerability through data collection and harmonization and local stakeholders' workshops are the first step to achieve resilient and sustainable water management strategies.

14 million people and thousands of fauna and flora species in the Alps are potentially affected by climate change impacts: Waterwise studies water vulnerability to test solutions for adaptation strategies and ecosystem preservation.

[Press kit](#)

Project Waterwise, co-funded by the European Union through the Interreg Alpine Space programme, celebrates its first year of activities and the expected goal of co-designing, with the Alpine communities, resilient and sustainable water management strategies for 8 pilot sites in 6 countries get closer by the day.

150 samples collected during a Spring fieldwork campaign, **24 low-cost data collector-sensors delivered to 15 sites** and **80 stakeholders**, representatives of different local interests, engaged to provide their perception on the water resource management, will draw a picture of the Alpine communities' needs at the time of the climate crisis.

In the Alps, **rising temperatures and extreme weather events threaten streams and groundwater**. A +2°C increase in the last century has been registered in the Alpine space, followed by severe consequences: fauna and flora habitat reduction, change in water availability (including snow), rise of danger and foreseeability of natural threats.

14 million people live in the Alps and are potentially affected by impacts of climate change on headwaters. This raises questions about water use, and how it can be turned into a more sustainable one, both for anthropic activities and for biodiversity, which is extraordinarily rich here, counting over thousands of fauna species and flora species.

In skiing areas, **up to 30% of human water consumption is used for artificial snow making** (Teich, 2007): the remaining 70% has to be split between drinking water, irrigation, farming, industries, hydropower production and private use. The Alpine ecosystems, too, with their extraordinary variety and the multiple consequential ecosystemic services like natural risks mitigation and climate change adaptation, are under pressure and are suffering from a decrease in water availability. A more resilient and sustainable management of the hydric resource is therefore needed to preserve both ecological connectivity and socioeconomics activities.

Nevertheless, there is no common awareness of the importance of headwaters across the Alpine space. Therefore, the final goal of the project is to provide municipalities, protected area managers or local administrators with **guidelines**, developed from different actions and data sets to assess climate change vulnerability and guide the design of more resilient water management strategies.

This first year – Waterwise was launched in September 2024 - was dedicated to methodology development: it was important to establish a protocol that will help collect data on hydrology, geochemistry, biodiversity, and the socioeconomics situation in each of the studied areas. Only an extensive outlook, provided by a multidisciplinary equipe, will provide a picture of the hydric situation of a catchment of interest.

*“The consortium brings together interdisciplinary initiatives to foster collective learning on headwaters”, says **Clément Roques, Full professor at the University of Neuchatel and project coordinator.** “Waterwise attempts to develop a harmonised vision across the discipline to assess the vulnerability of headwaters and guide resilient water management and ecosystem preservation; and for this, we need data and local knowledge from the local communities.”*

Monica Tolotti, from Fondazione Edmund Mach, co-project leader: *“We are now starting a new phase of the project, in which we will work with the policymakers to provide them guidelines on how to include headwaters in their management plans and how to make these plans able to increase the adaptation of Alpine water resources to the changing climate and socioeconomic settings. It is important that the guidelines we are proposing respond to both the local communities' needs and to the latest European or national directives, and local or regional administrators must be more involved in its development”.*

The consortium has been successful in addressing this challenge by doing fieldwork, delivering sensors, and stimulating discussion among the stakeholders, balancing existing data compilation and data collection.

In-situ data collection started last Spring, **delivering 24 low-cost sensors, called Smart Rocks, to all 15 testing and deployment sites.** Smart Rocks allow continuous measurements of water properties, and data were also collected via citizen science initiatives. This information lays the foundations to write a protocol for headwaters vulnerability assessments, as they provide an affordable solution to monitor water-related parameters on a large regional scale.

Headwaters spring water and streams quality are also showing signs of degradation, therefore a sampling campaign in late Spring/early Summer started. **Project partners collected more than 150 waters samples.** By analyzing specific chemical parameters, we can attest the water quality across the pilot sites and use it as an indicator for the vulnerability assessment.

As a parallel process, **8 workshops** – one in each pilot site across the Alps – were organized to **start a transparent and constructive discussion among the local stakeholders**, each with different interests and perceptions. It was an important step to understand the local challenges about the present and future water resources, to start developing tailored solutions for resilient water management

strategies. In total, **around 80 people were interviewed and participated in the workshops**. A second round of workshops will take place next Spring to begin testing and validating the tool.

100% of the people interviewed agreed on the statement about changes brought on by climate change, but with different levels of perceived impact. **Between 70 and 80%** of the stakeholders agreed on tourism to stay the same or even increase despite the impact of climate change. A statement confirmed by facts in some of the Waterwise pilot sites, where tourism is one of the main economic sectors: in the German region of Garmisch-Partenkirchen, where the visitor numbers in the Partnachklamm, a natural monument, more than doubled between 2010 and 2023 (240,000- 490,000), according to the data shared by the Partnachklamm administration itself. Similarly, In Val di Fiemme and Val di Cembra (Italy), hosting facilities reported an increasing trend of stays (+25%) from 2010 to 2024 (ISTAT – ISPAT, Istituto di statistica della provincia di Trento). Even if skiing, one of the most popular activities in the Alps, will be more and more difficult in the future, it is perceived that tourism will adapt and new activities will take place in the mountains over the different seasons.

The Waterwise project will provide **a framework to design possible management solutions**, coming from scientific and local knowledge, tailored to the territory. This will help limit the water usage conflict in the territories, promoting resilient territories and ecosystems.

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The “Waterwise” partnership is composed of 12 partners from 6 Alpine countries, each putting on the table their specific skills and qualifications. The 8 pilot areas are distributed across the Alpine region: Contamines-Montjoie, Grande Sassière (France), Valposchiavo, Vallon de Rèchy (Switzerland), Val di Sadole, Dosegù and Alpe Sud Glaciers (Italy), Zugspitze (Germany), Jamtal Valley (Austria), Mount Peca/Petzen (Slovenia/Austria).

The partnership is composed by the University of Neuchâtel (scientific lead), Edmund Mach Foundation (administrative lead, ITA), Réserves naturelles de France (FRA), Legambiente Piemonte e Valle d'Aosta (ITA), EGTC Geopark Karavanke/Karawanken (AUT/SLO), University of Passau (GER), Geological Survey of Slovenia (SLO), Tetraktys (FRA), Karlsruhe University of Applied Science (GER), Alpinarium Galtür Dokumentation Ltd (AUT), Regional Environmental Protection Agency of Lombardy (ARPA, ITA), and the Center for Research in Alpine Environment (CH).