

IMPORTANT NOTICE

What is the Application Form?

The Application Form is the template for EU grants applications; it must be submitted via the EU Funding & Tenders Portal before the call deadline.

The Form consists of 2 parts:.

- Part A contains structured administrative information
- Part B is a narrative technical description of the project.

Part A is generated by the IT system. It is based on the information which you enter into the Portal Submission System screens.

Part B needs to be uploaded as PDF (+ annexes) in the Submission System. The templates to use are available there.

How to prepare and submit it?

The Application Form must be prepared by the consortium and submitted by a representative. Once submitted, you will receive a confirmation.

Character and page limits:

- page limit normally **60** pages (unless otherwise provided in the Call document)
- supporting documents can be provided as an annex and do not count towards the page limit
- minimum font size — Arial 9 points
- page size: A4
- margins (top, bottom, left and right): at least 15 mm (not including headers & footers).

Please abide by the formatting rules. They are NOT a target! Keep your text as concise as possible. Do not use hyperlinks to show information that is an essential part of your application.

 If you attempt to upload an application that exceeds the specified limit, you will receive an automatic warning asking you to shorten and re-upload your application. For applications that are not shortened, the excess pages will be made invisible and thus disregarded by the evaluators.

 **Please do NOT delete any instructions in the document. The overall page limit has been raised to ensure equal treatment of all applicants.**

 **This document is tagged. Be careful not to delete the tags; they are needed for the processing.**

TECHNICAL DESCRIPTION (PART B)

COVER PAGE

Part B of the Application Form must be downloaded from the Portal Submission System, completed and then assembled and re-uploaded as PDF in the system. Page 1 with the grey IMPORTANT NOTICE box should be deleted before uploading.

Note: Please read carefully the conditions set out in the Call document (for open calls: published on the Portal). Pay particular attention to the award criteria; they explain how the application will be evaluated.

PROJECT	
Project name:	Mediterranean network for sustainable and circular water management in the agrifood sector
Project acronym:	AquaLoops4Med
Coordinator contact:	Xavier Amores Bravo, Asociación Catalana para la Innovación y la Internacionalización del Sector del Agua, Catalan Water Partnership

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PROJECT SUMMARY

Project summary

See Abstract (Application Form Part A).

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1. RELEVANCE

1.1 Background and general objectives

Background and general objectives

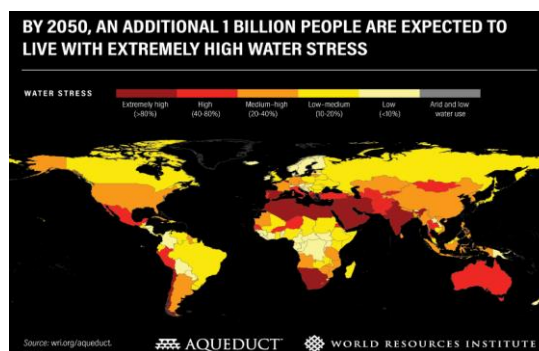
Describe the background and rationale of the project.

How is the project relevant to the scope of the call? How does the project address the general objectives of the call? What is the project's contribution to the priorities of the call?

Background

Water resources are limited and unevenly distributed in space and time, being the main limiting resource for agricultural production worldwide, but specially in the Mediterranean areas. Meanwhile, the global food demand is expected to increase by 70% for the year 2050 (Dijk, Morley et al. 2021) and will have to coexist with the limited availability of arable land, unpredictable fixed costs and with the growing scarcity of water (FAO, 2019). In this context, issues related with water resources are present in the top five risks and threats highlighted in the last World Economic Forum annual report (W.E. Forum, 2021) such as: a) extreme weather events, b) failure to combat climate change, c) loss of biodiversity, d) natural disasters and, and d) the crisis in water management. Drought has an increasing world-wide occurrence (Tramblay et al., 2020), and poses an important challenge to water management. According to the Intergovernmental Panel on Climate Change, the Mediterranean is already undergoing atmosphere and sea warming and projections highlight progressive warming and changes in rainfall (Stocker et al., 2013; Cherif et al., 2020), which will in turn increase climate hazard thus making it an increasing "climate change hotspot" (Giorgi, 2006, Urdiales-Flores et al., 2023).

Associated with the increase in temperatures, drought is also an increasing trend. This implies, on one hand, a decrease in water availability and, on the other hand, an increase in water demand, leading to an overexploitation of water resources, both in terms of groundwater and surface water. The increasing water scarcity was found to be a significant threat to agriculture (Jiménez Cisneros et al., 2014; Kovats et al., 2014; Niang et al., 2014; Mrabet et al., 2020) and will also negatively impact other key economic sectors for the region, such as tourism or industry. The European Environment Agency analyses water scarcity conditions in Europe based on the Water Exploitation Index plus (WEI+), an indicator that estimates the total water demand of a river basin in proportion to its long-term available freshwater



resources. Values above 20 % are considered to be a sign of water scarcity, while values equal or greater than 40 % indicate situations of severe water scarcity, meaning the use of freshwater resources is unsustainable. According to the latest available data, countries located in the Mediterranean are the most affected ones, with Greece (70.2%), Italy (57.0%) and Spain (47.2%) ranking in the top 7 countries¹. On the other hand, the other side of the coin of climate change, opposite to droughts, is the increase in frequency, duration and intensity of floods. In this sense, the IPCC estimated that 20% of urban areas in the Mediterranean region would be hit by floods, which pose at risk human lives and economic activities.

All in all, droughts, storms and floods, all water-related phenomena, dominate the list of disasters over the past 50 years at global level, both in terms of human and economic losses, according to a comprehensive analysis by the World Meteorological Organisation (W.E.Forum, 2021). Overall, over the last 50 years, weather, climate and water hazards accounted for 50% of all disasters and 74% of all economic losses worldwide.

In this climate change context, resource efficiency is crucial to ensure long-term sustainability of economic activities. In particular, the entire agrifood system accounts for more than 15% of the GDP in the Euro-Mediterranean countries, being among the lead sectors in foreign sales from the region. The Mediterranean agrifood sector accounts also as the major water consumer in the area and contributing to environmental degradation. At the same time, the agrifood production is at constant risk of being jeopardised by the consequences of climate change. Thus, the sustainable management of natural resources, rural development and food production and security are interdependent aspects that ensure the well-being of rural communities and provide significant inputs to downstream industries, from food processing to tourism². All around the Mediterranean's rural areas, food production and food security are of paramount importance. Given the importance of small and medium-sized farms in the rural areas of the southern and eastern Mediterranean countries and their mobilization of the family workforce, family farms contribute to food security of farm households and local communities by the supply of domestic markets. Furthermore, since the impacts of climate change are likely to include the degradation of agricultural water resources and loss of fertile soils, ensuring food security and rural vitality by adapting agriculture to climate change is also necessary. Indeed, small farmers will be directly affected by these impacts, which represent risks in terms of the stability of rural areas.

1. General objective

In context described above, and in accordance with European strategies and policy initiatives such as the Green Deal and the Farm to Fork strategy, it is compelling to promote a more sustainable use of water in the agrifood sector to make the Mediterranean regions more resilient and competitive. The AquaLoops4Med project aims to create an interregional network to foster an efficient and sustainable water management across the Mediterranean, with a specific focus on the agrifood sector. The project implementation will comprise interregional investments in the demonstration, scale-up and commercialization of innovative, sustainable and circular solutions to improve water management in the Mediterranean encompassing technologies and services for efficient water management, water losses reduction and process optimization, the need to exploit alternative water sources, but also appropriate wastewater treatments and wastewater reclamation practises to face the increased water demand for non-potable uses under a circular economy perspective. The project aims at strengthening the innovation ecosystem of four participating regions: Catalonia (ES), Basilicata (IT), Attica (EL) and Thessaly (EL), with a high potential for replication, giving support to local entrepreneurship and facilitating flows of knowledge transfer across the quadruple helix. A special focus will be put on SMEs that will be supported both via direct involvement in the project consortium for the demonstration of a set of innovative technologies (TRL 6-9) and via cascade funding.

2. Alignment with the objectives of the call

Call objectives

Addressed by:

¹ <https://www.eea.europa.eu/ims/use-of-freshwater-resources-in-europe-1>

² https://wedocs.unep.org/bitstream/handle/20.500.11822/7097/mssd_2016_2025_eng.pdf

Provide financial and advisory support for demonstration activities, the commercialisation and upscaling of interregional innovation projects in shared or complementary smart specialisation areas	AquaLoops4Med will fund and assist a set of flagship SMEs in the demonstration of technologies and solutions for sustainable and circular water management in the agrifood sector having a minimum TRL of 6 with the support from the quadruple helix across 4 regions in the Euro-Mediterranean (WP2).
Develop value chains in less developed regions.	The creation of the AquaLoops4Med network will strengthen the innovation ecosystems in less developed and transition partner regions by supporting SMEs, fostering knowledge exchange among stakeholders and bridging the gap between supply and demand in sustainable water management (WP3 and WP4)
Enable less developed regions to participate in EU value chains, contributing to cohesion policy objectives.	Aqualoops4Med involves 4 regions from the Euro-Mediterranean area having different development levels and includes 2 less developed regions (Basilicata and Thessaly). The project also involves other less developed regions in transferability activities in 10 regions, with at less 5 could be less developed.
To link and align the bottom-up process centred on “entrepreneurial discovery” that involves interactions among quadruple helix actors to identify new regional technological domains and market opportunities with the EU priorities; and to bridge the gap between the supply and demand sides and help innovation ecosystems overcome market failures.	AquaLoops4Med applies a bottom-up demand-driven approach and Shared Agendas methodology. The demonstration activities (WP2) are designed with end-users and the second streams of investments (WP3) will follow a previous mapping of opportunities and needs from the agrifood sector.
To provide support for companies (in particular SMEs) in building portfolios of interregional innovation investments in shared or complementary S3 priority areas; and to support the demonstration, market uptake and scaling up of mature innovations to be brought on the market	Investments will follow a threefold approach, as they will be delivered via direct involvement of flagship SMEs in the AquaLoops4Med consortium (especially WP2), by means of cascade funding (WP3) and by seeking opportunities through the Interregional Innovative Ecosystem Platform for Green Tech Investment Funds (WP4).
Call Specific objectives	Addressed by:
Investments in the management of natural resources	AquaLoops4Med aims at demonstrating innovative, sustainable and circular solutions for water management
Business investments in circular economy to replicate and scale up successful circular economy solutions which can generate EU added value	The project follows a circular economy approach in which wastewater, vegetable waste and animal waste are treated and revalorised for the production of high-quality reclaimed water, biogas, biostimulants and biopesticides.
Investments in bioeconomy, efficient and sustainable agriculture and inland water sustainable solutions.	Specific focus on solutions for the optimisation of water management in the agrifood sector, with demo activities to close the loop in livestock farms by means of a) rainwater harvesting b) onsite wastewater treatment and reclamation c) application of reclaimed water for fertirrigation in nearby fields for agricultural production, controlled by a novel, digital and efficient irrigation system

1.2 Needs analysis and specific objectives

Needs analysis and specific objectives

Describe how the objectives of the project are based on a sound needs analysis in line with the specific objectives of the call. What issue/challenge/gap does the project aim to address?

The objectives should be clear, measurable, realistic and achievable within the duration of the project. For each objective, define appropriate indicators for measuring achievement (including a unit of measurement, baseline value and

target value).

Needs Analysis

AquaLoops4Med takes as a starting point the shared challenge of water stress in the four participating regions: Basilicata (IT), Thessaly (EL), Attica (EL) and Catalonia (ES). These regions are also characterised by a strong economic relevance of the agrifood sector, high water consumptions and shared priorities in S3 agendas. AquaLoops4Med aims at covering environmental needs as well as innovation ecosystems and companies' – and in particular SMEs – needs in the four participating regions: Catalonia (ES), Basilicata (IT), Attica and Thessaly (EL). The environmental needs are connected with adaptation to climate change affecting water availability and with the necessity of increasing food security by harnessing the water needs in the agrifood sector. The needs of SMEs are related with the necessity of turning these environmental challenges into business opportunities by developing, demonstrating and commercialising greentech products, services and solutions. In Greece, Italy and Spain SMEs are key players in the field of "water supply; sewerage, waste management and remediation activities", as indicated in Table 1 but more efforts are needed in order to support entrepreneurship, especially in less developed regions, and to boost SMEs competitiveness. The relevance of the agrifood and the water sector in the three countries addressed by the project is displayed in Table 2.

Table 1. Number of enterprises by enterprise size class, 2017. Source: Eurostat

Country	Number of persons employed (%)		Gross value added (%)		Number of enterprises (%)	
	small	medium	small	medium	small	medium
Greece	38.9	38.7	21.4	36.2	96.9	2.9
Italy	27.5	24.9	22.8	25.1	93.4	5.2
Spain	21.1	18	18.8	20.5	94.6	4.1

Table 2. Gross value of the agrifood and water sectors Source: OECD.

	Gross value 2020 (€ Millions)			
	Total activity	Crop and animal production, hunting and related service activities	Water collection, treatment and supply	Sewerage, waste collection and management services
Greece	145 087.671	6 352.172	660.762	1 035.801
Italy	1 502 654.9	30 581.8	5 124.6	11 934.3
Spain	1 021 086	29 541	4 765	7 896

Challenges posed by climate change in the participating regions

In the last two years in Spain accumulated rainfall has been below normal values, with a negative cumulative Standardised Precipitation Index (SPI). In Catalonia, there has been nearly no significant rainfall in the past three years. At present (October 2023), water reserves in Catalonia are only at 21% of their capacity, with 10 out of 18 water exploitation units in a state of exceptionality according to the Catalan drought plan and 3 in emergency, which entails severe restrictions on agricultural uses (40% and 80% in exceptionality and emergency, respectively), livestock (30% and 50% in exceptionality and emergency, respectively), industrial (15% and 25% in exceptionality and emergency, respectively) and recreational uses (50% and 100% in exceptionality and emergency, respectively), irrigation of public and private green areas (forbidden) and even restrictions for domestic use (230 and 200 l/person/day in exceptionality and emergency, respectively). This situation follows storm "Gloria", a flash flood that hit Catalonia in January 2020 and caused 14 deaths, 2 missing persons and over 80 casualties as well as damages for 76M€, mainly to household, businesses, industries and infrastructure.

In Italy, Basilicata is a southern region of strong orographic contrasts. Its territory consists of mountain area, a large presence of hills and at the end a very important flat area. Until now, the water supply in Basilicata has not been a serious problem for several reasons: in a large part of the region, especially in the mountains, a large amount of rain falls during the different seasons; the presence of 4 large dams that

can store large quantities of water used for different purposes (agriculture, zootechnics, tourism, drinking water, etc.); in the last 30 years political decisions have been direct to increase the water network in relation to the different uses and destinations of the collected water. However, this apparently idyllic situation is likely to change due to 2 main factors: climate change and the increase in extensive and intensive agriculture and industrial development. In this context, the possibility of recovering wastewater and reusing it, for example in agricultural systems, would increase water availability for other uses. Moreover, the availability of water could be an economic attractor for investors who could contribute to the economic development of Basilicata and, consequently, to the development of an efficient strategy for all Mediterranean countries. In this way and with this innovative political approach, water could be transformed into a high value material that could be exchanged.

In the Attica region climate changes are expected to increase the frequency of drought periods, which would last longer and occur more frequently. Vulnerability to drought in the region is expected to increase by 2100 from low to moderate levels under the IPCC A1B emission scenario. A decrease in precipitation is also projected in autumn across the region under the A1B scenario by 2100, while slight increases are projected in spring. This is expected to cause decrease in river flow and consequently increased competition between different water users.

Thessaly, in Greece, was found to have a 49% WEI+ in its central part (Alamanos et al.2022). Besides droughts, the region has also historically been affected by floods. Thessaly is the most vulnerable Basin District of Greece, and the flood-risk zones cover the 31.2% of its area (GMECC, 2017). This became more than evident in 2020, when Thessaly was hit by “Medicane” storm Ianos (4 fatalities, over 200 million € of damage) and just recently, in September 2023, when storm Daniel caused 17 fatalities, >700 km² flooded land; >220,000 animals drowned and estimated damages of over 2 billion €). Unfortunately, according to climate projections, such events will become more intensive and more frequent, alongside with increased temperatures, reduced rainfalls, while at the same time increased water demand for agricultural activities.

Relevance of the agrifood sector in the participating regions and associated water consumption

In Catalonia, water usage for agriculture accounts for 70% of total water usage, with relevant differences between the two water administration regions in this area. In the Catalan part of the Ebro basin the main water sources are dams in the Ebro River or its tributaries. This area has low population density and an important irrigated agriculture, which accounts for 94% of withdrawals. On the other hand, in the Catalan Inner Basins the water resources include surface water from several dams in regional rivers, as well as groundwater and desalination plants. The area is densely populated and with a diversity of economy sectors competing for water resources, where urban water consumption is the major user (44%) followed by agriculture (35%). The usage of reclaimed water for irrigation is receiving increasing attention, especially in specific spots near the coast, where the more water-tensioned scenarios occur. According to the Government of Catalonia, the agri-food sector drives Catalan exports as a whole and is the engine of the Catalan economy (with a value of €43.1 billion, the sector represents 19.2% of Catalan GDP). Proof of this is that one out of every seven euros exported by Catalonia comes from agri-food exports (15.64%). Currently, Catalonia’s foreign sales of agri-food products are equivalent to 6.47% of Catalonia’s GDP. The agri-food subsectors, sorted by decreasing exports volume are meat, fine food sector vegetable oils, cereals, wine, and fish and seafood.

In Greece, the region of Thessaly is a vital agricultural area, particularly for the production of grain, cattle, and sheep. Although the region accounts only for the 5% of the national GDP (7,853 out of 155,780 million in 2018), it is the second biggest agricultural producer in the country (935 millions of Gross-Value-Added from agriculture) (ELSTAT, 2021). Thessaly region also is one of driest areas of Greece but because of farming, it is the largest water consumer of the country – staggering 92% for total water consumption is used for farming (GMECC, 2017)

On the other hand, Attica is by far the largest contributor to the Greece’s national GDP (contributing almost a half - 74,260 out of 155,780 million in 2018). Out of this, only 316 millions, or 0,5% of it is made through agricultural production. However, Attica has prominent role in Greece’s innovation ecosystem, including innovative agriculture SMEs. Gross domestic expenditure on R&D in Attica is 1,334 million € (or 355 € per inhabitant) compared to 74 million € in Thessaly (or 103 € per inhabitant). This is more than 2x lower than average R&D expenditure in Euro area – 745 € per inhabitant (Eurostat, 2018)

In Basilicata, the most important sector of the economic and social life of the region is the agriculture and it is characterized by different agricultural systems. The work of transformation, reclamation and extension of irrigation, begun with the agrarian reform and intensified by the action of the regional authority, has returned to agriculture areas of fundamental importance, changing not only the organization and directions of agriculture, but also the very geographical distribution of production. The productive framework of

Basilicata today has its strong points in livestock farming (production of meat, milk and cheese into the hill and mountain areas), cereal growing (cultivation of durum wheat), horticulture and fruit growing (especially in plain areas of the Metapontino), viticulture and olive growing.

SMEs owned challenges

SME / Region	Need for technology development	Need for User-led innovation	Need for Scale-up and commercialisation	Need for financing
AERIS		X	X	X
AGENSO			X	X
BIOINNOVA	X		X	
FRESHMILK	X			X
HYDRASPIS		X	X	X
WE&B		X		X

Needs in the S3

In the past years, the current partner regions have each invested in their own hubs to provide support to the Q-helix actors and the market needs. The current situation is characterised by a scattered approach, with a lack of common strategy, but with a commitment of each of the regions to co-invest further and above all to professionalise and align their services to tackle the societal challenges and market needs in a more coherent way.

- a) The way of working in innovation is different: multiple approaches and elements are developed in different regions that should be aligned in a next generation innovation ecosystem to deliver quick, frugal, and evidence-based innovation and to overcome fragmented management of innovation:
 - Innovation hubs are doing the same at different places.
 - Building expertise locally, but not sharing with other regions leads to a limited local impact.
 - The expertise of other regions is not being used in the innovation process.
 - Innovation in the water management and innovation in the agrifood sector are carried out in separate contexts: a more interconnected way of collaborating will bring benefits to both developers and end users, thus contributing to the creation of new value chains.
- b) The transition from Innovation towards the market uptake is fragmented; there is a large number of SME-driven innovations that experience barriers to scale up in quick evidence driven manner; public-private collaborations, investments and business development in this domain are necessary, but have proven to be difficult (for reasons of procurement, a-synchronic approaches but also because of the traditional fragmented way of working in this domain in the public sector).
- c) Fragmented support programs (business accelerators) that are being used to support the market entrance of innovations: Due to this fragmented approach, a lot of common European challenges are being tackled in parallel and experiences are not shared and therefore also public and private investments are scattered. Excellences and best practices in different regions complement each other. A more comprehensive and coordinated interregional approach is needed to capture the tremendous opportunities in the field of Food and Water and improve the investment readiness of this market.
- d) Transitioning and developing regions need stronger, synergetic Q-helix collaboration at interregional level, to offset their typically fragmented institutional frameworks and support programmes, and weaker business environment.

Table 3. Complementarity of S3 priorities in the participating regions.

Region	S3 priority
Basilicata	• Bio based and integrated economy • Green economy • S3 thematic platform: agrifood
Thessaly	• Agrifood and nutrition

Attica	• Agri-Food Value Chain
Catalonia	• Environmentally friendly resource system • Sustainable food system

Specific objectives

- 1) SO1: To invest in 6 pre-identified flagship SMEs directly involved in the project consortium to support them in demonstration activities and assist them in commercialising their innovative solutions [4 technologies (Aeris, Agenso, Bioinnova, Hydraspis) and 1 service (WE&B)]
- 2) SO2: To identify, scout and provide support to between 40 and 60 SMEs through cascade funding to develop, demonstrate, commercialise, scale-up and accelerate innovations aimed at improving water management in the agrifood sector
- 3) SO3: To strengthen the innovation ecosystem of the involved regions by engaging stakeholders from the quadruple-helix, providing policy recommendations and promoting social innovation
- 4) SO4: To foster replication and transferability of technologies and solutions to other EU markets, with a special focus on other Euro Mediterranean countries and regions.

Project indicators related to specific objectives

SO1: To invest in flagship SMEs			
Indicator	Unit of measurement	Baseline	Target value
Number of flagship SMEs as partner developed as interregional investment cases	Number	0	6
Number of demo sites	Number	0	2
Number of innovative technologies/services adopted / brought to market by Flagship SMEs	Number	0	5
Number of new products / services with increased Innovation maturity in terms of Technology Readiness Level (TRL)	Number, TRL	TRL 7	TRL 9
Private investment leveraged by the project	EURO	0	1,500,000
Number of final users of SME products/services	Number	0	3
SO2: To support 40 to 60 SMEs through cascade funding			
Indicator	Unit of measurement	Baseline	Target value
Number of calls for new interregional investment cases	Number	0	2
Number of SMEs identified and supported to build interregional investment cases	Number	0	40-60
Average number of regions involved in interregional investment cases/value chains	Number	0	4
Number of innovative technologies adopted / brought to market by SMEs	Number	0	40-60
Number of interregional innovations accelerated	Number	0	40-60
Number of new products / services with increased Innovation maturity in terms of Technology Readiness Level (TRL)	Number, TRL level	15*TRL6 20*TRL7 5*TRL8	10*TRL7 15*TRL8 15*TRL9
SO3: To strengthen the innovation ecosystem			
Indicator	Unit of measurement	Baseline	Target value

Creation of interregional value chain through a platform connecting the regional innovation ecosystems	Number	0	1
Number of quadruple helix collaborations in subprojects	Number	0	20
Number of public-private collaborations in subprojects	Number	0	20
Number of innovative technologies applied in a public-private partnership	Number	0	5
Strengthening regions in transition and less developed regions	Number	0	3
New partners added to existing regional ecosystems	Number	0	5
SO4: To foster replication in other EU regions			
Indicator	Unit of measurement	Baseline	Target value
New regions adding to the AquaLoops4Med network	Number	0	2
Regions considered in the replication and transferability plan for technology uptake	Number	0	10
Countries considered in the replication and transferability plan	Number	0	4
Policy recommendations adopted in the participating regions	Number	0	4-6

#@COM-PL-CP@#

1.3 Complementarity with other actions and innovation — European added value

Complementarity with other actions and innovation

Explain how the project builds on the results of past activities carried out in the field and describe its innovative aspects. Explain how the activities are complementary to other activities carried out by other organisations.

Illustrate the European dimension of the activities: trans-national dimension of the project; impact/interest for a number of EU countries; possibility to use the results in other countries, potential to develop mutual trust/cross-border cooperation among EU countries, etc.

Which countries will benefit from the project (directly and indirectly)? Where will the activities take place?

The project has complementarities with several other networks and initiatives, such as:

- **Water Europe** (CWP, WE&B, ICRA, AGENSO, NTUA). Member-based association that promotes water-related innovation, research, and technology development in Europe with the ultimate ambition of achieving a Water-Smart Society. WE are a purpose-driven multi-stakeholder association with over 250 members, representing the entire range of actors in the innovative water ecosystem. It was established by the European Commission as a European Technology Platform.
- **Circular City Re.Solution** COST Action CA17133 "Implementing nature-based solutions for creating a resourceful circular city" (2018-2023) (ICRA, CWP). It was a network of research, companies and stakeholders spread over Europe and near neighbouring countries. The objective was to bring together a large diversity of disciplines taking holistic approach on embedding nature-based solutions within circular economy. A circular flow system that implements NBS for managing nutrients and resources within the urban biosphere will lead to a resilient, sustainable, and healthy urban environment.
- **PTEA (CWP, IRTA, ICRA)**. The Spanish technological water platform. An association to foster R&D+I in the water sector

Moreover, the project builds on the experience of the consortium in several previous project. An exhaustive list of main project is annexed. The most relevant ones are:

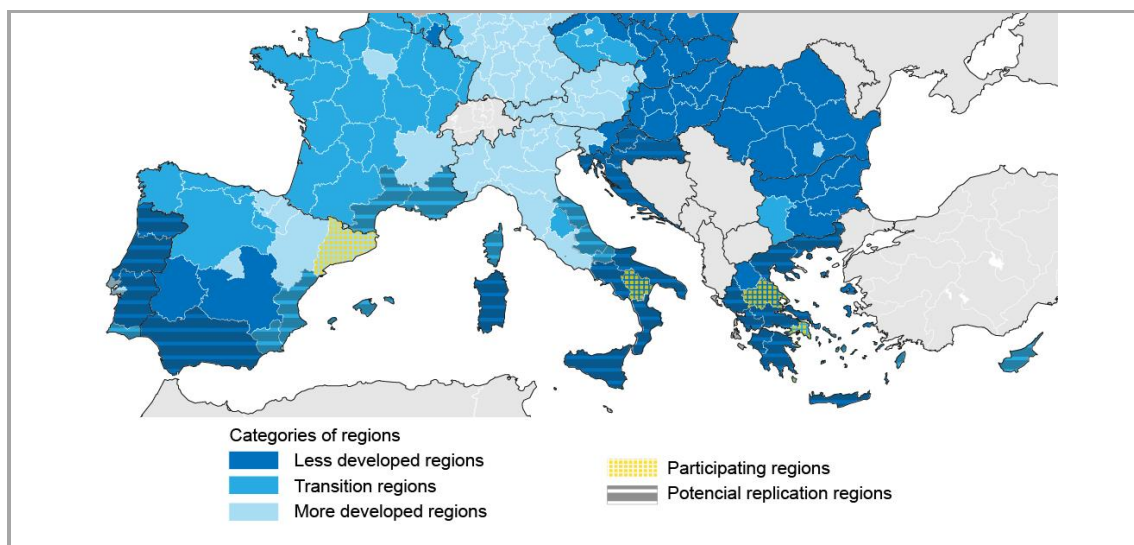
- **HYDROUSA** (Demonstration of water loops with innovative regenerative business models for the Mediterranean region, H2020, 2018-2023) (CWP, NTUA, Aeris, ICRA, HYDRASPIS, AGENSO). HYDROUSA aimed to revolutionize the water supply chain in Mediterranean regions by demonstrating innovative decentralized solutions for water/wastewater treatment and management,

closing the water loops.

- **PRIMA SAFE** (UNIBAS, ICRA) "Sustainable water reuse practices improving safety in agriculture, food and environment" is a PRIMA project (2022-2025). It will: a) develop, validate, and optimize novel low-cost and low-energy urban decentralized wastewater treatment and reuse; b) evaluate their impact on crops performance, using modern -omics tools, and on local biodiversity; c) monitor emerging pollutants in water, soil, and produced crops and evaluate the safety of the proposed approaches; d) minimize the impacts and promote environment respectful practices, like pest management by biofertilizers; e) locally promote farmers' acceptability.
- **NANOWATT** (UNIBAS) "Diffusion of nanotechnology-based devices for water treatment and recycling. Project leader, registration No. I-B/2.1/049. Funded by EU in the framework of ENPI-CBC MED Programme. The main objective was to use and compare different process for water treatment (e.g., adsorption, ultrafiltration, reverse osmosis, heterogeneous/homogeneous photocatalysis, various nanostructured materials of modified natural origin).
- **BOOST-IN** (HE, Boosting the uptake of innovative solutions in the context of water and circular economy) (AGENSO, NTUA) The BOOST-IN project aims to develop a successful strategy that promotes technological changes, governance schemes, shifts in mind-set and organizational structures in order to solve these problems through a better management of the water sector and application of the circular economy principles, enabling water reuse and recovery of different materials (e.g. energy, nutrients).
- **AccelWater** (Improving water efficiency in the food and beverage industry) (AGENSO, NTUA). The AccelWater project focus on the optimisation of freshwater water consumption in the food and beverage industry under a water-waste-energy nexus. Beyond state-of-the-art reclaiming and reusing technologies as well as Artificial Intelligence enabled monitoring and controlling systems are used to support the use of reclaimed water in the manufacturing processes of food and beverages while allowing waste and energy reclamation and development of added value products through material recovery.
- **ACCWA** (2019-2024) (IRTA): Accounting for Climate Change in Water and Agriculture Management (RISE 2018 - EC) <https://accwa.isardsat.space/>
- **VISCA** (2017-2020) (IRTA): Vineyards Integrated Smart Climate Application <https://www.visca.eu/>
- **CARDIMED** (HE 2023-2028 Climate Adaptation and Resilience Demonstrated in the MEDiterranean region) (NTUA, HYDRASPIS) CARDIMED is a part of the EU mission on Adaptation to Climate Change and will demonstrate 47 different types of Nature-based Solutions through 83 interventions across 10 regions and 20 locations.
- **DECISIVE** (A DECentralized management Scheme for Innovative Valorization of urban biowaste, H2020, GA 689229, 2026-2021) (AERIS). Proved SSF is a valuable and reliable alternative for food waste processing (TRL: 5-6).
- **SCALIBUR** (Scalable technologies for bio-urban waste recovery, H2020, GA 817788), 2018-2022) (AERIS). Optimization of SSF for solid waste processing (TRL: 5-6).

Countries benefitting from the project.

The countries directly benefitting from the project's activities will be the three EU countries where the participants are located: Spain, Italy and Greece. Because of the project ambition to address an environmental and economic challenge shared across the Mediterranean, all countries located in the area will benefit from AquaLoops4Med and will be contacted in the framework of replication activities. Namely, the most promising countries interested in replication activities will be Croatia, Cyprus, Spain and France. Despite not being located in the Mediterranean, Portugal also shares the same challenges in terms of water resources, so will also be taken into account. The project aims to impact 10 regions in transferability activities, 5 of these less developed regions or in transition.



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2. QUALITY

2.1 Concept and methodology

Concept and methodology

Outline the approach and methodology behind the project. Explain why they are the most suitable for achieving the project's objectives.

The AquaLoops4Med project brings scalable investments in the sustainable use of water and resources for the agrifood sector into interregional value chains with the support of the regional governments, research centers, universities, clusters and SMEs. The proposed methodology is inspired in the Shared Agendas methodology implemented in Catalonia's Smart Specialisation Strategy³ (RIS3CAT) and also the experience of Attica, the two more advanced regions involved in this project.

For research and innovation to be transformative, it is necessary to ensure, firstly, that they are focused on challenges that are relevant for the territory (from an economic, environmental and social point of view), in our case, water management in a climate change context in southern European regions and how to support water-intensive sectors such as agrifood transition to a more resilient and sustainable use of water. Secondly, that the innovations or solutions that are developed are actually adopted and implemented (by companies, governments or other entities), that's the reason because we involved SMEs and Research centers in the development of solutions but also stakeholders from public administration from the beginning to identify challenges and obstacles to face in real implementation and scale-up. Accordingly, it is vital that policies and instruments to support responsible and transformative research and innovation enable universities, research and technology centres, centres of education, companies, governments, investors, financial institutions, third sector entities and citizens to join forces and align resources in order to address shared challenges throughout the innovation cycle (from research to introduction to the market) through shared agendas. Through models of participatory governance, shared agendas articulate the collective action of various stakeholders aimed at addressing shared challenges (often related to the Sustainable Development Goals, hereafter, SDGs) and the problems and opportunities derived from them. Although the specific configuration of these shared agendas depends on the challenge (which may be sectoral, scientific, technological, environmental or social), the territory, the stakeholders involved and the transformative goal, we can highlight the following general characteristics:

- Their starting point is the identification of strategic challenges and shared diagnoses, and they are based on cross-sectoral cooperation and knowledge generation between different actors aimed at understanding and managing complex problems from a holistic and dynamic perspective, taking into

³ <https://fonseuropeus.gencat.cat/web/.content/ris3cat/documents/angles/ris3cat-2030-en>

account long-term effects and direct and indirect impacts. For AquaLoops4Med, four regions share a common challenge linked to their Smart Specialization Strategies.

- Their action is focused on change, transformation and collective impact, sustained in time, and they are adaptive strategies that respond actively to unexpected effects and developments, successes and failures. The design and implementation of two demonstrators in the less developed regions of the consortium allows the feasibility, viability and interest for the participants, and the regional involvement of all the stakeholders. Also, the projects funded through the FSTP scheme could demonstrate the interest and application of cutting-edge technologies to face the common challenge.
- They promote the design and experimentation with possible solutions and alternatives to address challenges, and involve, from the very start, groups affected by the problems they address, although they go further, with the aim of replicating successful solutions or implementing them on a larger scale and linking them to more global strategies and agendas, such as the EU's research and innovation missions.

Our methodology based in shared agendas applies a data-driven, demand-centered, and evidence-based approach during this process:

- 1) **Needs-based and bottom-up approach in building interregional investment cases and SME support:** Building interregional investment cases are at the core of the project. The two pilots of the project reinforce the participation of partners from four regions. The approach to do so is on a demand driven, needs basis. A demand driven, needs-based and bottom-up approach is essential (and effectively the only way) for helping SMEs to move to the market. At the same time, we involve end-users (agrifood sector) not only for demonstration activities, but throughout the whole project, as user/demand-centered: the market and the end user for which the product is being developed must be closely involved in the innovation cycle. The demonstration activities follow a living lab approach and play an important role in this: innovate, validate, and realise impact with, for and by the end user.
- 2) **Applying the Innovation cycle approach,** in which innovation and value creation are a combined process. The innovation cycle starts with scanning the environmental challenge (market need). Innovations are created to meet this market need (innovate) using clean or smart Technology. When the product is ready, it has to hit the market as quickly as possible (accelerate) and at the biggest scale as soon as possible (scale up) to have a real impact. The innovation cycle is cyclical, because the experiences gained through the innovation cycle are included in the next innovation cycle. This makes the innovation process a learning system. The emphasis is on the later steps of the innovation cycle (validate, accelerate and impact). We work from the idea that an innovation must demonstrably work. It is not only important to see a need, come up with an innovation or put it on the market. Its impact is greater and more promising if it is demonstrated how the product really works in practice. The cycle is implemented along a **Quadruple Helix approach**, an innovation and collaboration model with a citizen / end-user perspective. The cycle is used in this project because the project wants to achieve an impact in society through innovations that are accepted and used by end users (shift from agrifood sector) and therefore citizens' needs are central and added to the more traditional triple helix approach.

SMEs & RTOs leading the Technology approach

Our methodology ensures the successful generation, testing, scaling, and uptake of a portfolio of demand- driven cleantech and digital solutions in the field of agrifood through their integration into interregional value chains. We have pre-selected innovative technologies and solutions from 6 SMEs as a flagship innovation investment and the FSTP scheme will allow further support to 40-60 cases selected during the project.

Investment cases entering the project will already have at least a minimum viable prototype (TRL6), an operational prototype (TRL7) or will be just one step before full market deployment (TRL8). These will be brought to fully marketable products/services/processes (TRL9). This will be achieved by the creation of new interregional value chains by finding and connecting all actors necessary to engaged in the innovation process by for the innovation upscale and commercialization and by supporting and developing all actors in the value chain.

The **6 flagship SMEs I3 cases** have been selected by participating regions during the application phase based on their innovation level, impact in terms of sustainable use of resources, the quality of investment plans and needs for interregional cooperation and support.

The SMEs representing these flagship I3 cases have joined the project partnership to take the next step

in their development during the project (see *short narrative of Flagship I3 cases in section 2.2, WP2 and Annex*). This will be a tailor-made process for each Flagship SME, aligned with their individual needs, that will benefit from cooperation with the other consortium partners. They will work together with selected Co-Developers (Universities, Research Centers) providing specialised technology and skills and competences and together forming value chains. During project implementation, the above process will be scaled-up: a **second stream of I3 cases** will be selected via **additional open calls**, based on regional needs (formulated as regional challenge: water scarcity and climate change adaptation) consolidated at project level, representing key application fields in any of the four regions involved in the project and targeting different kinds of end-users from the same sector (agrifood).

Marketable solutions represented by Flagship and Second Stream I3 cases are then supported by the quadruple helix partners from the members of consortium network (innovation, validation & valorisation support) to grow from TRL 6 to TRL8 or 9 and get introduced in the different regional markets. As such, the interregional solutions will become available for a larger community (social impact), while the supported SMEs are able to work more efficiently (economic impact).

SELECTION OF SMEs FOR CASCADE FUNDING

Through two bottom-up OPEN CALLS, around 40 to 60 new SMEs will be engaged, benefitting from cascade funding 1) to help address the shared challenge of water management in the agrifood sector across the Mediterranean 2) to build new regional and interregional value chains through a Second Stream of I3 cases. The kind of services that will be provided to help to accelerate the TRL of each one of these SMEs will be granted through cascade funding and additional innovation, business support services. The **Call process** will fully **comply with I3 call requirements**, i.e. (recipients are SMEs established in partner S3 regions; calls will be open, published widely and conform to EU standards concerning transparency, equal treatment, conflict of interest and confidentiality; calls remain open for at least 2 months; the outcome of the calls will be published on participants' websites, incl. description of selected projects, award dates, project durations, and final recipient legal names & countries. SMEs responding to the Open Calls will **submit their application** using a jointly developed template including a max 10-page presentation of their cases.

Following the submission of their proposals, applicants go through the evaluation process organized around **selection criteria** including: Relevance to S3; Meeting EU SME definition; Potential to build interregional value chains/partnership; Financial position of company; Background check of entrepreneurs involved (including: legal existence, business registration, compliance with national regulation and taxes); Government support from other (national) sources; and for SMEs applying for Second Stream I3 cases: Evidence of user-centred design with a minimum TRL level 6; (EU) Market potential of business case/plan.

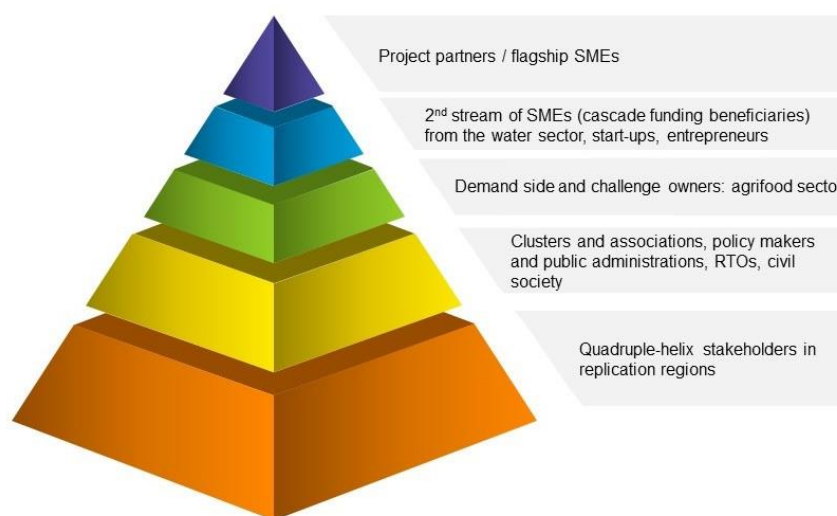
The **evaluation** of applications from co-developer SMEs will be a joint exercise between universities, research centers, clusters or entities that could be neutral in the selection of the best applications following joint guidelines. As part of the evaluation, pre-selected projects carry out an ethics self-assessment following a simple template and, in those cases, where ethics related issues might arise, independent Ethics experts will be invited to formulate recommendations. SMEs selected in the calls will be granted a mix of cascade funding and additional innovation, business support and services provided by the partners for each region. Individual SMEs can be awarded a package of € 10,000 to 30,000€ in the form of cash support, Innovation support vouchers, Business support vouchers and Matchmaking support (travel) vouchers. Regarding the cash support, the following activities will be eligible, among others:

- Support for investment to develop or implement interregional business and “go to market” plans in the agrifood value chain.
- Development of portfolios of projects for the close-to-market investments that deploy new or improved technologies or processes.
- Activities aiming to produce plans, arrangements or designs for new, altered or improved products, processes or services (in order to adapt them to agrifood companies' needs, such as testing, demonstration, piloting, validation and market replication).
- Activities bringing innovative ideas and new products to the agrifood market.

A SUSTAINABLE ECOSYSTEM OF INNOVATION IN 4 REGIONS

Cooperation mechanisms and synergies within the project mature along the project implementation. We believe in the involvement of all the quadruple helix in all the WP of the project, and not in the classical Technology push approach (development of Technology, dissemination and introduction of the innovation in the market in dissemination events). One of the main objectives of the project is to achieve a more consistent innovation ecosystem in solutions for water management in the agrifood sector in the

four regions, learning not only about the results of the Flagship SMEs technologies and projects of the cascade funding, but also from the policy makers, government priorities and implementation of activities related to reinforce this ecosystem and clusters.



METHODOLOGY OF IMPLEMENTATION

AquaLoops4Med is structured in 5 interconnected work packages.

Project management and coordination activities (WP1, M1-M36) will provide the framework for a correct and timely implementation, a follow up of all activities, deliverable and milestones and cooperation among partners.

WP2 (M1-M36) foresees the implementation of previously identified investment projects in cooperative demonstration projects that will bring together partner SMEs with support from RTOs. Partners from all regions will converge in 2 demonstration sites located in Thessaly (Greece) and Basilicata (Italy) where different solutions for wastewater reclamation and reuse will be tested in livestock farms for dairy production and where the reclaimed water will be reused for irrigation purposes in the nearby plots.

In WP3 (M1-M36), a second stream of Interregional Innovation Investments will be implemented through the FSTP scheme that will allow supporting 40 to 60 SMEs from the four participating regions by providing a set of services to foster their competitiveness, thus supporting the creation of new value chains across the Mediterranean.

WP4 will encompass social innovation, the analysis of policies related with innovation (both as a whole and specifically related with the water sector) across the participating regions, and the creation of a platform to attract further investments.

In WP5, dissemination, replication and exploitation activities will ensure regional and European visibility. All activities will follow a joint strategy to maximise the project impact. Finally, replication will be sought both in other regions of the participating countries as well as in other countries around the Mediterranean, with a focus on less developed regions.

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2.2 Consortium set-up

Consortium cooperation and division of roles (if applicable)

Describe the participants (Beneficiaries, Affiliated Entities and Associated Partners, if any) and explain how they will work together to implement the project. How will they bring together the necessary expertise? How will they complement each other?

In what way does each of the participants contribute to the project? Show that each has a valid role and adequate resources to fulfil that role.

Note: When building your consortium you should think of organisations that can help you reach objectives and solve problems.

PARTNERS DESCRIPTIONS

SMEs

Aeris Tecnologías Ambientales S.L. (www.aeris.es) is a spin-off of the Autonomous University of Barcelona comprising experts from the GENOCOV research group. Founded in 2009, AERIS' main aim is to help industries and public entities to improve the environmental quality of their emissions by designing and implementing state-of-the-art, environmental-friendly technologies. Amongst the main fields of interest of AERIS, air deodorization, advanced water treatment and energy production and seizing from organic residues are some of the most relevant ones. As of 2023, AERIS has sold industrial plants all around Europe, in Africa and in Latin-America. AERIS has a large experience designing and building highly automated pilot plants for research purposes. Also, AERIS works in the optimization of biological and/or physico-chemical depuration of natural and industrial liquid streams containing nutrients, COD and/or recalcitrant compounds. In this field, numerous R+D and technological implementation projects have been carried out in the last years. Currently, AERIS comprises 8 researchers from different fields of science, resulting in a widely multidisciplinary team. Numerous technological implementation projects have been carried out in the last years, namely in WWTP and paper, chemical, tannery and food industries. AERIS has experience in participating in privately and publicly funded projects.

AGENSO, established in 2016, is an innovative SME company based in Athens, Greece. Having as its ultimate mission to provide cutting-edge ICT solutions and services for water management, smart agriculture, environment, and smart cities, AGENSO develops hardware and software IoT tools, as well as decision support systems. Their integration in pioneering rural and industrial systems allows mitigating climate change, tackling barriers in the water management chains, the food production chain, addressing waste prevention and energy efficiency, under an integrated framework embracing fundamental core values of sustainability and circular economy, with particular emphasis in social responsibility. AGENSO's corporate and partnership network consists of more than 400 private and public entities worldwide, which include industries, municipalities, farmers, farmers' cooperatives, along with educational and research institutions. AGENSO has participated in 20 EU funded projects, and 10 National projects. In 2020, AGENSO was included in the 5 most promising startups among 1,116,000+ startups and emerging companies worldwide in the independent StartUs Insights Platform for this innovative Ardeusi.gr system.

Bioinnova srls is an Italian research and development company. It was born in 2014 from the desire to create a reality in the Lucanian area capable of providing not only quality services but also job opportunities for young people. Bioinnova develops innovative biotechnological products capable of combining human well-being with respect for the environment and nature, a central element of every project carried out. Therefore, considering the main corporate core, expert biologists, biotechnologists, agriculturalists and geneticists have concentrated their energies on the cultivation, and selection of specific microalgal genotypes capable of fulfilling the proposed objectives. A decade of experience in this field has led to the development of several patents, numerous scientific publications, and collaborations with important Italian and foreign universities. During the last five years, Bioinnova has been a partner in several interregional projects involved in the recovery of agri-food waste and its treatment through specially engineered unicellular microalgae. Furthermore, Bioinnova has funded Ph.D scholarships to guarantee constant and profitable preparation and training of its employees.

FRESH MILK is a dairy & milk production company. Established in the dairy production sector since 2019. The company has facilities in which around 100 cattle are currently raised, but with the capacity to host and raise a total of 300 animals for milk production. The production activity extends over an area of approximately 2 hectares just 10 Km from the center of Trikala city, in central Greece, in the Thessaly region. The installed infrastructure consists of a total of 5 building facilities. These are 2 milking parlours, stables and warehouses and an animal feed storage silo. In addition, there are areas for corralling the livestock, breeding areas for newborns as well as storage tanks for the produced milk. Finally, there are solid waste and wastewater collection and management facilities. FRESH MILK is a supplier to one of the largest dairy processing, production and standardization companies in Greece.

HYDRASPIS. Investigation through design studies, consultancy–advisory work and research. Particular emphasis is given to the integrated approach and addressing problems related to the aquatic

environment. The extensive experience, the specialized knowledge and the interdisciplinary character of the members and collaborators of Hydraspis provide leading edge investigation, analysis, study and planning, ensure a high level of consulting services and promote smart solutions through the multilateral creativity and confrontation of the emerging challenges. Some of the key points that add value and offering the opportunity to be informed about the development in the fields of activity and to apply modern and often innovative methods, processes and approaches are: expertise on water, commitment on research & innovation adaptability & flexibility through tailored solutions to the complex water-related challenges, efficiency, effectiveness and sustainability, among others. HYDRASPIS has collaborations with numerous Greek Universities and organizations in the Public and Private sector.

WE&B is a specialised environmental consulting company. By way of a cross-disciplinary focus, WE&B integrates social and business innovation systems to solve complex environmental problems. WE&B's unique contribution lies in its ability to engage all relevant stakeholders from communities (bottom-up approach) to policy makers in jointly addressing the complexity of environmental issues and offering specific and professional solutions. WE&B possesses the skill and expertise to adapt and enhance these innovations to bring them to full practical implementation. WE&B's insights are developed within the focus areas of: Water Management; Climate Change; Green Growth; Circular Economy. WE&B has brought environmental vision and insights to social and business innovation through research projects in different sectors such as agriculture, housing and construction, industry, and in different geographical settings, covering cities, rural areas, and coastal environments. WE&B's services have provided the evidence to understand business systems and social structures that have improved the capacity development between organisations. WE&B's working method involves the continuous search for new knowledge to advance research in social and business analysis.

Non-profit associations, RTOs and public entities

The **Catalan Water Partnership (CWP)** is the cluster of the sustainable use of water. Founded in 2008, it is a strategic non-profit association whose mission is to improve the global competitiveness of its members and, in short, to continuously improve the efficiency and sustainability of water use throughout its value chain, from its catchment to its use and subsequent return to the environment. CWP's strategic pillars encompass the promotion of collaborative research and development activities, the transition to circular economy, digital transformation, cross-sectoral cooperation, networking, business development and internationalisation. Also, CWP promotes multi-level projects and collaborations, aimed at achieving innovative solutions for global water quality needs anywhere in the world and applicable in multiple sectors. Therefore, the CWP works with an innovative approach and international vision, seeking to establish strategic alliances.

CWP has a multidisciplinary and highly qualified team, with expertise in different fields of water science and technology, of 10 staff members, 4 of them holding a PhD. Since its foundation, CWP has led or taken part in over 120 collaborative projects at European, national and Catalan level, in all the main themes of the water sector: water reuse, digital transformation, circular economy, desalination, groundwater management, wastewater treatment, water quality, blue economy, cooperation with water-intensive sectors, etc. The most outstanding are the participation in 12 EU funding projects or the coordination of 20 annual Spanish/Regional projects related to the sustainable use of water, circular economy and digitalisation in the water sector in recent years.

CWP has currently 137 members from the water sector, including universities and RTOs, technology manufacturers, laboratories, consultants, engineering companies, water utilities and the regional water managing authority. CWP has been part of the Catalonia Clusters programme since its creation. It is also one of only two water clusters in Spain and is part of the European Cluster Collaboration Platform programme, which brings together 1,500 European clusters and is one of the 75 clusters recognised as a Gold Label Excellence programme within the EU.

The **Regional Agency for the Protection of the Environment (Agenzia Regionale per la Protezione Ambientale - ARPA) of Basilicata** is a public body that engages in control, support, technical-scientific consultancy and other activities in the service of the governing bodies of the Basilicata region. The Agency supplies products and services within the framework of different areas of competence. These areas are: i) Prediction and prevention of risks of anthropic origin (monitoring the quality of the air; surface and ground waters; environmental radioactivity; conditions of the soil) ii) Prediction and

prevention of risks of natural origin (with an hydrometeorological monitoring system that uses automatic tools to determine soil and atmospheric conditions), iii) Measuring activities for purposes of conformity checks (environmental conditions are monitored through surveys, inspections, sampling and documental analyses) iv) Health care related activities (with analysis and identification of risks) and v) Information on the environment (to improve the knowledge of the state of the environment and provide the administrations with the technical elements they need to define and implement their environmental policies).

The **Catalan Institute for Water Research (ICRA-CERCA)** is a research institute inaugurated in 2009 by the Government of Catalonia within the framework of the Research Centres Programme of Catalonia (CERCA), with the HR Excellence in Research Award from the European Commission. Since its inauguration in 2009, ICRA seeks to provide a complete and efficient response to the problems and challenges related to integral water cycle and is, therefore, structured as a multidisciplinary water research centre around 3 main research areas: i) Resources and Ecosystems, ii) Water Quality, and iii) Technologies and Evaluation. In view of the importance of water as a fundamental commodity for life and the issues that surround it, ICRA aims to become a pole of knowledge with international prestige in water science and technology. Only in the last 5 years (2017-2022) ICRA-CERCA presented more than 150 European proposals, 35 of which were successful in different calls. In AquaLoops4Med ICRA-CERCA will bring its expertise on efficiency and cost evaluation of wastewater treatment technologies (including membrane-based and nature-based solutions) as well as human health risk assessment (regarding heavy metals and contaminants of emerging concern in crops irrigated with reclaimed wastewater).

IRTA is an agrifood research institute owned by the Government of Catalonia adscribed to the Ministry of Climate Action, Food and Rural Agenda. It is an integral component of Catalonia's CERCA research centre system. IRTA's mission is to contribute to modernizing, improving, boosting competitiveness, and fostering sustainable development in the sectors of agriculture, food, agroforestry, aquaculture, fishing, as well as in all areas or activities directly or indirectly related to the supply of healthy, high-quality foodstuffs to end consumers, while also contributing to food safety and safe processing of foodstuffs and in general enhancing the health and well-being of the population. IRTA possesses an extensive infrastructure, including 10 owned R&D centres, 2 partner centres, and 6 experimental sites and farms. IRTA manages 408 hectares of fields and provides 15,200 m² of facilities for livestock research, along with 3,800 m² dedicated to fish and molluscs research. The organization employs a workforce of 908 individuals, with 183 researchers, comprising 55% women and 45% men. In terms of income, IRTA generated €57.85 million in 2022, with 33% sourced from the Catalan Government, 36% from R&D projects, and 27% from contracts with companies. The institute was engaged in 314 active competitive projects in 2022, with 58 funded EU projects. In this proposal, 2 research programs of IRTA to carry out the activities are involved: efficient use of water in agriculture program and sustainable field crops program.

The **Municipality of Lake Plastiras** is a local government entity responsible for the management and regulation of all local affairs, in accordance with the principles of subsidiarity and proximity, with the aim of protecting, developing and continuously improving the quality of life of the local community. In this context, the Municipality of Lake Plastiras is establishing collaborations with other entities and participating in consortiums, in order to enhance the expected outcomes, described in its strategy. More specific the present consortium creates synergies with the SPECIAL INCORPORATED DEVELOPMENT PROGRAMME FOR THE AGRAFA REGION funded by National Funding tools, in which Municipality of Lake Plastiras is participating as a beneficiary with a budget of 30 Mil. EUR.

National Technical University of Athens (NTUA) is the top Technical University in Greece. Research is carried out in about 100 laboratories belonging to the various departments and sections of the institution. The valuable work of NTUA and its international reputation are due to its well-organised educational and research system, the quality of its staff and students, and the adequacy of its technical infrastructure. NTUA will participate with the Sanitary Engineering Laboratory (SEL), which is the part of the School of Civil Engineering. This school is the oldest engineering school in the country and alma mater to all other engineering Schools and has played a protagonist role in the scientific, technical and economic development of the country during its many years of operation. Sanitary Engineering Laboratory is a leading center for education, research and technology in the area of Water and Wastewater Management. The Laboratory is included in the list of NTUA laboratories providing advisory

and consultancy services and has developed collaborations with the Greek Ministry of Environment, the Water Supply and Sewage Company of Athens (EYDAP) and other Local Water and Sewerage Authorities and private companies in Greece and many universities, research centers and SME in Europe.

Università degli studi della Basilicata (UNIBAS), <http://portale.unibas.it/site/home.html>) is a Public University born 1980 and includes scientific and teaching experiences of professors, researchers and scholars. Nowadays, there are six Academic Divisions (four Departments and two schools) within the University of Basilicata, in charge of developing, organising and offering academic, research and training programmes and activities. Among them, the School of Agricultural, Forestry, Food and Environmental Sciences (SAFE). UNIBAS promotes and participates in systematic initiatives to connect the research with productive world, external institutional, professional and entrepreneurial subjects. UNIBAS promotes the establishment of companies derived from research in conjunction with University's initiatives, business incubators, science and technology parks, external institutional subjects, as well as the creation of patents, through the support of appropriate University structures. Besides, Unibas promotes and supports initiatives for transferring knowledge to productive units, training, disseminating scientific and technological culture, and is equipped with many research laboratories, with advanced instrumentation and facilities, useful to support innovative research activities, as well as technology transfer processes.

Partners' roles and contributions

NAME	REGION	TYPE	MAIN ROLE
CWP	Catalonia	Cluster	Project coordination
IRTA	Catalonia	RTO	evaluation of open call applications / q-helix partnership / innovation / knowledge exchange
ICRA	Catalonia	RTO	DEMONSTRATION ACTIVITIES (risk assessment)/q-helix partnership/ evaluation of open call applications
AERIS	Catalonia	SME	DEMONSTRATION ACTIVITIES (WP2 leader/ AnMBR+SSF+pN/DN demonstrator)
WE&B	Catalonia	SME	WP 4 leader/ q-helix partnership / business innovation
UNIBAS	Basilicata	RTO	DEMONSTRATION ACTIVITIES (reuse in agriculture/maintenance and operation)/WP5 leader
BIOINNOVA	Basilicata	SME	DEMONSTRATION ACTIVITIES (microalgae-based water treatment)
ARPAB	Basilicata	Public Authority	DEMONSTRATION ACTIVITIES (environmental analyses)
NTUA	Attica	RTO	DEMONSTRATION ACTIVITIES (Thessaly demo implementation)/WP3 leader/ q-helix partnership / knowledge exchange
AGENSO	Attica	SME	DEMONSTRATION ACTIVITIES (technology for reclaimed water application in agriculture)
HYDRASPIS	Thessaly	SME	DEMONSTRATION ACTIVITIES (rainwater harvesting system)
MUNICIPALITY LAKE PLASTIRA	Thessaly	Public Authority	q-helix partnership / innovation / knowledge exchange/FSTP
FRESHMILK	Thessaly	SME	DEMONSTRATION SITE (end-user)/q-helix

2.3 Project teams, staff and experts

Project teams and staff

Describe the project teams and how they will work together to implement the project.

List the staff included in the project budget (budget category A) by function/profile (e.g. project manager, senior

<i>expert/advisor/researcher, junior expert/advisor/researcher, trainers/teachers, technical personnel, administrative personnel etc. — use the same profiles as in the detailed budget table, if any and describe briefly their tasks. Provide CVs of all key actors (if required).</i>		
Name and function	Organisation	Role/tasks/professional profile and expertise
Óscar J. Prado Rubianes (CEO, Senior Researcher)	AERIS	CEO of AERIS and Assistant Professor of the Autonomous University of Barcelona. He holds a degree in Marine Sciences and a PhD in Environmental Science and Technology, awarded with PhD Extraordinary Quality Prize. His areas of expertise include the design and operation of pilot- and industrial-scale biological reactors for residues valorisation and pollutants degradation.
Josep A. Torà Suárez (Senior researcher)	AERIS	Chemical Engineer. He holds a PhD in Environmental Sciences. He has over 15 years of experience in the field of design and operation of biological and physico-chemical reactors.
Albert Bartrolí Almera (Senior researcher)	AERIS	Chemical Engineer. He holds a PhD in Environmental Sciences. He has over 20 years of experience in the field of design and maintenance of biological systems for residues processing and valorization, both at laboratory and pilot scales, with numerous publications related to these lines of work.
Raquel Montes Martínez (Senior researcher)	AERIS	Chemical Engineer. She holds a PhD in Chemistry. She has over 12 years' experience in the development of automated analytical systems for real-time environmental and industry monitoring. She has a wide experience in management and development of both national and European projects.
Katarzyna Budkiewicz Bartrolí (Senior Researcher)	AERIS	Civil Engineer. She has 15 years' experience in design of biological reactors for residues processing and valorization at pilot- and industrial-scale.
Javier Palomares Cortés (Researcher)	AERIS	Graduate in Biotechnology. His lines of research are focused on the optimization of biotechnological reactors. In recent years, he has specialised in the control and operation of pilot and industrial biotechnological plants for biomass processing and biogas desulphurization.
Zisis Tsiropoulos (Manager)	AGENSO	Holds Ph.D. in computers and electronics in agriculture and M.Sc. in Agriculture and Environment. He has 15 years of experience in teaching and research in ICT and electronics for agriculture and he is developing applications in many programming languages and platforms. He has developed more than 20 applications (GIS applications, FMISs, web applications) for the agricultural sector.
Evangelos Skoubris (Senior Expert/Researcher)	AGENSO	Diploma degree in Mining Engineering (NTUA), M.Sc. in Geotechnology and the Environment (TUC), M.Sc. in Environmental and Health Engineering (TUC), B.Sc. in Electronics Engineering (TEIATH). Ph.D. candidate in Embedded Electronics, Internet of Things, and low-cost Smart Systems and their applications in Early Warning Systems for Natural Disasters (UNIWA).
Michael Voskakis (Senior Expert/Researcher)	AGENSO	Software developer. Alumnus of the Department of Economics, NKUA and holder of the postgraduate degree "informatics" by the University of Piraeus. Expert in mobile GIS, precision agriculture systems, and ICT.
Aliki Tsiropoulou (Manager)	AGENSO	Bachelor in Agricultural Engineering and M.Sc. in the field of Agriculture and Environment. She has 4 years of experience in teaching at the domain of agri-food security and environmental protection. She has participated in more than 10 national or European funded programs, she has worked in various competent bodies for the needs of the Integrated Administration and Control System (IACS).

Michail Kaminiaris (Project Manager)	AGENSO	Ph.D. and integrated M.Sc. in Crop Sciences, from the Agricultural University of Athens (AUA). Specialized in Plant Pathology, Food Safety, Integrated Management and prediction modelling for pests, diseases, and mycotoxins.
Aikaterini – Maria Michailidou (Senior Expert/Researcher)	AGENSO	She holds an M.Sc. degree in Leadership for Sustainable Development from Queen's University of Belfast and a second M.Sc. degree in Pharmacognosy of Natural Products from NKUA. She is a graduate of Agricultural University of Athens, and her experience and scientific interests concern qualitative and quantitative methods of research in the field of sustainability, natural resources management and the circular economy.
Aikaterini LAZOU, Co- Owner of Fresh Milk	Fresh Milk O.E.	Aikaterini is Co – Owner of the Cattle Farm “FRESH MILK”. She is actively involved in the dairy production and trading processes. She also serves the organization in economic policy and development affairs.
Alexandros ZAFEIROPOULOS, Co-Owner of Fresh Milk	Fresh Milk O.E.	Alexandros is Co – Owner of the Cattle Farm “FRESH MILK”. He is physiotherapist. Having knowledge in the field of health, he is responsible for the sanitary issues, the organization of the animal feed supply, the well-being control of the company's livestock and the assurance of the quality of milk production.
Ioannis VASILAKOS	Hydraspi s	Ioannis is a civil engineer from NTUA since 2006. Since 2008 holds the MSc on “Water Resources Science and Technology, NTUA”. He is a Hydraulic Engineer - Hygienist with 16 years of experience and he is a Researcher and Consulting Engineer in water Quality, Water Management and Environmental Technology.
Antonios ELEFTHERIOU	Hydraspi s	Antonios is a graduate Environmentalist Oceanographer with a Master of Water Science and Technology from NTUA in 2008 and is a PhD candidate in Coastal Engineering at the University of the Aegean. He provides advisory and consulting services for more than 15 years in water resources management, coastal environment, marine ecosystems and anti-pollution.
Gianluigi Buttiglieri (research scientist)	ICRA	He holds a PhD in Sanitary and Environmental Engineering (2008). He is a consolidated research scientist (>60 publications, h-index: 26, > 2,200 citations). He will provide his expertise in wastewater treatment and reuse (nature-based solutions and membrane-based technologies), including emerging contaminants and the evaluation of human health risk assessment.
Joaquim Comas (research professor)	ICRA	He is leading the Modelling and decision support system research line at the Evaluation and Technologies Area of ICRA and co-leading the IT Ia. He is also Full Professor of the Chemical Engineering Dept. of the University of Girona. He has published > 125 peer-reviewed papers in SCI journals (h-index 37, >4,500 citations) and has participated (as PI and/or partner) in >100 research, knowledge transfer and cooperation projects with public and private funding both nationally and internationally. He will provide his expertise in modelling, decision support system, circular economy, nature-based solutions and membrane-based technologies.
Sara Rodriguez-Mozaz (research scientist)	ICRA	She is a consolidated research scientist of the Water Quality Area (> 180 publications, h-index: 69, > 14,000 citations). Expert in analytical methods for the study of the origin, fate. and ecological impact of ECs in the environment to better know the sources, and processes that control their fate and the potential effects in the ecosystems and human health. She will provide her consolidated experience in emerging contaminants in terms of analytical methods, presence in the environmental, wastewater treatment technology, risk assessment.
Jaume Casadesús (Senior	IRTA	Plant Physiologist and Computer Engineer, specialized on ICT solutions for scientific-technical applications in agriculture and the environment. Head of the program of Efficient Use of Water in Agriculture. According to

Researcher)		the Web of Science, he has published 44 peer-reviewed articles, with a total of 1410 citations and an h index of 20.
Francesc Camps (Senior Expert/Researcher)	IRTA	Researcher at the Program of Sustainable Extensive Crops, based at the Mas Badia Agricultural Experimental Station. With 32 years of experience on applied research and dissemination, he has focused his activity in the last decade on the evaluation of water needs in different herbaceous and woody crops, agricultural irrigation management and regional water governance.
Víctor Blanco (post-doctoral researcher)	IRTA	Specialized on ecophysiology, water relations, abiotic stress, photosynthesis, and precision horticulture. Joined IRTA in 2023. Experience in some of the major tree fruit production regions in the world, the Mediterranean Basin, the Central Valley of Chile, and the Columbia Valley in Washington State. His research includes field and greenhouse experiments, soil-tree-atmosphere models, remote sensing, and laboratory techniques to study how crops respond to different environmental conditions.
Dimitris BANOUSIS, External Expert	Municipality of Lake Plastiras	Environmental policy expert specialized in spatial planning, with a MSc Degree in Spatial Planning & Regional Development and a M.A. in International, European and Area Studies. He is currently holding the position of the Environment Officer (covering the LIFE subprogrammes of Circular economy and quality of life and Nature and Biodiversity) of Greece's new LIFE Capacity Building project.
Vasilis BRANTZOS, Personnel - General Secretary	Municipality of Lake Plastiras	Local government expert with a BSc Degree in business administration, having more than 15 years of professional experience. He is currently holding the position of the General Secretary of the Municipality of Lake Plastiras.. Since 2019 he has been a member of the Panhellenic Union of General Secretaries of Local Government. He was a consultant in both private and local government entities.
Prof Simos Malamis (associate professor)	NTUA	Expert on advanced wastewater treatment processes and resource valorisation. He has more than 80 published papers in scientific journals. 20-year experience in the coordination and development of multi-million R&I projects.
Prof Daniel Mamais (full professor)	NTUA	Director of the Sanitary Engineering Laboratory of NTUA. Teaching courses on Environmental Engineering topics at the NTUA. He has been engaged in 75 research projects dealing mainly with water. he has co-ordinated 21 projects with a total budget approximately 3.5 million euro
Prof Constantinos Noutsopoulos (full professor)	NTUA	His area of expertise is wastewater and sludge treatment and reuse, circular economy and resources recovery and water resources management. He has been engaged in more than 70 National and EC funded research projects.
Dr Theocharis Nazos (senior researcher)	NTUA	Senior Researcher at the Sanitary Engineering Laboratory of NTUA. He holds a PhD in Biochemistry. His area of expertise is in the field of microalgae cultivation.
Alexandra Tsatsou (junior researcher)	NTUA	PhD candidate focusing on Climate Change Adaptation and Resilience. She is a core member of Horizon Europe CARDIMED project.
Pinelopi Papadopolou (junior researcher)	NTUA	M.SC. in Agricultural Engineering and PhD candidate at Sanitary Engineering Laboratory of NTUA. She has experience setting up and managing plant nursery and performing soil analysis.
Eva Themeli (junior researcher)	NTUA	PhD candidate focusing on advanced wastewater treatment solutions, including nature-based solutions.
Laura Scrano (Ass. Professor)	UNIBAS	Expertise: Soil chemistry; Water quality assessment; Environmental photochemistry; Clay minerals. Plant secondary metabolites (Scopus total citations: 988/87 publications, h-index: 18). Five PhD students

		supervised and three ongoing.
Donatella Battaglia (Ass. Professor)	UNIBAS	Expertise: Entomology; Interactions between aboveground and belowground organisms; Biological Control (total citations: 433, h-index: 9). 5 PhD supervised and 1 ongoing.
Achille Palma	ARPAB	Experience was acquired in studies of the behaviour of phytopharmaceuticals (deltamethrin) by working for almost a year in Canada at Prof. Khan's laboratories. He participated as co-designer in all the projects listed below. In many of them, he assumed technical and scientific responsibility.
Dr. Xavier Amores	CWP	Cluster Manager of CWP for more than 12 years. Industrial engineer, PhD on innovation management in technology-intensive service companies. He has participated in more than 50 innovation and competitive improvement projects in H2020, LIFE+, INTERREG, COSME GO INTERNATIONAL, among others.
Dr. Lucia Gusmaroli	CWP	Dra. Gusmaroli has been with CWP since 2020 and currently holds the position of European Projects Area Manager. She has a degree in Chemistry a Master in Analytical Chemistry and a PhD in Water Science and Technology.
Dr. Sergi Compte Port	CWP	Dr. Sergi Compte Port R&D Project manager at CWP since September 2018 and he holds de R&D Area manager. Degree in Biology, Master in Advanced Biotechnology, PhD in Environmental Microbiology.
Dra. Joana Mencos Bellpuig	CWP	Dra. Mencos holds a degree in Geology (UB) and a PhD in Geology (UB). Joana has a great experience in coordinating and managing European (H2020, HE, Erasmus+ and Life+) and national projects in the renewable energy, climate change and sustainability sector.
Anna Rovira Talaveron	CWP	Rovira holds a degree in Business Administration and Management and a Master's degree in Entrepreneurship and Innovation. She works as a financial project manager at CWP.
Anna Fernández Torró	CWP	Fernández has a degree in Advertising and Public Relations from the University of Girona. She has experience in different areas of the world of communication and she has a master's degree in corporate communication.
Dr. David Smith	We&B	PhD in environmental science and technology. Director and founder of WE&B and he has led more than 25 projects on environmental studies across the globe for clients.
Beatriz Medina	We&B	Master's in science, environment and health communication. Research support at the Sociology Department in the context of Honest project.
Karine CAUSSE	We&B	Master's degree in social sciences, with a specialization in social anthropology. Currently she is working as socio-environmental systems consultant.
Rosa Paola Radice	BIOINNO VA	PhD in Applied Biology and Enviornmental Protection in Università degli studi della Basilicata. Biotecnologa in Bioinnova srls.

Outside resources (subcontracting, seconded staff, etc)

If you do not have all skills/resources in-house, describe how you intend to get them (contributions of members, partner organisations, subcontracting, etc).

If there is subcontracting, please also complete the table in section 4.

Insert text

2.4 Consortium management and decision-making

Consortium management and decision-making (if applicable)

Explain the management structures and decision-making mechanisms within the consortium. Describe how decisions will be taken and how regular and effective communication will be ensured. Describe methods to ensure planning and control.

Note: The concept (including organisational structure and decision-making mechanisms) must be adapted to the complexity and scale of the project.

The AquaLoops4Med consortium management and decision-making will follow a well-established structure, responsible for the overall project implementation. The main actions to carry out will be focused on:

- Coordinate and organise the work in the project.
- Establish and ensure an effective internal and external communication flow.
- Monitor the project's progress and ensure the quality of the results.
- Resolve any conflicts that might appear within the project.
- Ensure that the project is developed in accordance with the EU and national rules.

Regarding its makeup, the candidates have devised a straightforward organizational framework for the project. This setup aims to facilitate swift decision-making and seamless project management while incorporating essential control and participation mechanisms. Consequently, this structure will comprise a Project Management Committee, a Technical Committee, and a Project Coordinator, as illustrated in the diagram below:

Project Management Committee (PMC): The PMC will be the strategic and final decision-making body of the project. It will define the strategic orientations and will perform project monitoring activities. The PMC will consist of one Top Management representative from each partner and will be chaired by the Project Coordinator (PC). It will meet at the beginning of the project and regularly every 6 months during the project implementation, scheduling additional meetings if needed.

Technical Committee (TC): The TC will oversee operational issues and ensure alignment of activities and coordination among the partners on a day-to-day basis. The TC will consist of the technical coordinators of each work package and will be chaired by the Project Coordinator (PC). Specifically, the TC will:

- Establish adequate management and coordination mechanisms;
- Ensure proper allocation of financial, personnel and material resources;
- Identify and document roles, responsibilities and effective involvement of the partners, based on the workplan;
- Monitor and control
- Project performance according to the workplan towards the achievement of the objectives and milestones;
- Agree on reporting and evaluation procedures;
- Manage Project Quality Control and be responsible for the risk management in order to detect and anticipate possible risks and recommend and implement
- Contingency actions.

Project Coordinator (PC): The PC will be directly responsible for the execution and the technical coordination of the entire project. The project coordinator, Xavier Amores from CWP, will facilitate decision-making within the project and will act as the principal interface between the different parts of the project and be a reference contact for external organisations. He will ensure that all tasks are progressing and being delivered in accordance with the workplan objectives and schedule, provide periodic reporting (interim, initial and final reports – including contractual and administrative sections). In case of any important issues encountered, he will consult the TC for technical problems, and the PMC for strategic instructions, propose the necessary actions, and ensure that decisions and directions taken are properly implemented.

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2.5 Project management, quality assurance and monitoring and evaluation strategy

Project management, quality assurance and monitoring and evaluation strategy

Describe the measures planned to ensure that the project implementation is of high quality and completed in time.

Describe the methods to ensure good quality, monitoring, planning and control.

Describe the evaluation methods and indicators (quantitative and qualitative) to monitor and verify the outreach and coverage of the activities and results (including unit of measurement, baseline and target values). The indicators proposed to measure progress should be relevant, realistic and measurable.

To ensure that the project implementation is of high quality and completed in time there will be a specific tracking of all the activities of the project. This task will be carried out by the coordinator of the project and is described in WP1: Project management and coordination.

Thus, in this WP it will be included a technical and financial and administrative coordination and reporting. Those coordination and reporting tasks will ensure that the results and processes of the project are delivered on time within the budget and with the requirements established by EC. It will also be responsible for the coordination of the organisational structure and will ensure project quality control and risk management.

Technical coordination and reporting:

The technical coordination and reporting will include:

- ✓ Coordinating the joint efforts of the consortium during the execution of the project phase.
- ✓ Managing internal communication and decision-making, overseeing the activities of the work packages and the respect of timing and deliverables.
- ✓ Providing the necessary liaisons between the project team and the EC.

Periodical meetings will be scheduled at the beginning of the project on the kick-off meeting. All the teams members will be provided with full details of the administration system used on the project. This management and administration systems will include monitoring, reporting, financial control, etc. The day-to-day activities will be defined as well to ensure the right implementation of the project. A progress monitoring will be carried out to ensure the correct implementation of the project and to prevent deviations and mitigate all risk affecting the right wellbeing of the project.

Financial and administrative coordination and reporting:

This reporting will aim to ensure the adequate management of administrative requirements and periodic technical reporting, the establishment and maintenance of financial records, the submission of cost statements, and the claim for payments and distribution among partners.

Relevant activities include the day-to-day management of the project regarding administrative matters, maintaining the financial plan, financial monitoring and reporting, coordination of declaration of costs submission, and following-up on official EC payments. The responsibility for all coordination and management-related activities will be with the Project Coordinator, assisted by all of the team members.

The task leader will maintain regular contact with the Project Officer and the Legal and the Financial Officers at the EC, proactively communicating the developments in the project via regular management reports, personal meetings and the timely submission of deliverables as well as periodic/final technical and financial reports.

2.6 Risk management

Critical risks and risk management strategy

Describe critical risks, uncertainties or difficulties related to the implementation of your project, and your measures/strategy for addressing them.

Indicate for each risk (in the description) the impact and the likelihood that the risk will materialise (high, medium, low), even after taking into account the mitigating measures.

Note: *Uncertainties and unexpected events occur in all organisations, even if very well-run. The risk analysis will help you to predict issues that could delay or hinder project activities. A good risk management strategy is essential for good project management.*

Risk No	Description	Work package No	Proposed risk-mitigation measures
1	Unable to connect the quadruple helix (medium likelihood, high	All	Hold meetings with all partners involved in AquaLoops4Med to explain their roles and

	impact)		how they complement each other to achieve the proposed objectives.
2	Insufficient SME participation (medium likelihood, medium impact)	All	During the project, the Flagship SMEs will be supported by the other partners if it's necessary. However, periodic dissemination activities to promote participation of SMEs in cascade funding.
3	Poor communication /coordination between partners (medium likelihood, medium impact)	WP1	Periodic coordination meetings will be organized by the project, and an adequate evaluation plan will be implemented. To have clear evidence of the commitments of each partner, there will be a requirement to take minutes at each meeting which specify their responsibilities.
4	Delay in the construction of the pilot due to not having the necessary permits approved (low likelihood, medium impact).	WP2	Start procedure to obtain licences immediately once the project is awarded
5	Flooding risk (low likelihood, high impact)	WP2	Install the pilot in non-floodable areas.
6	Obtaining water for irrigation that does not comply with regional legislation (medium likelihood, medium impact)	WP2	Sample all treatments daily to determine which parameters are out of compliance. Add new treatments to the initial ones to compliance the water quality objectives for the irrigation use.
7	Insufficient private investment (low likelihood, high impact)	WP3, WP4	The technique of Communities of Practice (CoP) will facilitate periodic meetings and workshops. Providing a platform for sharing best practices and identifying investment opportunities related to sustainable water management technologies.
8	Lack of interregional cooperation and cohesion in water management (low likelihood, medium impact)	WP4	Creation of a Comprehensive Policy Cohesion Framework to ensure alignment of policies with EU priorities.
9	Effective implementation of cohesive policies (medium likelihood, medium impact)	WP4	Organising debates between regional policymakers and stakeholders to promote dialogue and create consensus.

3. COST EFFECTIVENESS AND FINANCIAL MANAGEMENT

3.1 Cost effectiveness and financial management

Cost effectiveness and financial management

Describe the measures adopted to ensure that the proposed results and objectives will be achieved in the most cost-effective way.

Indicate the arrangements adopted for the financial management of the project and, in particular, how the financial resources will be allocated and managed within the consortium.

 Do NOT compare and justify the costs of each work package, but summarize briefly why your budget is cost effective.

As mentioned above, financial management is integrated throughout the definition of the project management strategy. In order to achieve cost efficiency throughout the life of the project, the following rules will be taken into account: 1) present a budget coherent with the needs and real market costs for the different territories involved; 2) constant follow-up and monitoring of the budget and expenses, with a follow-up of deliverables and evaluation of the results; 3) take corrective measures when any type of deviation occurs.

Additionally, a financial management manual will be prepared based on the European regulations and requirements of the program, which will be managed by the lead partner and presented to all partners as a guide for financial management of the project.

All members agree to have a financial coordinator in their own organization who will administer the day-

to-day management of the project and tracking expenditures. In addition, the role of the project financial manager will be defined and will coordinate in an integrated way the management of the whole project, reporting to the project management team.

The financial management will be officially agreed and established during the preparation of the Grant Agreement, and during the Kick off Meeting the partners will sign the financial guidelines where the common criteria for the management and reporting of the expenses during the project and the support to SMEs will be established.

The financial and budgetary management is designed to achieve the expected results of the project in the most efficient way. The activities have been designed and distributed according to the resources and the technical and financial capacities of the partners. The budget has been estimated based on cost management and following the following criteria:

- Prospection of the costs for the expenses foreseen in the application, such as organization of activities, subcontracting, support services to the companies, etc.
- Experience of the partners in the previous management of projects, especially related to travel and communication material, etc. Considering the previous real costs, the budget estimate is more realistic.
- The cost of personnel expenses must be real and demonstrable.

The different categories of expenses have been determined in order to make an optimal cost estimate:

Staff: each company has determined the minimum staffing requirements to carry out the activities assigned to them. In the case of the SMEs, their role in management and communication tasks has been kept to a minimum in order to be able to concentrate on their technical roles.

Subcontracting: For those minor expenses, prospective estimates based on previous experience will be taken into account. For subcontracts exceeding €5,000, such as the construction of the pilot, a competitive procurement procedure will be followed.

Travel: priority will be given to virtual meetings in order to make the project budget more efficient, although necessary travel is contemplated to facilitate coordination and monitoring of the consortium. A few of the necessary trips will be Kick-off, consortium meetings (2 per year), implementation of the pilot and its technical follow-up, and the final project final event.

FSTP: 70% of the Grant is invested in supported companies/business cases. The maximum threshold for cascade funding is 30% of the Grant. FSTP and consortium service value is provided through a combination of types of support, (I) vouchers for external service providers, and (II) innovation & business support services from consortium partners. This design builds on the experience of the partners in the consortium, from participation in previous COSME, Euroclusters and INNOSUP projects. Cascade funding is provided under WP3. Investment projects will be funded to SMEs for developments of innovative sub-projects, where the interregional dimensions and end-users' involvement will be encouraged. Vouchers will be granted through the launch of open calls awarding successful proposals. The financial handling of the vouchers will be executed by the 4 relevant entities (UNIBAS in Basilicata, LAKE PLASTIRA in Thessaly, NTUA in Attica and CWP in Catalonia). For transparency and accountability purposes all selected business cases are required to (i) demonstrate best value for money in the selection of appropriate external service providers, and (ii) sign a Declaration of Honour ensuring implementation and the selection of third-party services aligned with Directive 2014/24/EU.

The SMEs investment cases will be delivered with support from the AquaLoops4Med, providing a comprehensive portfolio of services on data, innovation and business support responding to SME needs.

	Units	Innovation support vouchers (40 to 60)
Per voucher	40 to 60	€ 10,000 to 30,000
Total		€ 1,000,000

4. IMPACT

4.1 Impact and ambition

Impact and ambition — Progress beyond the state-of-the-art

Define the short, medium and long-term effects of the project.

Who are the target groups? How will the target groups benefit concretely from the project and what would change for them?

Does the project aim to trigger change/innovation? If so, describe them and the degree of ambition (progress beyond the status quo/state-of-the-art).

Expected impact

AquaLoops4Med aims at strengthening the Mediterranean economy and fostering the sustainable use of water in the agrifood sector by bringing together different types of stakeholders aiming at promoting competitiveness in the field of water management in the agrifood sector under a circular economy perspective. The AquaLoops4Med network will support interregional innovation investments in innovative SMEs developing sustainable and circular technologies and services in the field of water management including, but not limited to, technologies for wastewater treatment and reclamation, water reuse, smart irrigation and water supply from unconventional sources. This objective will be attained both by supporting pre-selected SMEs that will work together in shared demonstration sites and by scouting, identifying and selecting further investment projects thanks to the cascade funding scheme. This will result in the commercialisation and scale up of innovative technologies at high technology readiness levels (TRL 6-9). The activities of demonstration and validation of technologies will be complemented by the provision of services to support the innovation ecosystem as a whole, such as the establishment of a community of practice focused on greentech investments, the exchange of good practises and knowledge and the elaboration of policy recommendations. This will ultimately lead to the creation of new value chains in the regions of Thessaly and Basilicata.

AquaLoops4Med will positively impact on the environment by promoting technologies, solutions and services for efficient water resource management in the agrifood sector, as well as on the EU economy, particularly in less developed regions, by fostering competitiveness of SMEs, strengthening innovation ecosystems and creating new value chains across the Mediterranean.

Short, medium and long-term effects

The project will generate a range of impacts that respond to both the specific and broader objectives and expected impacts as stated in the I3-2023-INV2a call.

SHORT-TERM	
Deployment of innovative solutions compared to existing technologies/solutions	4 innovative technologies will be deployed in 2 collaborative demo-sites located in the less developed regions (Basilicata and Thessaly).
Uptake of technologically/economically reliable and viable solutions on the market.	Both partner SMEs and SMEs selected in the open call will be assessed in commercialising their solutions. The creation of the Interregional Innovative Ecosystem Platform for Green Tech Investment Funds and the visibility gained by being involved in the project will also contribute to market uptake.
MEDIUM-TERM	
Creating new market opportunities for EU companies;	By analysing the main stakeholders involved in the innovation ecosystem and by involving end-users from the agrifood sector AquaLoops4Med will make sure to support innovation that actually covers market needs. In this way, EU companies will directly address market gaps and challenges.
Reinforcing the capacity of regions to invest, joining forces around shared S3 investment priorities (interregional investments);	The involvement of public authorities and the shared agendas methodology (see Section 2.1) will be fundamental to ensure a joint approach.
Innovation diffusion	The first adopters of the innovations promoted by the projects will be the end users providing their facilities to test the technologies. In the case of the demo site in Thessaly, they are directly involved in the consortium to bring their challenges and needs to the table. At the same time, they will provide valuable feedback to technology developers and will give visibility to the applied solutions among other practitioners in the agrifood sector.
LONG-TERM	

Reinforcing/reshaping EU value chains whilst increasing EU competitiveness in global markets;	The actions carried out in AquaLoops4Med will strengthen the EU business network, particularly in less developed regions, boosting the water-management sector by leveraging on the needs of the agrifood sector, will favour the creation of a tech-based industry as well as services such as consulting. This project could be a first step to promote the creation of water clusters in less developed regions (as was created in Catalonia 15 years ago) or promote technology transfer activities between SMEs and Universities (as Catalonia with IRTA/ICRA or ATTICA with NTUA).
Unlocking the innovation potential of EU regions/countries	The interactions among stakeholders from the 4 participating regions in the framework of AquaLoops4Med will reinforce the innovation ecosystems unleashing the innovation potential across the Euro Mediterranean
Contributing to the European Green Deal objectives	Being focused on sustainable and circular water management, AquaLoops4Med is fully aligned with the European Green Deal and aims to bolster industrial innovation and clean tech
Positive impact on environment, health, climate, social and economy	The activities planned in the project framework will play a fundamental role in climate change adaptation, will prevent the overexploitation of water resources by closing the loop. Pollutants monitoring and risk assessment will avoid any health harm. At social level, the AquaLoops4Med network creation will encompass all relevant stakeholders, including society itself. At economic level, EU competitiveness will be boosted, leaving no one behind in accordance with the cohesion policy.
Economic growth and job creation	A set of SMEs across the four participating regions will benefit from funding, knowledge sharing and consultancies in the framework of AquaLoops4Med. The involvement of public administration will also have a multiplier effect in conveying appropriate support for enterprises to thrive. These activities will ultimately lead to the creation of new value chains in the domain of water management in the agrifood sector and will boost job creation.

Target groups of the project

1. AquaLoops4Med **project partners** will be the most direct beneficiaries of the project. In line with the call objectives, the partner SMEs (6) will play a crucial role. They will convene to work in cooperation for the demonstration of decentralised water reclamation technologies to reuse water in two demo sites with the support of the other stakeholders involved.
2. **Innovative SMEs and start-ups in the field of solutions for water management:** Cascade funding will allow the provision of services to a second group of companies. The project seeks to support between 40 to 60 companies in the development or implementation of business and “go to market” plans, the development of projects portfolios for close-to-market investments, adaptation of technologies and services from the water sector to the needs of the agrifood sector and activities to bring new ideas and products to the market.
3. **Demand side - Agrifood sector:** The project focuses specifically on the agrifood sector due to its relevance across the Mediterranean and as a water-intensive sector. To bridge the gap between demand and supply as well as to tailor efforts towards impact, a livestock farm for dairy production (FRESH MILK) is directly involved in the consortium as project partner. Communication, dissemination and replication activities will seek alliances with the agrifood sector at all levels (clusters, business support organisations, public authorities, associations, farmers, etc) to maximise the impact of AquaLoops4Med.
4. **Clusters and associations:** AquaLoops4Med is led by CWP, a cluster with a multi-stakeholder dimension, which integrates a wide range of actors: SMEs, start-ups, big companies, universities, research and technology centres, water utilities, public authorities. The project will seek alliances with other cluster organisations working in sectors such as water, greentech and environment but also with clusters from the agrifood sector, also this project could help in the creation of a seed for new water clusters in others 3 regions involved in the project.
5. **Policy makers and public administrations:** Local, regional, national and European administrations are also relevant to facilitate the creation of this AquaLoops4Med network to advance towards a more competitive, international and sustainable management of water resources. These actors can add valuable contributions to activities such as the promotion of Open Calls, can participate in the Interregional Innovative Ecosystem Platform

for Green Tech Investment Funds and will be focal points in the elaboration of the Policy Cohesion Framework.

6. **Universities, research centers or technological centers:** AquaLoops4Med promotes technology transfer activities between universities and research centers, and cooperation with SMEs in TRL close to the market. This project could help in technology transfer policies of all the regions involved as a success story of R&D and innovation cooperation.
7. **Investors:** the consortium will identify possible sources of funding/funding mix, to cover the residual investment needs, such as private or public investors. All these actors will convene in the Interregional Innovative Ecosystem Platform for Green Tech Investment Funds

Within the AquaLoops4Med project, we aim to trigger change and innovation beyond the state of the art

The AquaLoops4Med network initiate a new, coherent approach to overcoming market failures linked to the environmental challenges posed by climate change (overall decrease in water availability, severe droughts) in the Mediterranean and affecting particularly the agrifood sector and supporting the transition from a linear to a circular water management, thus closing the loops. The AquaLoops4Med project will create new, sustainable value chains to increase the technology maturity and accelerate the market uptake and scale-up of demand-driven sustainable and circular innovations in the field of water supply, treatment, reclamation and reuse. We will do so by developing all actors in the value chain, supporting matchmaking SMEs and connecting demand and supply side. We will provide SMEs with access to knowledge and resources for innovation processes, public and private investors, living labs and to other scale up services. By connecting regions from across Europe at different innovation levels, we will contribute to increasing innovation capacities of less developed regions. In addition, the governance model of the AquaLoops4Med network will be fine-tuned in the project to result in a closer interregional cooperation model that can take European innovation initiatives to the next level.

Environmental, territorial and social impact

Explain the main social, territorial and environmental impacts of the project (if relevant).

Describe the measures proposed to reduce the environmental footprint of your project, for example through the use of green procurement, environmental management systems, etc.

Environmental Impact

AquaLoops4Med aims at solving environmental challenges related with climate change in the Euro Mediterranean. In particular, it provides solutions for climate change adaptation such as droughts and increased water stress. The implementation of the project will entail significant water savings and will boost water reuse practises in the agrifood sector. Besides demonstration activities foreseen in WP2, the project will support another set of companies in the go-to-market strategies to create new value chains in the domain of solutions, technologies and services related to water management in the agrifood sector, aiming for a multiplier effect. The reduction of water consumptions related to livestock farming, agriculture and food processing will alleviate the pressure on water systems and will therefore increase water availability for other uses. All these activities are aligned with a set of EU environmental policy framework, including the Farm to Fork strategy and the European Green Deal.

Territorial Impact

The project implementation will have a strong territorial impact in the four participating regions, with a special emphasis on the two less developed regions (Basilicata and Thessaly). Basilicata and Thessaly will host the two demonstration sites. Interactions with end users from the agrifood sector will also positively impact the territories, as end users will have the opportunities to share their needs and challenges related with water management in the specific territories, to follow a demand-driven approach. Another territorial impact is related with the competitiveness of SMEs, which be fostered across the Euro Mediterranean and especially in those regions where entrepreneurship is less prominent. Finally, AquaLoops4Med will strengthen the innovation ecosystem through quadruple helix cooperation so that companies can thrive. The project will strongly contribute to cohesion policy objectives, creating the conditions to align innovation levels across Europe.

Social Impact

AquaLoops4Med will impact on three main vectors related to society:

A more sustainable and circular water management, will reduce water stress by reducing water consumption in the agrifood production. This in turn will increase water security in the Mediterranean. At

the same time, special attention will be paid to ensure that water reclamation and reuse will not jeopardise human health by carrying out risk assessment studies on the application of reclaimed water on crops. Moreover, Sustainable water management practices protect ecosystems and biodiversity. This ensures that future generations can enjoy and benefit from healthy ecosystems.

Increased food security will be attained through the development, implementation, adaptation and commercialisation of technologies aiming at improving water management in the agrifood sector. This will have a beneficial impact on food production, decreasing the dependency of farms on rainfall or on network supply. As described in section 1.2, long droughts can entail restrictions to water uses similarly to what is currently happening in Catalonia, with impacts on the sector productivity and competitiveness. Increasing food security will bring stable prices and will ensure that more individuals can afford adequate and nutritious food supply, leading to improved overall health and well-being. Another aspect to take into account is that improved food security supports the livelihood of farmers, agricultural workers and employees in the food processing industries.

More competitive SMEs: Competitive SMEs often create more job opportunities. This contributes to reduced unemployment rates and provides individuals with a source of income and job security. This will be especially true for less developed regions, where AquaLoops4Med can actively contribute to the creation of new value chains in the water management industry and, in turn, job creation. Moreover, when SMEs are competitive, they can contribute significantly to the overall economy. This, in turn, can lead to increased economic growth, higher GDP and better living standards. Competitive SMEs are more likely to invest in innovation and employee training. This helps in the development of new skills and knowledge among the workforce, enhancing their employability and the overall skill level in society. Finally, a thriving SME sector can empower individuals to become entrepreneurs. This can have a positive social impact by fostering a culture of entrepreneurship, which can lead to economic self-sufficiency and creativity within communities.

4.2 Communication, dissemination and visibility

Communication, dissemination and visibility of funding

Describe the communication and dissemination activities which are planned in order to promote the activities/results and maximise the impact (to whom, which format, how many, etc.). Clarify how you will reach the target groups, relevant stakeholders, policymakers and the general public and explain the choice of the dissemination channels.

Describe how the visibility of EU funding will be ensured.

Communication and dissemination are essential parts to give visibility to the project and therefore, to increase the impact of it at different levels: economic, societal and environmental. These communication and dissemination activities will ensure that all relevant information about the project, its activities and results will be available to the target public. The aims will be:

- To disseminate the activities proposed in the frame of the project to get more people interested on the project and optimise visibility.
- To communicate the outcomes to target audiences and generate a bidirectional communication flow
- To create a network of stakeholders interested in the project to maximise funding opportunities
- To ensure that the project's outcomes are disclosed to appropriate target stakeholder group.

These objectives will be achieved by developing external communication tools and materials such as a website, profile in Twitter and LinkedIn, leaflet and roll-up of the project, newsletters, press releases and news.

Along the first semester of the first year of the project, a branding document will be created. It will contain: a logo, rules of use for it, corporative colours and how to use them, typography and template for word and power point. All this will become part of the main corporative image of the project .

During the project different actions will be taking place to help the tasks of communication and dissemination, such as These will be:

- Website: information of the project will be fund in the partners websites will be made along the first 6 months of the project aiming to increase the corporative image of the project and to have a place where to centralise all the news and events related to it.
- Profiles on social networks (X and LinkedIn): during the first month of the project, the creation of a profile in Twitter and LinkedIn will be made. These will let us have a place where to post all the updates, outcomes, communications and events related to the project, to enable a place where to create a community interested on the issues of the project and to create a bidirectional

communication flow with those who want to know more about us.

- Workshops: workshops will be organised in order to present the different regions participating, their needs and that synergies can come from them.
- Press releases will be launched to a specialised public throw specific media explaining the project, communicating the advances and outcomes depending on the moment of the project
- Newsletters will be an interesting tool when communicating to our stakeholders about the economical and social impact of the project.
- Flyers and leaflets will be designed and printed to bring to events that we organise or where we participate or when we go to fairs.
- Events where the project is presented that will be related to the agrifood sector to increase the awareness of the project to our target.
- Participation in fairs which can be international or national so we can disseminate AquaLoops4Med to more extended public and to networking.
- Demo Day so all the participants are aware of the advanced on the pilot and to know it better.
- Activities with other projects / institutions similar to us or aiming the same to empower the issues treated to create more impact and to generate more interest on the items.
- Video of the project summarizing all the job done throw the project that will give us a powerful tool to disseminate to by our channels.
- Final event to present the conclusions, outcomes and synergies generated throw the project that will create a huge impact on the sector.

These will be the following:

Action/Tool	Objective	KPI	Target
Information of the project in the websites of the non-profit or public members of consortium	Disseminate project results	Number of project partners' websites with information of the project	6
Create a profile in Twitter	Engagement to general public/ Disseminate project results/ Disseminate project results in the scientific community	Number of followers	150
Create a profile LinkedIn	Engagement to general public/ Disseminate project results/ Disseminate project results in the scientific community	Number of followers	300
Workshop organised or participated	Engage stakeholders	Number of workshops	10
Workshop, conferences, communication activities or congresses in regions out of the project	Engage other regions	Number of communication activities in regions not involved in the project	10
Nº of participants/workshop	Total citizens/stakeholders and generate outcomes	Nº of participants	500
Press releases in specialised media	Disseminate project results in the scientific community	Number of press releases	3
Newsletters (2/year)	Disseminate project results/ Disseminate project results in the scientific community	Number of press releases	9
Flyers and leaflets	Disseminate project results	Number of leaflets distributed	2000

Events where the project is presented	Disseminate project results	Number of events where the project is presented	10
Participation in fairs	Disseminate project results	Number of fairs where participated	4
Demo Day	Organization of Demo Days in the project demonstration sites	Number of Demo Days in the project demonstration	2
Activities with other projects / institutions	Active cooperation and knowledge exchange with other EU projects and initiatives	Number of collaborations	4
Video of the project	Disseminate project results	Number of videos of the project	1
Final event	Disseminate project results	Nº of participants	100

Communication strategy

The communication strategy will be hold throw different channels and in different moments, these channels are:

Social networks: LinkedIn and X will be used to pursue the objective of engagement to general public and to disseminate project results. They have become an important tool nowadays to be known and to create a community around the companies, people or in this case, the project that can lead to successful interactions and can fortify the ties of the project with it becoming more powerful. Having them will proportionate us more visibility and awareness.

Website: in the framework of the project, all the main information of the project will appear in all the websites of the public or non-profit partners with at least: Description of the project with the corresponding aims of it, News, outcomes and updates regarding the project, Activities that will be launched as an agenda: workshops, events, Information about the consortium, information on Open Calls (WP3)

Press Releases: to give an extensive and detailed information about an event or a remarkable achievement. If they are disseminated through the right channels we can create a huge impact that can fortify the presence and renown of the project and so that its awareness. There will be two types: one more focused to the business target and another focused to general public so the people that don't have a formation but feel interest on it can follow the achievements and advances.

Newsletters: commonly used to disseminate information to a huge public which has been previously registered to a data base. In this case, the date base will be composed by all those belonging to the consortium, agriculturists from the zones involved in the project and companies specialized with water technologies. Obviously, can be added other actors that may contact us because they feel interest on the item.

Video: it will be launched at the end of the project with video and images of all the activities, journeys, meetings, zones involved in the project and interviews to the main involved in the project.

Visibility of funding

in all the corporative material that will be elaborated, the materials for dissemination of the activities and events, website, newsletters, descriptions of the project and press releases, the logo of the funding agency and reference to Grant Agreement will appear. This can give us more reputation and understand it as a guarantee of a qualified project

4.3 Sustainability and continuation

Sustainability, long-term impact and continuation

Describe the follow-up of the project after the EU funding ends. How will the project impact be ensured and sustained?

What will need to be done? Which parts of the project should be continued or maintained? How will this be achieved? Which resources will be necessary to continue the project? How will the results be used?

Are there any possible synergies/complementarities with other (EU funded) activities that can build on the project results?

The project will seek to ensure the sustainability of AquaLoops4Med activities beyond the project duration, through the design and implementation of a Replication and exploitation plan which will also encompass project sustainability. The overall objective of this plan will be to adapt the results of the project, the experience and capacities acquired by the consortium members and the network of Greek, Italian and Spanish stakeholders, as well as SMEs and other facilitating entities, and to propose a business plan that will allow AquaLoops4Med to continue in the long term.

The objectives of the sustainability plan will be:

- To design a business and action plan to identify other revenue options, projects, funding schemes and actions that will enable AquaLoops4Med to continue after the end of the project in other regions.
- Maintain an active and sustainable network to continue sharing experiences, interests and synergies among AquaLoops4Med consortium members.
- Actions to promote and foster business and collaboration between the four mediterranean regions (Thessaly, Attica, Basilicata and Catalonia) in the water and agri-food sector and in the nexus between them.

The impact of the sustainability plan is therefore broader than the long-term viability of the network, as it can help Mediterranean SMEs to develop new markets and contribute to economic development in the future. It will include the following components:

a) Values, mission and vision. Subsequent activities will be carried out with these aspects in mind together. The values will encompass the perspective of each AquaLoops4Med partner. The mission will focus on stakeholder benefits. Finally, the vision represents the aspirations of AquaLoops4Med in the medium and long term.

b) Capacity building strategy and implementation plan that allows the use and application of the resources, tools, engagement methods and capacity building by AquaLoops4Med partners once the project is completed. Within this task, the analysis of the most sustainable business models will be carried out, also based on the direct opinion of the users involved during the project.

d) Revenues. In line with the financial plan, the project will also include in detail other possible additional services aimed at ensuring the economic viability of the platform for at least four years after the financial support of the I3 program.

The expected outcome of the above points will be a market deployment plan for the SME, and in other Mediterranean and European regions, in order to grow AquaLoops4Med in other areas. It will ensure the sustainability of the project and further exploitation and dissemination of the project results, with the boosting of cross-regional cooperation, based on the project, sustainable scaling up, replication and exploitation of the methodology and possible tools for other Mediterranean and European regions.

Some aspects to be taken into account are:

- Level of continuation of project activities: Are they easily replicable by other ecosystems and stakeholders?
- Benefits/impact of the project (are they short or long term?).
- Financial resources - what are the potential sources of funding for project scale-up, e.g. membership fees, sponsorship, provision of paid services, internal investment (in-kind contribution from consortium members), other national and European/international funding programs?
- Engagement / Participation: Has the project maintained a desirable level of ecosystem stakeholder participation in project activities?
- Management stability: Has the project adequately considered the requirements for the continuation of project management?

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5. WORKPLAN, WORK PACKAGES, ACTIVITIES, RESOURCES AND TIMING

5.1 Work plan

Work plan

Provide a brief description of the overall structure of the work plan (list of work packages or graphical presentation (Pert chart or similar)).

The AquaLoops4Med work plan structure is aligned with the project sub-objectives presented in section 1.2 and follows the methodology set out in section 2.1. Its structure maximises synergies between activities and partners to attain the expected results and impacts outlined in section 4.1.

The AquaLoops4Med project revolves around 5 WPs:

WP1: Project management and coordination

WP2: Demonstration collaborative activities

WP3: Pilot Interregional innovation investments

WP4: Interregional Investment and Business Innovation through Smart Specialisation

WP5: Communication, dissemination and replication

5.2 Work packages, activities, resources and timing

WORK PACKAGES

Work packages

This section concerns a detailed description of the project activities.

*Group your activities into work packages. **A work package means a major sub-division of the project.** For each work package, enter an objective (expected outcome) and list the activities, milestones and deliverables that belong to it. The grouping should be logical and guided by identifiable outputs.*

Projects should normally have a minimum of 2 work packages. WP1 should cover the management and coordination activities (meetings, coordination, project monitoring and evaluation, financial management, progress reports, etc) and all the activities which are cross-cutting and therefore difficult to assign to another specific work package (do not try splitting these activities across different work packages). WP2 and further WPs should be used for the other project activities. You can create as many work packages as needed by copying WP1.

Work packages covering financial support to third parties (⚠ only allowed if authorised in the Call document) must describe the conditions for implementing the support (for grants: max amounts per third party; criteria for calculating the exact amounts, types of activity that qualify (closed list), persons/categories of persons to be supported and criteria and procedures for giving support; for

prizes: eligibility and award criteria, amount of the prize and payment arrangements).

⚠ Enter each activity/milestone/output/outcome/deliverable only once (under one work package).

⚠ Ensure consistence with the detailed budget table (if applicable).

Objectives

List the specific objectives to which the work package is linked.

Activities and division of work (WP description)

Provide a concise overview of the work (planned tasks). Be specific and give a short name and number for each task.

Show who is participating in each task: Coordinator (COO), Beneficiaries (BEN), Affiliated Entities (AE), Associated Partners (AP), indicating **in bold** the task leader.

Add information on other participants' involvement in the project e.g. subcontractors, in-kind contributions.

Note:

In-kind contributions: In-kind contributions for free are cost-neutral, i.e. cannot be declared as cost. Please indicate the in-kind contributions that are provided in the context of the work package.

The Coordinator remains fully responsible for the coordination tasks, even if they are delegated to someone else. Coordinator tasks cannot be subcontracted.

If there is subcontracting, please also complete the table below.

Milestones and deliverables (outputs/outcomes)

Milestones are control points in the project that help to chart progress (e.g. completion of a key deliverable allowing the next phase of the work to begin). Use them only for major outputs in complex projects, otherwise leave the section empty. Please limit the number of milestones by work package.

Means of verification are how you intend to prove that a milestone has been reached. If appropriate, you can also refer to indicators.

Deliverables are project outputs which are submitted to show project progress (any format). Refer only to major outputs. Do not include minor sub-items, internal working papers, meeting minutes, etc. Limit the number of deliverables to max 10-15 for the entire project. You may be asked to further reduce the number during grant preparation.

For deliverables such as meetings, events, seminars, trainings, workshops, webinars, conferences, etc., enter each deliverable separately and provide the following in the 'Description' field: invitation, agenda, signed presence list, target group, number of estimated participants, duration of the event, report of the event, training material package, presentations, evaluation report, feedback questionnaire.

For deliverables such as manuals, toolkits, guides, reports, leaflets, brochures, training materials etc., add in the 'Description' field: format (electronic or printed), language(s), approximate number of pages and estimated number of copies of publications (if any).

For each deliverable you will have to indicate a due month by when you commit to upload it in the Portal. The due month of the deliverable cannot be outside the duration of the work package and must be in line with the timeline provided below. Month 1 marks the start of the project and all deadlines should be related to this starting date.

The labels used mean:

Public — fully open (⚠ automatically posted online on the Project Results platforms)

Sensitive — limited under the conditions of the Grant Agreement

EU classified — RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision [2015/444](#). For items classified under other rules (e.g. national or international organisation), please select the equivalent EU classification level.

Work Package 1

Work Package 1: Project management and coordination					
Duration:		M1 – M36	Lead Beneficiary:		CWP
Objectives					
The overall aim of this work package is to ensure the smooth development and coordination of all activities outlined in the project work plan. It will also handle administrative matters related to project funding and reporting. Specific aims are: • To ensure effective coordination and communication among partners and within the steering committee. ▪ Ensuring proper project management to achieve all project objectives and milestones. ▪ Coordination of all WPs, ensuring that all planned activities are implemented correctly by all partners according to the working plan and budget constraints. ▪ Ensuring compliance with all legal, contractual, financial, and reporting obligations ▪ Planning and executing project activities and implementing quality assurance measures. ▪ Identifying and addressing implementation risks throughout the project duration. ▪ Preparing and submitting required project reports and liaising between partners and the EU Commission.					
Activities and division of work (WP description)					
Task No	Task Name	Description	Participants		In-kind Contributions and Subcontracting
			Name	Role (COO, BEN, AE, AP, OTHER)	
T1.1	Technical coordination and reporting [M1-M36]	As described in section 2.5, CWP as project coordinator, will ensure an efficient project management. This task includes coordinating the collaborative efforts of the consortium throughout the project's execution phase, managing internal communication and decision-making processes, overseeing the activities of the work packages, and ensuring adherence to deadlines and deliverables, and it is responsible for establishing essential connections between the project team and the EC. CWP will organize the kick-off- meeting and will schedule periodical meetings with the technical committee once a month and face-to-face consortium meetings that will be held each 6 months.	CWP All the partners	COO BEN	NO

		This task will include a definition of the execution as well of all the activities within the quality standards ensuring a common process and procedures. I will also include a management plan. For the successful project implementation and to ensure that the project met their objectives and quality standards, to avoid deviations, to foresee, mitigate and manage risk, a continuous project technical progress monitoring will be carried out. CWP will also be the designated partner in charge of preparing and delivering technical progress reports, for which CWP will coordinate each partner according to their responsibilities within the preparation of the report and will oversee deliver on the fixed deadlines.					
T1.2	Financial and administrative coordination and reporting [M1-M36]	This task will include the adequate management and administrative requirements, periodical technical reports, and financial management. The task leader will maintain regular contact with the Project Officer and the Legal and the Financial Officers at the EC, proactively communicating the developments in the project via regular management reports, personal meetings and the timely submission of deliverables as well as periodic/final technical and financial reports. Thus, the maintenance of the financial plan, financial monitoring and reporting, coordination of declaration of cost submissions and follow-up of payments can be assured. A continuous monitoring carried out by the CWP will ensure a prompt administrative and financial execution.	CWP All the partners	COO BEN	NO		
Milestones and deliverables (outputs/outcomes)							
Milestone No (continuous numbering not linked to WP)	Milestone Name	Work Package No	Lead Beneficiary	Description		Due Date (month number)	Means of Verification
MS1	Mid-term report approved	1	CWP	Project progressing correctly at M18, and activities being implemented according to plans.		M18	European Commission Mid-term report approval
Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date	Description (including format and language)
D1.1	Data management plan	1	CWP	R	SEN	M6	Mandatory deliverable for

							IPR management, privacy and security of results – pdf - EN
D1.2	Mid- term report	1	CWP	R	SEN	M18	Mandatory deliverable to inform on project implementation – pdf - EN

Estimated budget — Resources

See detailed budget table (annex 1 to Part B).

Work Package 2

Work Package 2: Demonstration collaborative activities

Duration: M1 - M36 Lead Beneficiary: AERIS

Objectives

This WP aims to develop innovative SMEs-led initiatives by investing in collaborative demonstration activities consisting in a set of pilot scale (TRL 7) systemic, efficient, cost-effective and circular solutions for the recovery of rainwater and the minimization, stabilization and valorisation of cattle raising waste through the biological production of highly valuable compounds, such as high-quality water valid for fertirrigation according to European legal standards, methane-rich biogas, biostimulants, biopesticides and algal biomass. For this, a series of demonstrators will be developed and operated in 2 demo sites (one in Basilicata and one in Thessaly), namely (1) an innovative sub-surface rainwater collection system, (2) a wastewater treatment plant comprising anaerobic co-digestion with membrane separation (AnMBR), solid-state fermentation (SSF) and partial nitrification/denitrification (pN/DN), (3) an innovative treatment coupling algal and filtration processes and (4) a novel digital irrigation technology for the application of reclaimed water. Following a circular economy approach, the reclaimed water and recovered bioproducts will be applied onsite for fertirrigation, cattle washing, enhanced crops growth and plagues control. The specific objectives are:

• Design, build and deploy a rainwater collection system, an AnMBR+SSF+pN/DN demonstrator and an algal biomass/biofiltration demonstrator. • Establish optimal co-digestion materials and pre-treatment techniques and conditions to maximize methane production through anaerobic digestion. • Valorise digestate from anaerobic digestion via solid-state fermentation through the production of valuable bioproducts ready to use in sustainable agriculture. • Treat and valorise wastewater from dairy activities through the production of microalgal biomass by means of an algal biomass/biofiltration system. • Test and validate the demonstrators under real transient conditions, aiming to reach TRL 9 by the end of the project • Use reclaimed water for irrigation on crops of the demonstration plots by applying smart irrigation technologies and test a novel, low-cost and fully automated smart irrigation system for fertirrigation purposes.					
Activities and division of work (WP description)					
Task No	Task Name	Description	Participants		In-kind Contributions and Subcontracting
			Name	Role (COO, BEN, AE, AP, OTHER)	
T2.1	Design and implementation of an innovative rainwater harvesting hydro-system [M1-M12]	A low-cost novel, shallow, sub-surface rainwater harvesting system consisting in geomembrane and geotextile layers will be implemented to collect rainwater from the land and farm rooftops. This water will then be stored in two cylindrical, flexible and lightweight storage tanks made of structural grid and waterproofing local materials. State-of-the-art IoT sensors will allow remotely monitoring stored water quantity and quality.	HYDRASPIS NTUA, FRESH MILK, LAKE PLASTIRA, AGENSO, CWP	COO BEN	NO
T2.2	Co-substrates selection and pre-treatment conditions assessment [M1-M6]	This task aims at defining, testing and selecting the most adequate co-substrates and pre-treatment techniques for the anaerobic processing of livestock waste, having into account technological, efficiency, economic and environmental considerations. The livestock waste and different organic co-substrates (straw, husk, pruning remains and other agricultural residues) will be subjected to physico-chemical characterization (COD, BOD5, TS, VS and N and P content) and biological methane production potential determination in laboratory. The most promising mixtures in terms of biomethane production will be subjected to a series of pre-treatment processes (including shredding and thermal, biological and chemical hydrolysis) with the purpose of establishing the processes and conditions that	NTUA AERIS, CWP	COO BEN	NO

		maximize methane production.			
T2.3	Design and implementation of an AnMBR+SSF+pN/DN demonstrator for high-COD wastewater treatment [M3-M12]	A fully-automated, safe and robust demonstrator comprising (1) livestock waste pre-processing (2) anaerobic waste digestion, (3) solid-state fermentation and (4) ammonium removal through partial nitrification/denitrification will be designed, built and tested. The results obtained in Task 2.2 will be used to design the pre-treatment system and the anaerobic reactor. This material will be fed to a fully-automated 500 L AnMBR. The denser digestate fraction will be dehydrated in a filter bag and then subjected to solid-state fermentation for plant growth biostimulants and biopesticides production, while the liquid fractions from both the AnMBR and the filter bag will be sent to a 500 L pN/DN SBR for further COD and ammonium removal. UV lamps will be used if further water pathogens elimination is required. The biogas produced will be processed in a commercial heater for energy recovery.	AERIS NTUA, AGENSO, CWP, UNIBAS, CWP	COO BEN	YES. Transport of the demonstrator from Barcelona to Thessaly
T2.4	Design and implementation of a demonstrator based on algal and filtration processes for low-COD wastewater treatment [M1-M12]	Optimal algal strains for bioremediation and operating conditions for bioremediation and filtration processes will be identified in preliminary lab-scale studies. This information will be used for the design and construction of a pilot plant comprising coupled algal remediation and filtration on natural materials.	UNIBAS BIOINNOVA, ARPAB, ICRA, AERIS, CWP	COO BEN	NO
T2.5	Demonstrators operation [M13-M36]	The rainwater harvesting system and the AnMBR+SSF+pN/DN plant will be deployed in a farm in Plastiras Lake (Thessaly, Greece) in month 13 and operated continuously for a minimum of two years, while the microalgae/biofiltration demonstrator will be deployed in Bosco Trecase (Picerno, Italy) on month 13 and operated for at least two years as well. The rainwater harvesting system will allow the collection of >100 m3 water/year. Water will be collected during the rainy season and used for crops irrigation during the dry season. The AnMBR+SSF+pN/DN and the algal/biofiltration plants will be fed with agricultural waste+co-substrates and wastewater from milk processing, respectively, and tested to establish the operating conditions that maximize treatment and valuable products (biogas, biostimulants, biopesticides, algal biomass and high-quality water) production	NTUA AERIS, AGENSO, HYDRASPIS, UNIBAS, BIOINNOVA, ARPAB, ICRA, IRTA, CWP	COO BEN	YES. Serum and the surface for the demo site

		and that minimize operating costs.				
T2.6	Reclaimed water application in demonstration plots for agricultural production and test a novel low-cost fully-automated fertirrigation system, monitoring and risk assessment [M13-M36]	The reclaimed high-quality water produced in the demonstrators will be used to irrigate crops for cattle feed in demonstration plots next to the livestock farms. A novel, low-cost and fully automated IoT smart irrigation system will be applied and tested. Experiments at greenhouse scale will be performed to unveil the mechanisms and interactions between soil, water, plants and fruits. Crop yield will be compared to that of controls irrigated with tap water. Heavy metals or selected emerging contaminants (e.g., microplastics and pharmaceutical compounds) content will be monitored, and human health risk assessment will be performed.		NTUA AERIS, AGENSO, HYDRASPIS, UNIBAS, BIOINNOVA, ARPAB, ICRA, IRTA, CWP	COO BEN	YES: Sample collection from experimental field & data analysis
T2.7	Elaboration of business and investment plans and market readiness assessment [M25-M36]	Business and investment plans as well as market readiness assessment will be performed for each of the tested technologies. The plans will also include target regions for replication activities, new related regional/interregionals innovation projects, funding opportunities by public bodies arisen following demo implementation.		WE&B AERIS, HYDRASPIS, BIOINNOVA, AGENSO, FRESHMILK, CWP	COO BEN	NO
Milestones and deliverables (outputs/outcomes)						
Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Description	Due Date	Means of Verification
MS2	Demonstrators installed and running	2	AERIS	All three demonstrators have been deployed onsite and are fully operational.	M14	Operating manual, P&ID, pictures and plans
MS3	Generation of high added value products	2	NTUA	All three demonstrators are operating according to the indicated KPIs in terms of water and other valuable products generation	M36	Report on the production of water and valuable substances in the demonstrators

Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date	Description
D2.1	Laboratory tests for optimization of biogas and algal biomass production	2	UNIBAS	R	PU	M14	Report comprising the experiments performed at lab-scale to establish optimal AD pre-treatment conditions, AD co-substrates, algal strains and operating conditions for bioremediation and filtration processes to maximize water recovery and valuable substances production – pdf - EN.
D2.2	Demonstrators deployed and operating	2	AERIS	DEM	PU	M18	Three demonstrators fully operative, with operation manuals, plans and diagrams
D2.3	Production of high added-value substances	2	NTUA	R	PU	M36	Report comprising the 2-years operation of the three demonstrators in terms of water treatment and production of high added-value substances – pdf - EN.
D2.4	Application of reclaimed water	2	AGENSO	R	SEN	M36	Assessment of the performance of the use of the reclaimed water for crops growth through an innovative fertirrigation system, including human risk assessment– pdf - EN.
D2.5	Business and investment plans for flagship SMEs	2	WE&B	R	SEN	M36	Mandatory deliverable that includes business and investment plans for the SMEs testing their technologies in the demo sites and the assessment of the market readiness at the end of the

							implementation period – pdf - EN.
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Estimated budget — Resources

See detailed budget table (annex 1 to Part B).

Work Package 3

Work Package 3: Pilot Interregional Innovation Investments

Duration:	M1 – M36	Lead Beneficiary:	NTUA
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Objectives

Main Objective:

The goal of WP3 is to fund and support SMEs from the water sector that can offer products, services and solutions to improve the water management in the agrifood sector through the FSTP scheme that will allow allocating 40 to 60 vouchers, each worth € 10,000 to € 30,000, and the identification of services to be provided by the project consortium or other existing initiatives. Technical documents will be developed to guarantee a correct and transparent funding allocation. Evaluation criteria will be developed and agreed among the project partners at least 2 months before the first call and will encompass 4 aspects of the proposals: 1) feasibility, 2) impact over end users, 3) replicability and 4) possible scaling up and transfer. The FSTP scheme will fund activities according to the call description of target investments.

For each funded voucher, a bilateral agreement detailing the conditions and procedures will be signed. During the implementation of subprojects, a monitoring strategy will be also determined, together with impact assessment and assessment of the market readiness at the end of the project, to measure the impacts and outputs of the activities. The payments are going to be done in two steps (at mid-term and the end of the implemented activity), and for each project a monitoring technician from the same country as the funded SME will be in charge of the follow-up of the project and the management of the legal documentation (agreement, acknowledgement of receipts, etc).

Subobjectives:

- To implement a FSTP scheme to fund innovative sub-projects from SMEs to improve water management in the agrifood sector.
- To create the contents and documents required for the dissemination and implementation of the FSTP scheme, including an effective and coherent methodology for the evaluation and selection of the sub-projects.
- To monitor the evolution of the FSTP scheme and to assess the quantitative impacts and benefits of the FSTP scheme.

Activities and division of work (WP description)

Task No	Task Name	Description	Participants		In-kind Contributions and Subcontracting
			Name	Role	
T3.1	Design of the open calls, evaluation and elaboration of material and content [M1-M6]	A preparation of the voucher scheme documents and contents will be done by the Technical Committee (TC) of the project. It will include two open calls for funding. Support documents needed for the implementation of the FSTP scheme are going to be designed and elaborated at least 2 months before the launching of the first call. Design and validation by all partners of an evaluation and selection methodology details will be also done 2 months before the launching of the first call.	NTUA LAKE PLASTIRA, UNIBAS, CWP, IRTA, ICRA, WE&B	COO BEN	NO
T3.2	Identification of further services for SMEs [M1-M6]	A mapping of service providers for SMEs will be identified and compiled in each region as a guide for prospective applicants to cascade funding. Moreover, other services and opportunities from other entities (regional governments, regional development agencies, etc.) will be listed together with project partners' expertise in order to complement the funding opportunities of cascade funding with further assistance to SMEs.	NTUA LAKE PLASTIRA, UNIBAS, CWP, IRTA, ICRA, WE&B	COO BEN	NO
T3.3	Launch of the funding calls, evaluation and selection of the funded sub-projects [M9-M12 & M19-M24]	A communication plan will be designed and launched, considering the different typologies of SMEs and end-users. The communication actions will be done from 2 months before the first call until the launching of the second call. The funding calls will be launched and the evaluation of the applicant sub-projects through the developed methodology will be carried out.	NTUA LAKE PLASTIRA, UNIBAS, CWP, IRTA, ICRA, WE&B	COO BEN	NO
T3.4	Implementation and monitoring of the FSTP scheme [M10-M36]	For each granted sub-project, a monitoring technician of the same country will be appointed. They will be in charge of the legal procedures, follow up of the projects execution and validate the accomplishment of the KPIs. A follow-up of the sub-project implementation and reaching of the technical aims and KPIs will be done by the monitoring technicians.	NTUA LAKE PLASTIRA, UNIBAS, CWP, IRTA, ICRA, WE&B	COO BEN	NO
T3.5	Assessment of the investment portfolio impacts and outputs [M13-M36]	The results of the two open calls will be evaluated in terms of impacts, support to SMEs and capability of scaling up and replicating the projects. The monitoring technicians will maintain a final meeting with each funded SME to provide support for the afterlife plan of the project. Each	NTUA LAKE PLASTIRA,	COO BEN	NO

		monitoring technician will determine potential collaborations for the SMEs with quadruple helix stakeholders to access interregional and private investments (WP4) for the scaling up and replication of each sub-project.			UNIBAS, CWP, IRTA, ICRA, WE&B			
Milestones and deliverables (outputs/outcomes)								
Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Description	Due Date		Means of Verification	
MS4	1 st call launched	3	NTUA	Number of funded sub-projects in the first open call.	M12		At least 20-30 sub-projects funded (described in D3.2).	
MS5	2 nd call launched	3	NTUA	Number of funded sub-projects in the second open call.	M24		At least 20-30 sub-projects funded (described in D3.3).	
MS6	Funded sub-projects finalized	3	NTUA	Total number of funded projects that have been successfully concluded	M34		All the funded sub-projects (40-60) sucessfully developed (described in D3.4).	
Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type		Dissemination Level	Due Date	Description
D3.1	Description of the FSTP scheme and pipeline	3	NTUA	R		PU	M6	Guide for the SMEs to access the FSTP scheme. Will include the application scope, steps and timeline, required legal documents and description of evaluation process. Digital EN.
D3.2	Evaluation results	3	NTUA	R		EU-R	M15	Report of the results of the

	for the 1 st open call						sub-projects' evaluation of the 1st call and level of accomplishment of its KPIs. Digital - EN.
D3.3	Evaluation results for the 2 nd open call	3	NTUA	R	EU-R	M26	Report of the results of the sub-projects' evaluation of the 2nd call and level of accomplishment of its KPIs. Digital - EN.
D3.4	Report on the implementation of the business investments belonging to the portfolio	3	WE&B	R	PU	M36	Mandatory report on the implementation of the sub-projects in the portfolio, including impacts, perspective for scale-up, potential partners and end-users and replication. Digital - EN.

Estimated budget — Resources

See detailed budget table (annex 1 to Part B).

Work Package 4

Work Package 4: Interregional Investment and Business Innovation through Smart Specialisation					
Duration:		M1 - M36	Lead Beneficiary:		WE&B
Objectives					
Main Objective: The overarching goal of WP4 is to connect the quadruple helix stakeholders to establish efficient and sustainable water management practices across the Mediterranean region through interregional investments. The WP will bolster the innovation ecosystem within participating regions, with an emphasis on potential replication, while concurrently providing support for local entrepreneurship. Furthermore, it endeavors to facilitate the seamless flow of knowledge transfer among the quadruple helix stakeholders. Sub-Objectives: 1. Enhance Interregional Investment through Quadruple Helix Collaboration: The WP will map and analyse the stakeholders to foster collaboration among academia, industry, government, and civil society actors to ensure sustainable water management practices are developed and implemented effectively, particularly within the agrifood sector. Social Network Analysis will be performed to develop and maintain an innovative stakeholder mapping that will facilitates interaction and knowledge exchange (WP5) among stakeholders, bridging the gap between the supply and demand sides of sustainable water management. 2. Mobilizing Private Investment for Sustainability: The WP will establish a Community of Practice focused on green tech investment funds, encouraging private investment in sustainable water management practices, particularly within the agrifood sector. 3. Policy Alignment and Cohesion: WP4 will review, analyse and promote the harmonization of regional policies and EU priorities, thus facilitating greater collaboration among regions in the pursuit of sustainable water management objectives.					
Activities and division of work (WP description)					
Task No	Task Name	Description	Participants		In-kind Contributions and Subcontracting
			Name	Role	
T4.1	Stakeholder Analysis and Network Mapping for Sustainable Water Management [M1-M12]	Through an innovative approach, this task will develop Social Network Analysis (SNA) integrated with Fuzzy Cognitive Mapping (FCM) to map and analyze the power, influence, and networking ability of quadruple helix stakeholders, overlapped with their opinions and beliefs related to aspects such as investment opportunities, policies, water, and agrifood technologies, among others, with the goal of achieving sustainable water management, particularly in the agrifood sector across the Mediterranean. We will do this through first working with the project partners to develop a baseline stakeholder list and then through a snowballing process we will run stakeholder engagement sessions in order to conduct a comprehensive mapping and analysis to ensure we capture the quadruple helix stakeholders from academia, industry, government, and civil society.	WE&B	COO	NO

		We will identify key stakeholders who have the most influence and networking capacity. Further we will collect data on their relationships, collaborations, and interactions. Through utilising fuzzy cognitive mapping to capture stakeholders' opinions and mental models we will be able to relate different policies opinions, technology needs and investment requirements to each stakeholder type. The integration in this regard will aid in visualizing these connections on an interactive stakeholder map.			
T4.2	Creation of an Interregional Innovative Ecosystem Platform for Green Tech Investment Funds [M10-M25]	Task 2 aims to create a dynamic Interregional Innovative Ecosystem Platform dedicated to mobilizing private investment in green tech funds and driving sustainable innovation in water management for the agrifood sector across the Mediterranean. Leveraging the technique of Communities of Practice (CoP), this initiative will establish a collaborative environment, welcoming private investors, venture capitalists, and fund managers as active participants. The CoP will facilitate regular meetings and workshops, serving as a platform for sharing best practices, identifying investment opportunities, and showcasing success stories related to sustainable water management technologies. Moreover, this task will lead the development of persuasive pitch decks and comprehensive investment guides designed to attract private investments in environmentally sustainable water management practices specifically tailored to the needs of the agrifood sector. Through these efforts, Task 2 will play a pivotal role in mobilizing private investment and promoting the adoption of eco-friendly water management solutions, fostering sustainability within the agrifood industry across the Mediterranean region. All this task could be a first step as a community of water technological solutions or the seed of a new water cluster in some of the regions less developed.	WE&B	COO	NO
T4.3	Develop a Policy Cohesion Framework [M25-M36]	Task 3 is dedicated to the development of a comprehensive Policy Cohesion Framework designed to ensure the alignment of regional policies with EU priorities, fostering cohesion and collaboration across regions within the sustainable water management sector, with a specific focus on the agrifood sector. Leveraging the innovative technique of Fuzzy Cognitive Mapping, this task seeks to identify critical policy areas requiring harmonization across regions. Through in-depth analysis of existing policies, the framework will generate recommendations for necessary adjustments aimed at supporting interregional innovation investments in sustainable water management, particularly geared toward agrifood production. Additionally, Task 2 will take the lead in facilitating crucial discussions among regional policymakers and stakeholders, providing a platform for dialogue and consensus-building to enable the effective implementation of cohesive policies or the creation of new policies that have been successful in other regions. This initiative serves as a pivotal	WE&B	COO	NO

		step toward realizing harmonious and sustainable water management practices within the agrifood sector across the Mediterranean region.						
Milestones and deliverables (outputs/outcomes)								
Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Description		Due Date	Means of Verification	
MS7	Launch of the Interregional Innovative Ecosystem Platform	4	WE&B	The successful launch of the interregional Innovative Ecosystem Platform, marking the active engagement of stakeholders in knowledge exchange and collaborative efforts for investments in sustainable water management in the agrifood sector.		M20	Report	
Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date	Description	
D4.1	Stakeholder Network and Fuzzy Cognitive Map	4	WE&B	R	PU	18	A comprehensive visual representation of the stakeholder network, highlighting key actors, their connections, and influence within the sustainable water management sector in the agrifood industry across the Mediterranean, coupled with an analytical report detailing the stakeholder opinions and mental models regarding policies, technologies, investments needs and decisions related to sustainable water - pdf – EN. management, synthesized through fuzzy cognitive mapping that is overlapped with social network analysis.	
D4.2	Policy Cohesion Framework and Interregional Collaboration Platform	4	WE&B	R	PU	36	Policy alignment recommendations, formed of the Policy Cohesion Framework, that brings together innovative policies that fosters collaboration and	

							cohesion for investments into sustainable water management among the Med regions - pdf - EN.
D4.3	List of remaining bottlenecks	4	WE&B	R	SEN	36	Mandatory deliverable. At the end of project implementation, the main difficulties, lessons learnt and bottlenecks will be summarised in a report – pdf - EN

Estimated budget — Resources

See detailed budget table (annex 1 to Part B).

Work Package 5

Work Package 5: Communication, dissemination and replication

Duration:

M1 –
M36

Lead Beneficiary:

UNIBAS

Objectives

Main Objective:

Create a clear communication and dissemination plan to facilitate the organisation of the activities, the channels that will be used to communicate and to generate awareness and impact on the project. It will provide also the rules to manage the corporative communication in the right way. WP5 aims to attain a maximum post-project uptake of the water management technologies and to accelerate their path to the agrifood sector market. Moreover, replication and transferability will be assessed in order to reach other EU markets in other regions.

Subobjectives:

- To set up a Communication and Dissemination Work Plan to properly address each type of stakeholders with tailored messages and information.
- To spread different specific information among the target region stakeholders to engage them in the project.

- Reinforce the Communication activities established in the WP3 to involve the maximum number of SMEs from the agrifood & sustainable and circular water management sector in the project. - Identify different target markets for replication of the proposed solutions in different EU regions and countries (especially less-developed countries in the Euro Mediterranean) and exploiting the innovative technologies through activities aimed at the promotion of their market uptake in the agrifood sector.					
Activities and division of work (WP description)					
Task No	Task Name	Description	Participants		In-kind Contributions and Subcontracting
			Name	Role	
T5.1	Communication and Dissemination Work Plan [M1-M4]	During the first 4 months of the project a communication and dissemination plan will be created to provide the consortium with guidelines about the different communication actions and channels. The plan will include the logo of the project and the format of the internal and external communication documents, and it will set the rules and responsibilities of project partners, the available resources and tools and planned activities, the target groups definition and identification and a list of events to target. The communication plan may be re-oriented depending on the actions that have been undertaken and what is still missing. A sufficient flexibility is indeed required to allow activities to adapt to project developments.	UNIBAS All	COO BEN	NO
T5.2	Dissemination materials and social media profiles [M1 – M36]	With the aim of showcasing the activities and outcomes of the project, several dissemination and communication materials will be designed following the project visual identity created in T5.1: Roll-up, Leaflets, Newsletter, Video, Social Media profiles on X and LinkedIn. Dedicated AquaLoops4Med sections on project partners' websites will be created to showcase the project aims, partners, activities and results. Special attention will be paid in advertising the project Open calls (WP3) to ensure maximised participation. All project partners will contribute to disseminating information of the project on their social media profiles.	UNIBAS All	COO	NO
T5.3	Events and workshops organisation / participation. [M7-M36]	Workshops will be organised along the duration of the project. Three initial workshops will be held in each of the participating countries to assess region-specific characteristics that could affect the implementation of water reclamation and reuse technologies in the agri-food sector. During the project specific workshops will also be held to inform about open calls for cascade funding (WP3). Project partners will participate to thematic workshops, events and fairs to present the project and its opportunities and to set up dialogue with relevant stakeholders, including projects/initiatives. The final event of the project will be organised by CWP with the support of all the consortium gathering beneficiaries SMEs from the 4 participating regions, key EU Commission members, private investors, end users from the agrifood sector and all	UNIBAS All	COO BEN	NO

		AquaLoops4Med partners. During the event, projects supported by AquaLoops4Med will be showcased to create opportunities for the beneficiaries to meet potential partners to further develop their innovative technologies, services or solutions. A tentative schedule of this event will be as follows: - Keynote speakers from EU commission and end-users - Showcase the SMEs projects (pitch sessions) - B2B meetings between the participants All partners will actively participate in dissemination activities in their respective networks and focus areas and will report to WP coordinator for monitoring purposes.			
T5.4	Replication, transferability and exploitation [M28-M36]	A replication, transferability and exploitation strategy will be developed to define the concrete actions that will be implemented at the end of the project to sustain the activities and/or to continue to exploit the results of the project and replicate them in another potential sites. It will also aim to specify whether other funding means will be made available for these concrete actions. The project will identify 10 regions to transfer all the results of the project by carrying out communication activities, congresses, fairs, events, etc. At less 5 of these regions will be less developed or transition regions.	CWP All	COO BEN	NO

Milestones and deliverables (outputs/outcomes)							
Milestone No (continuous numbering not linked to WP)	Milestone Name	Work Package No	Lead Beneficiary	Description	Due Date (month number)		Means of Verification
MS8	Social media created	5	CWP	Creation of dissemination channels on LinkedIn and X	M4		Social media profiles of AquaLoops4Med available online
Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date	Description
D5.1	Full dissemination plan	5	UNIBAS	R	SEN	M8	Mandatory deliverable on

							how to organise dissemination and exploitation activities - pdf - EN
D5.2	Communication and dissemination activities report	5	UNIBAS	R	SEN	M36	Document including all communication and dissemination activities of the project – pdf - EN
D5.3	Replication and exploitation plan plan	5	CWP	R	PU	M36	Assessment of replication and exploitation activities – pdf - EN

Estimated budget — Resources

See detailed budget table (annex 1 to Part B).

Subcontracting

Subcontracting

Give details on subcontracted project tasks (if any) and explain the reasons why (as opposed to direct implementation by the Beneficiaries/Affiliated Entities).

Subcontracting — Subcontracting means the implementation of ‘action tasks’, i.e. specific tasks which are part of the EU grant and are described in Annex 1 of the Grant Agreement.

Note: Subcontracting concerns the outsourcing of a part of the project to a party outside the consortium. It is not simply about purchasing goods or services. We normally expect that the participants have sufficient operational capacity to implement the project activities themselves. Subcontracting should therefore be exceptional.

Include only subcontracts that comply with the rules (i.e. best value for money and no conflict of interest; no subcontracting of coordinator tasks).

Work Package No	Subcontract No (continuous numbering linked to WP)	Subcontract Name (subcontracted action tasks)	Description (including task number and BEN/AE to which it is linked)	Estimated Costs (EUR)	Justification (why is subcontracting necessary?)	Best-Value-for-Money (how do you intend to ensure it?)
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WP2	S1.1	Transport company	Transport service of the Demonstrator from Barcelona to Thessaly. T2.3 -Design and implementation of an AnMBR+SSF+pN/DN demonstrator for high-COD wastewater treatment. BEN: AERIS	30,000	AERIS does not have the necessary transport to bring the demonstrator gins to Thessaly	Compare multiple offers
WP2	S1.2	Brienza Michele agri-cultural company Tomasiello agri-cultural company	Wastewater from dairy activities & Demosite T2.5 - Demonstrators operation. BEN: BOINNOVA	20,000	Subcontractors will provide both the serum and the surface for the demo site; it is necessary to provide a reimbursement for their activity, management costs and the personnel involved that they will dedicate to the project.	Prior contact
WP2	S1.3	Expert sampling company	T2.6 - Reclaimed water application in demonstration plots for agricultural production and test a novel low-cost fully-automated fertirrigation system, monitoring and risk assessment. BEN: UNIBAS	10,000	The beneficiary needs an external company that can facilitate sample collection from experimental field & data analysis (metagenomics, diversity)	Compare multiple offers
WP2	S1.4	Expert sampling company	T2.6 - Reclaimed water application in demonstration plots for agricultural production and test a novel low-cost fully-automated fertirrigation system, monitoring and risk assessment. BEN: ARPAB	10,000	The beneficiary needs an external company that can facilitate sample collection from experimental field & data analysis (metagenomics, diversity)	Compare multiple offers
Other issues: <i>If subcontracting for the project goes beyond 30% of the total eligible</i>			Insert text			

<i>costs, give specific reasons.</i>	
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Timetable

ACTIVITY	year 1				year 2				year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
WP1. Project management and coordination												
Task 1.1- Technical coordination and reporting												
Task 1.2- Financial and administrative coordination and reporting												
WP2. Demonstration collaborative activities												
Task 2.1- Design and implementation of an innovative rainwater harvesting hydro-system												
Task 2.2- Co-substrates selection and pre-treatment conditions assessment												
Task 2.3- Design and implementation of an AnMBR+SSF+pN/DN demonstrator for high-COD wastewater treatment												
Task 2.4- Design and implementation of a demonstrator based on algal and filtration processes for low-COD wastewater treatment												
Task 2.5- Demonstrators operation												
Task 2.6- Reclaimed water application in demonstration plots for agricultural production and test a novel low-cost fully-automated fertirrigation system, monitoring and risk assessment												
Task 2.7- Elaboration of business and investment plans and market readiness assessment												
WP3. Pilot Interregional innovation investments												
Task 3.1- Design of the open calls, evaluation and elaboration of material and contents.												
Task 3.2- Identification of further services for SMEs												
Task 3.3- Launch of the funding calls, evaluation and selection of the funded sub-projects												
Task 3.4- Implementation and monitoring of the FSTP scheme.												
Task 3.5- Assessment of the FSTP scheme impacts and outputs.												
WP4. Interregional Investment and Business Innovation through Smart Specialisation												
Task 4.1- Stakeholder Analysis and Network Mapping for Sustainable Water Management												
Task 4.2- Creation of an Interregional Innovative Ecosystem Platform for Green Tech Investment Funds												
Task 4.3- Develop a Policy Cohesion Framework												
WP5. Communication, dissemination and replication												
Task 5.1- Communication and Dissemination Work Plan												
Task 5.2- Dissemination materials and social media profiles												
Task 5.3- Events and workshops organisation / participation.												
Task 5.4- Replication, transferability and exploitation												

#@ETH-ICS-EI@#

6. OTHER

6.1 Ethics

Ethics
Not applicable.

#SETH-ICS-EIS# #@SEC-URI-SU@#

6.2 Security

Security
Not applicable.

#SSEC-URI-SUS# #@DEC-LAR-DL@#

7. DECLARATIONS

Double funding	
Information concerning other EU grants for this project  Please note that there is a strict prohibition of double funding from the EU budget (except under EU Synergies actions).	
We confirm that to our best knowledge neither the project as a whole nor any parts of it have benefitted from any other EU grant (including EU funding managed by authorities in EU Member States or other funding bodies, e.g. EU Regional Funds, EU Agricultural Funds, etc). If NO, explain and provide details.	
We confirm that to our best knowledge neither the project as a whole nor any parts of it are (nor will be) submitted for any other EU grant (including EU funding managed by authorities in EU Member States or other funding bodies, e.g. EU Regional Funds, EU Agricultural Funds, etc). If NO, explain and provide details.	

Financial support to third parties (if applicable) <i>If in your project the maximum amount per third party will be more than the threshold amount set in the Call document, justify and explain why the higher amount is necessary in order to fulfil your project's objectives.</i>
Insert text

ANNEXES

LIST OF ANNEXES

Standard

Detailed budget table (annex 1 to Part B)
CVs (annex 2 to Part B)
Annual activity reports (annex 3 to Part B)
List of previous projects (annex 4 to Part B)

Special

Other annexes (annex X to Part B)

LIST OF PREVIOUS PROJECTS

List of previous projects					
Participant	Project Reference No and Title, Funding programme				Website (if any)
[name]					
[name]					

HISTORY OF CHANGES		
VERSION	PUBLICATION DATE	CHANGE
1.0	15.11.2021	Initial version (new MFF).
2.0	01.06.2022	Consolidation, formatting and layout changes. Tags added.