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Cross KIC Report on Identified Water Scarcity Challenges as part of the call for startups to participate in competitive InnoWise Challenge Labs coping with Water Scarcity in Southern Europe

Southern Europe face major challenges to achieve sustainable management of water resources, given a demanding water-scarce context due to:

- the over-exploitation of groundwater and surface water bodies by the agricultural, industrial and municipal sectors
- the (current and projected) effects of climate change

6 main challenges are here presented. They illustrate 6 identified and prioritised levers of action that would enable to trigger system change in water management in Southern Europe. As the water-scarce system is complex, interconnectivity (and overlaps) can be observed when proposing innovative and experimental solutions, thereby addressing one or more of these challenges.

Enabling Agile Water Management, via Digitalisation

What are the digital solutions, such as mobile devices/applications, real-time sensors, artificial intelligence/machine learning, cloud options and/or “Internet of Things” (IoT) products, that can contribute to more agile and efficient water management? The proposed solutions shall boost the quality of services provided to end-users, water utilities, industry, relevant authorities, or more generally citizens, as well as strengthen the collaboration between these different stakeholders.

Raising Awareness and Promoting Education

Water carries strong societal and cultural values in Southern Europe. What type of innovative solutions can you propose to further engage citizens/communities or specifically targeted end-users, in better understanding the local water scarcity risks and educate them, as to trigger behavioural and social changes? What methodologies and/or tools can you offer to foster participatory approaches and the development of innovative educational and/or communication products/programmes?

Unlocking Water Governance and Financial Schemes

What are the disruptive water governance and/or financial schemes/instruments that can contribute to the uptake and financial sustainability of new technologies, practices and services that address water scarcity in Southern Europe? What are the learnings from other sectors (such as the marketing or the financial sectors) that can be innovatively adapted or re-purposed to the water sector?

Optimizing and Matching Water Supply and Demand

In a water-scarce context, strong efforts are to be deployed to optimise the water supply/demand ratio. What innovative practices, technologies and/or infrastructures can be proposed to enable reliable water availability for simultaneous and competing water usages? Which solutions can be proposed to cope with extreme climate events (e.g. draughts and floods)? What solutions do you

offer to address peak demands at a specific location, at a specific time of a year, or for a specific sector? What kind of technologies, processes or methods can be proposed to reduce water consumption and/or to enable water reuse (e.g. from industrial and urban treated effluents) in line with circular economy approaches?

Ensuring Better Water Consumption and Production Control to Allow Legal Enforcement

There is a current lack of consistent and sufficient data on water usage, that hinders control and enforcement. Which innovative solutions can you offer to enhance monitoring schemes for water consumption and/or production (e.g. desalination, water reuse, aquifer recharge, atmospheric water generators, etc), including data collection and management, that would be used as reference when checking on policy compliance and/or developing regulatory requirements?

Fostering Climate Change Readiness

The comprehensive climate data, scenarios, models and projections are to contribute to the development of adequate adaptation and mitigation strategies, including water management. What disruptive water-related solutions do you propose to foster climate change readiness? What relevant climate services do you offer as decision-support tools to enable the implementation of new measures in terms of integrated planning (e.g. by breaking down silos between water-using sectors), public procurement and/or water pricing?