ARSINOE
CLIMATE RESILIENT-REGIONS THROUGH SYSTEMIC SOLUTIONS AND INNOVATIONS

Initial Roadmap and monitoring plan for the activities and actions at the Case Studies

Deliverable 6.1

WP6: Case studies: Coordination and implementation activities

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EXECUTIVE SUMMARY

This document presents the initial planning, coordination and monitoring activities for ARSINOE, which took place during the first four months of the project (M1-M4), as well as the actions planned for the next months, related to the implementation of the System Innovation Approach (SIA) at the nine Case Studies (CS)s of the project. It also includes an initial roadmap for the implementation of ARSINOE activities at the CS, as well as an initial monitoring plan.

This version (V1) shows the status of Deliverable 6.1 on this specific date of submission. Later in the project, newer (updated) versions of this document will be submitted (M18-M36-M48).

It is practically a living document, continually updated, reporting (a) an updating description of each CS; (b) the stakeholder engagement activities (meetings, actions, etc) within the CSs that are contributing to particular Work Packages (WP)s (especially WP2); (c) the organisation of preparatory actions for the implementation of stakeholder participation and modelling activities (WP3, WP4) for the SIA and the technical activities (e.g. modelling); (d) the organisation of a monitoring mechanism and plan for all these activities, for potential amendment actions (e.g. for delayed work, lack of communication with stakeholders, lack of data, pandemic related issues, unforeseen emergencies etc.), which need to be reported to WP1 (management).

During the first months of the project, within Task 6.1, ARSINOE managed to establish a regular communication mechanism among the CSs and key partners from the other WPs with weekly meetings, coordination for ensuring the active participation of the CSs partners in the implementation of SIA and in key technical decisions (e.g. the climate projection scenarios selected to be applied across the CSs), as well as the compilation of the long list of stakeholders for all the CSs, with guidance and instructions from WP2. The latter is also a Milestone for the project (MS2), which has been achieved. It is also an essential preparatory action for Task 6.2, due to start in M5.

In the next few months, emphasis will be given in the compilation of conceptual graphs for the technical activities planned for each CS, to arrive in detailed and tailor-made implementation plans for each CS (within Task 6.3), which is due to start in M8. Beyond this stage, detailed plans (tailor-made) for each CS will be developed and included in the next version of this deliverable.

The document includes also two Appendices presenting detailed minutes of all the meetings that took place in this period within Task 6.1 (Appendix A), as well as the long lists of stakeholders for all the CSs (Appendix B).

This Deliverable, in its final version (M48) aims to provide detailed information and experience-based knowledge from the (diverse) Case Studies, which is expected to contribute to regional decisions and EU policies for the implementation of actions leading to enhanced resilience to climate change at regional level.

Related Deliverables: Deliverable 2.1 (M12) for Appendix B and Deliverable 3.4 (M12) for the climate projections and scenarios.

1.0 INTRODUCTION

1.1. Scope of this deliverable

There are nine diverse and complementary Case Studies (CS)s in ARSINOE. A number of activities and actions need to take place, implemented specifically for each CS, but also horizontally across them. These are covered in Work Package (WP) 6. The overall objectives of this WP are to:

(i) develop a roadmap of actions for all the CSs;

(ii) coordinate the activities and actions in all the Case Studies;

(iii) guide and monitor the implementation of the stakeholder engagement, the resilience assessment and the innovation packages for at the CSs throughout the project;

(iv) develop and monitor Key Performance Indicators (KPI)s;

(v) develop and coordinate the validation procedures for the innovation packages in all the CSs;

(vi) provide evidence-based knowledge and recommendations at EU level.

WP6 is structured in five Tasks, encompassing all the above objectives. **Task 6.1** is the only task starting immediately in Month 1 (M1) from the beginning of the project. It is also active until the end of the project (M48). This task is developing a roadmap to foster, guide and monitor the collaboration and coordination of activities for each CS, for the implementation of the Systems Innovation Approach (SIA) concept across all the CS. More importantly, Task 6.1 needs to assist and guide the implementation of the activities related to all the WPs linked to the CSs, mapping all necessary activities and timeline for implementation.

The initial roadmap and monitoring framework for the above goals has been developed in the first four months of the projects, taking into account the particularities of each CS and the needs and objectives of each WP. These are reflected and detailed in the current deliverable (D6.1). It is very early in the project to have a realistic full roadmap and timeline of activities till the end of the project. Consequently **Deliverable 6.1**, referring to activities of **Task 6.1**, is considered as a **living document,** which is placed online in the common folder of the project, updated every week, updated continually throughout the project, to account for the project development, achievements and emerging issues related to the CS.

This version submitted on January 31, 2022 (M4) shows the status of D6.1 on this specific date of submission. Later in the project, newer (updated) versions of this document will be submitted (M18-M36-M48). Thus, this first version of the deliverable focuses mostly on the actions and plans for the first months of the project, up to M8. Any precise further projections for the subsequent years would be not realistic enough at the moment, as explained in Section 4 (M4). The current deliverable, as a living document, is reporting:

(a) an updated description of each CS;

(b) the stakeholder engagement activities (meetings, actions etc) within the CSs that are contributing to particular WPs (especially WP2);

(c) the organisation of preparatory actions for the implementation of stakeholder participation and modelling activities (WP3, WP4) for the System Innovation Approach (SIA);

(d) the organisation of a monitoring mechanism and plan for all these activities for potential amendment actions (e.g. for delayed work, lack of communication with stakeholders, lack of data, pandemic related issues, unforeseen emergencies etc.), which need to be reported to WP1 (management).

Within later updates (M18), this Deliverable will also report on the organisation, coordination and reporting of specific KPIs developed for each CS (Task 6.2), implementation actions for the SIA (Task 6.3)

and the development of the innovation packages (Task 6.4). However, all these tasks and activities have not yet started at the time of the submission of this deliverable.

1.2. Structure of this document

The deliverable is organised as follows: an overview of all the CS is included in Chapter 2, followed by the details on the organisation, planning and monitoring of the activities up to M4 (Chapter 3). Chapter 4 presents the conclusions and next steps, as well as the initial roadmap and monitoring activities. The deliverable is accompanied by two appendices: Appendix A includes all the detailed minutes and actions every week from the start of the project, while Appendix B includes the long stakeholder list for all the CS, which also consists of a Milestone for the project (Milestone MS2).

2.0 CASE STUDIES

There are nine Case Studies (CS) in this project. In terms of geographical dispersion (Figure 2.1), the CS presented below cover a vast area of the European Continent, ranging from Spain to the Black Sea and from Greece to Denmark. In terms of systems complexity, they also cover a wide range including health, energy, transport, forestry, fisheries, farmland, and wetlands, which face challenges such as biodiversity loss, floods, water scarcity, and heatwaves in escalating severity depending on the region. The main challenges and key thematic issues, related to resilience to climate change, addressed for each case study are shown in Figure 2.1.

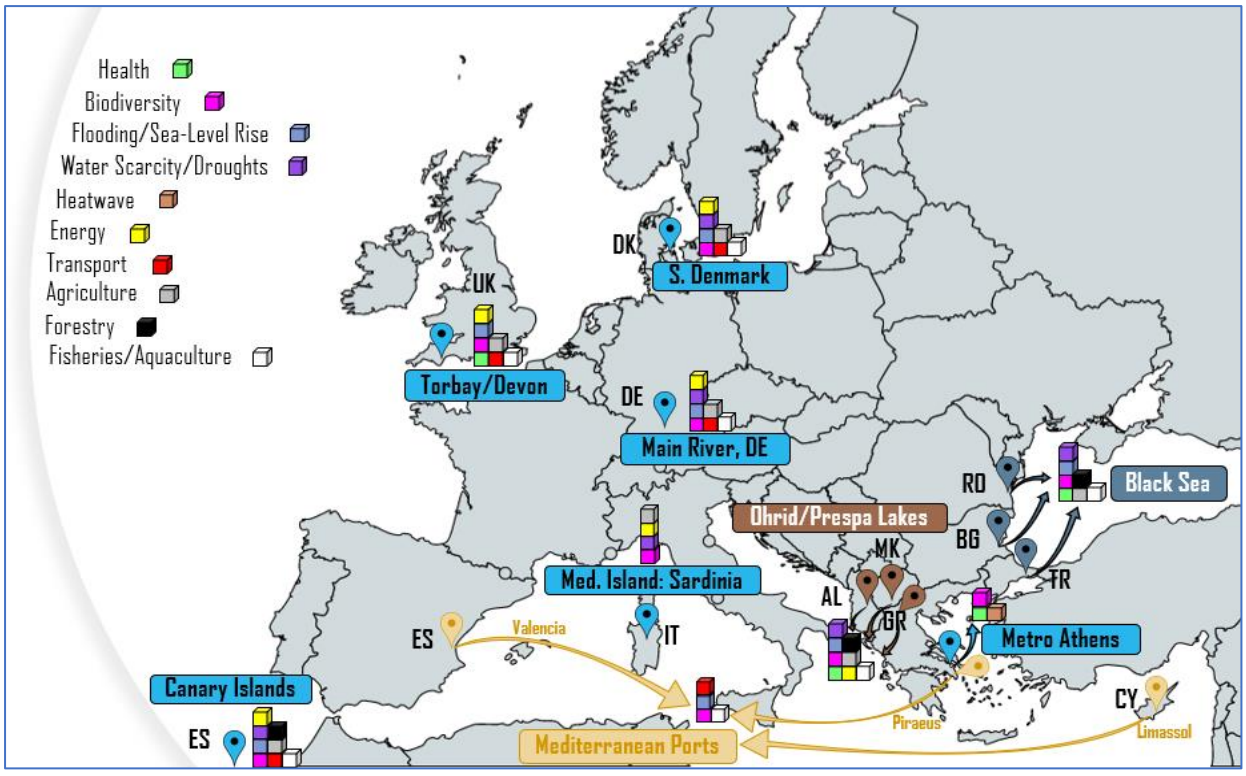

Figure 2.1: Location and key thematic issues/systems addressed by the CS

Figure 2.2 shows schematically the methodological approach and the research areas to be followed in ARSINOE at a higher and comprehensive level, demonstrating the main methodological approach for the project overall. WP6 is dedicated to coordinating, planning, assisting and monitoring the implementation of this approach for the CS.

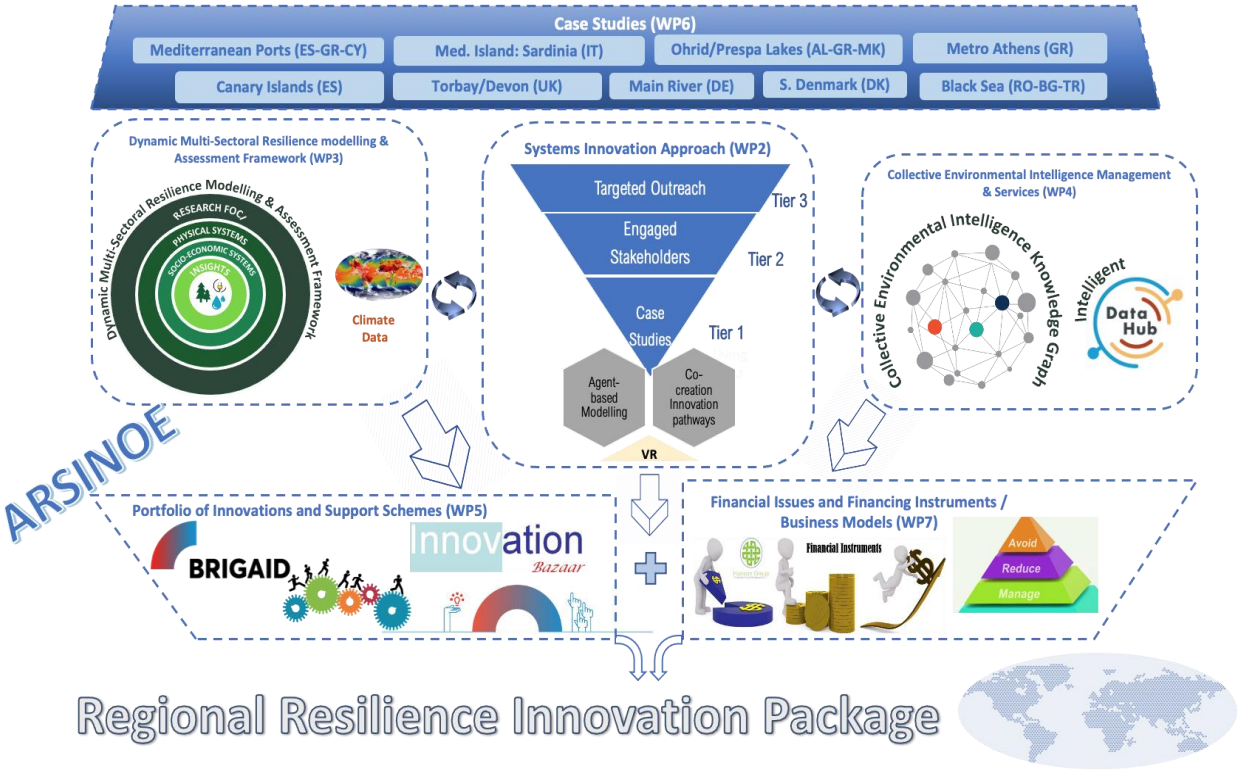

Figure 2.2: Methodological approach followed in the ARSINOE project for the CS

A concise description of the content and challenges for each CS follows. It should be pointed out that the description and ambitions for CS#5 (Canary Islands) has been modified, compared to the initial scope, to take into account the eruption of the Cumbre Vieja volcano on La Palma (September - December 2021) and it's impact on the groundwater, especially with relation (in addition) to resilience to climate change challenges.

CS1: Greening the Athens metropolitan area	Lead Partner: UTH

Key systems addressed: The key systems addressed in this case study are **environment, health and infrastructure.** In particular, the Athens municipality has a strategic focus to **enhance green infrastructure** and **support urban biodiversity**, in order to best shield itself from, adapt to, and build resilience to Climate Change challenges (extreme heat and flash floods). Considering that Athens faces chronic urban growth issues that amplify climate change impacts, the above key systems are addressed and are expected to deliver several benefits in terms of the resilience of the city.

Short description: Athens is the capital and largest city of Greece. Athens Metropolitan Area (AMA) has 40 municipalities, 35 of which are referred to as Greater Athens municipalities and more than 40% of the national GDP is produced therein. ARSINOE's innovation package introduces a holistic approach to materialize the Athens Resilience Strategy, which was launched in 2017, including the city's **Climate Adaptation Action plan**. The Municipality of Athens is currently finalizing, with the support of C40, an update of its Climate Action Plan in accordance to its commitments to the Paris Agreement and the **Global Covenant of Mayors**. Initially, it will compile existing data and combine it with new novel observational and modelling platforms (e.g., satellite data, Copernicus Services, Citizen Science (CSc)). This will allow for mapping vulnerabilities across different activity sectors of AMA and for identifying **hot spots** and their respective drivers (e.g., heat, flood, soil imperviousness, inadequate housing). Appropriate indicators will be utilized and a novel methodology will be developed to move from the vulnerability indicators, to realistic measures and the options and means to achieve these. The package will thus include not only **monetization** of costs but also a thorough **Cost-Benefit Analysis** that takes

into account all types of impacts, benefits and the cost of doing nothing. Additionally, **financial instruments** will be mapped, so as to provide optimal options for investment (WP7) and facilitate an efficient and timely decision chain, as well as **sustainability option**s through connection with **smart and resilient city practices**. Along this chain of steps, equally important is an organized effort to increase the active participation of and to train the new generation of citizens, and ARSINOE adopts three means: citizen science, **youth assemblies** to simulate **local Green Deal** processes and **curation of green practices**, and innovation and science into educational curricula. The main components of this process are detailed below:

Climate change base layer and Urban Heat Island (UHI): Climatic indicators relevant to the urban environment and human health will be calculated. Such indicators indicatively include number of days classified according to temperature and humidity, discomfort indices, etc. using state of the art RCM/GCM pairs developed within the EURO-CORDEX initiative. Downscaling techniques will be implemented, in order to obtain the appropriate climatic data for Athens, at a higher horizontal resolution (typically in the order of 1-3km). To this aim, a high-resolution gridded dataset for temperatures and precipitation will be produced, using advanced interpolating methodologies [38, 39]. The UHI will be mapped, as it has also been related to human health (and COVID [40]) creating problems in sensitive populations, as it can increase the magnitude and duration of heatwaves in dense urban environments and thus lead to higher mortality rates. The surface UHI intensity will be assessed also in connection with the green infrastructure of the city.

Biodiversity: In order to produce a baseline assessment of urban biodiversity and build on its enhancement, a crucial factor for designing Climate Adaptation policies and NBSs, ARSINOE will exploit Citizen Science (CSc), mainly through partner CSIC—experienced in many projects (CITICLOPS, COS4CLOUD). ARSINOE will develop a Citizen Observatory (CO), a community-based monitoring and information system that will build on novel observation applications. Species occurrence data, photographs, videos, audio recordings, images, soundscape recordings etc. will be collected via personal devices (smartphones, tablets, IT sensors), to complement a CO of urban biodiversity for Athens. Further, CSc activities will be organized with the purpose of recording, geolocating and classifying trees in AMA, thus enriching the CO with **a robust inventory** and the systematic monitoring of all **urban trees**. This invaluable CSc input will be pursued via novel and efficient participatory methodologies like bio-blitzes and competitions among neighborhoods or cities with the use of the Citizen Science platform, provided by CSIC; similar efforts have been very successful in gathering extensive biodiversity datasets.

Green infrastructure: Mapping urban biodiversity elements in Athens will enable the identification of hotspots of **Urban Green Spaces (UGSs)**. In order to evaluate the **functionality** of Green Spaces in Athens, two parameters are going to be investigated: i) **accessibility:** the concept of the 15-minute city will be utilized to ensure that all citizens meet their needs in terms of having access to parks and open-green spaces on foot or by bike, within 15 minutes, highlighting the comparative advantages with respect to traditional **urban mobility** means (i.e., cars, buses). This is aligned with ensuring social inclusion and connectivity of neighbourhoods, while at the same time improving urban biodiversity by addressing ecosystems' fragmentation and iii) **biodiversity conservation:** the assessment of the connectivity of protected areas in AMA will pave the ground for a coherent nature network, fully complying with the **EU Biodiversity Strategy for 2030**. The assessment will also use Earth Observation derived urban metrics. Overall, according to the Urban Green Spaces functionality assessment, the effectiveness of existing **NBSs** will be evaluated and new NBSs will be proposed, where needed. The identification of **UGS hot spots** will form the **City Green Infrastructure** as a dynamic tool to be included into city strategy to put urban biodiversity into practice, and to quantify scenario-based health co-benefits related to air quality (city scale AQ modelling at 100x100 m^2).

Vulnerability assessment: The climate change risk assessment to human health will be based on the relevant conceptual framework presented within the 5th Assessment Report (AR5) of the IPCC.

According to the latter, risk is considered to result from the interaction of climatic hazard, vulnerability and exposure of humans, ecosystems, economic, social or cultural assets. In order to depict the relationships between hazard, exposure and vulnerability, the concept of Impact Chains will be used. This methodology can be used for both high-level identification of key risks and more in-depth analysis of specific risks and adaptation strategies. The results will be presented through geospatial maps depicting the hot spots within the AMA, where appropriate green infrastructure measures will be proposed. A valuation of the state-of-the art adaptation options for increasing the resilience of municipalities to climate change will be made, categorizing them according to their type, i.e., grey/green infrastructure and soft measures. The adaptation options will be evaluated with multi-criteria analysis, assessing effectiveness, contribution to climate change adaptation, technical and economic viability and public acceptance.

Youth Assemblies and Training for Trainers (T4T): ARSINOE will develop the organization of **youth assembly simulations**, engaging secondary and tertiary education students, teachers and municipal employees for **the deliberation and drafting of local and/or regional Green Deals**. The specially designed local and/or regional simulations will foster dialogue and social consensus, offering participants the chance to gain first-hand experience on participatory decision-making processes, which can be used as innovative non-formal education tools, and eventually, offer practical bottom-up green solutions to identified problems, creating a spill-over effect. The preparatory work will also involve local authorities, with methodological advice provided interactively by the Hellenic Forum for Sustainable Development (ELFOVA) established by partner ELIAMEP. During the simulations, secondary and tertiary education students, and teachers and municipal employees will shape their communities' Green Deals, after having participated in other interactive activities, such as measuring their schools' carbon footprints, identifying local environmental problems and vulnerabilities, etc. The results can be presented by the students to their local communities as a contribution, encouragement, and commitment to action. Moreover, secondary teachers will have the chance to attend the T4T seminars, which will complement and maximize the project's impact. During the T4T, secondary (teachers) and tertiary (university professors) education trainers will be offered the chance to attend these tailor-made seminars and gain thorough knowledge on how to organise simulations on their own, hence acting as knowledge multipliers. Eventually, the Youth Assembly Simulations and T4T beneficiaries will (be able to) act as multipliers for their respective communities. As proper preparation of the participants is considered crucial for achieving high-level performance and active involvement, attention will be given to the creation of a Co-Design Local Green Deals Toolkit. The Co-Design Local Green Deals Toolkit will contain practical, step-by-step instructions on how to successfully organise simulations, as well as detailed guidelines on how to prepare syllabi, study guides and reference material that best cover the academic and scientific needs of the participants. The impact will be maximized by making this toolkit available online to all case studies and interested stakeholders, and eventually to the wider public, thus granting access to any other interested parties (students and trainers alike) that will not participate in the activities, allowing them to learn more on such participatory processes and innovative teaching methods.

Education, Outreach and Innovation through Green Cross International: To complement the work of Youth Assemblies and increase the active participation of and to train the new generation of citizens, the Athens affiliate of Green Cross International (GCI), established as a member of partner's ATHENA Centre Sustainable Development Unit, will get involved and will lead a series of innovative education and outreach activities for the youth. In Athens, GCI is focused on accelerating clean, smart energy with the mission to foster a secure, equitable and sustainable energy future for the world. Specific to Greece, GCI is co-developing solutions through dialogue, mediation and co-operation with world-class international non-profit and for-profit partners, including: EarthFund Global, EarthXTV, Solar Head of State, EarthIndex Inc., EIT-Climate KIC – Silicon Valley. Through these collaborations, GCI Athens will provide the program **EarthOdyssey**—an immersive, virtual educational experience in partnership with

schools in the US and other countries with virtual immersion, art, field trips, modules and videos, with the goal to bring sustainable & smart energy curriculum to schools in Greece. The pilot for ARSINOE will be deployed at Athens College. Once the pilot program has been successfully implemented, then this curriculum can be replicated in schools throughout AMA. Clean energy curriculum will be created through partnerships with Global Green USA, Grades of Green, and Wyland Foundation. Empowering curriculum to be brought forward to K-12 level students will be in the following areas: Climate Solutions Campaign, Air Quality Campaign, Toxins, Water, Waste, Clean renewable energy, Hydropower and Tidal Energy, Desalination, and Journalism through the Lens of Youth.

Data sources, including models available **Climate:** In order to calculate climatic indicators, data through the C3S Climate Data Store for the period 1950-2100 will be used. **UHI:** the new ESA Climate Change Initiative and Land Surface Temperature data will allow monitoring of urban temperatures, together with 3rd party data, such as Landsat and ASTER. **Biodiversity:** Citizen Science data collected by Natusfera (or MINKA) is accessible through a RESTful API. Data validated will be regularly uploaded, at least, to the Global Biodiversity Information Facilities (GBIF) an international organization that offers open access to biodiversity data. **Green Infrastructure:** Corine Land Cover (CLC) 2018, connectivity analysis will be conducted in GIS using EO products: EEA, Natura 2000 data and CLC; Data processing and analysis will be performed using GuidosToolbox that allows quantifying the importance of habitat areas and links for improvement of connectivity, and evaluating the impacts of landscape changes on connectivity. The EPISODE City-chem Chemistry Transport Model will be used to produce detailed maps of basic pollutants under different intervention scenarios.

Potential barriers: A holistic approach in an inherently complex urban setting such as the AMA might call for unforeseen refinements/adjustments of the study area, beyond the administrative borders of the Municipality of Athens (e.g., the 15 minute city walk, connectivity of the green infrastructure network). The EO data is by design scalable and dynamic, thus accommodating for such refinements and adjustments. Lack of interest from citizens to get involved to citizen science project.

Ambition during the project: ARSINOE aims to provide Athens with the foundation of a public consensus towards climate resilience, targeting the key community systems of the environment, biodiversity, clean energy, primarily, and transportation secondarily. The Municipality will ensure that the innovations are relevant and aligned to the city's strategic goals. Building on local knowledge obtained through various EU programmes (ICARUS, ROCK, NOVELOG, EXTREMA, NextGEN, ABCities, TrustInPlay) state-of-the-art technology will be leveraged (e.g. Copernicus Services) and citizens' interaction will be pursued. The aforementioned innovations yield significant potential towards building urban resilience as they directly address UHI and biodiversity, build multiple baselines for data-driven informed decision making. The proposed Education / Outreach component with Green Curricula will introduce ground-breaking immersive, and virtual education principles in schools, aiming to spread it to schools around the EU and beyond. Finally, the youth assembly and T4T simulations initiative aims to become an alternative teaching programme, introducing local/regional Green Deals among young people, triggering a bottom-up and community-based approach on the matter in question.

Ambition after the project ARSINOE is fully aligned to the targets of the Athens Resilience Strategy for 2030 (developed with the support of 100 Resilient Cities – currently R-Cities, a partner in ARSINOE), facilitating a resilient Athens providing for citizen proximity to nature that will enable withstanding climate change and consequent environmental challenges. Integrating natural systems into the urban fabric, making the city cleaner, promoting sustainable mobility and co-creating public spaces are key components of the Athens Resilience Strategy. The Strategy is grounded in the real world, i.e., has a deep understanding of the policy implications (international such as the New Urban Agenda and the SDG Framework or local city particularities such as the Declarations) and requirements, but also pinpoints the integral role of the urban community in achieving resilience.

Outscaling potential The city's active participation in the Eurocities Network, the Resilient Cities Network (former 100 Resilient Cities—a partner in ARSINOE), and the C40 Cities Climate Leadership Group (Athens currently leads the Cool Cities Network) is in itself a reaffirmation of the city's strategic alignment with the trend towards strengthening urban governance in the EU, via establishment of a wide range of new governance bodies and arrangements across EU cities. This includes large networks which are significantly empowering cities and accelerating the evolution of urban governance towards more horizontal cooperation and knowledge exchange.

The rationale for ATHENS Case Study In the Athens area, there are concentrated activities that contribute almost 40% of Greece's GDP, making it the largest economic and administrative center of the country. Moreover, due to its geographical location and the port of Piraeus in each south-western part, Athens is also an area of particular importance for the Mediterranean area as well. The ongoing infrastructure projects, such as contemporary highways connecting Athens with the rest of Greece and Northern Europe through the Balkans, underpin the special role that Athens has as a Metropolitan Region, not only for Greece but also for the wider region.

Attica, the wider region to which Athens belongs, is particularly exposed to extreme weather events. Almost every winter there is at least a heavy rainfall that causes damage to infrastructure, housing, businesses and crops in the suburbs, and cause problems in the traffic and the smooth functioning of the city in general. Wildfires that also occur almost annually during the summer months, in forested areas on the mountains surrounding Attica, further exacerbate the severity of the effects of rainfall and flooding.

Athens vulnerability to climate change effects will have serious negative consequence not only for the city itself but also for Greece as a whole. Therefore, the Athens region must be adequately shielded in terms of its resilience to climate change. ARSINOE project can help to this end, as the implementation of the systemic solutions and innovations developed during the project, will help the Civil Protection and Public Authorities to make timely and informed decisions, thus mitigating the effects of extreme weather events.

Athens is capable of adopting such solutions, considering also the explicit intention of the current leadership of the Municipality of Athens to set both the improvement of green infrastructure and the support of urban biodiversity as two of its Strategic Objectives.

CS2: Mediterranean Ports **Lead Partner: AUEB-RC**

Key systems addressed: Weather phenomena sharpened by climate change can cause extensive damage to **coastal infrastructure**. **Sea level rise** coupled with more frequent and more **intense storm waves** are a menace for seaports and waterways globally; causing **submergence**, **flooding, and coastal erosion.** The occurrence of such incidents does not only have immense economic consequences to the local communities, but could **threaten human life.** Blue Economy with a turnover of €750 billion and 5 million people working in the maritime sector in 2018, is particularly important for the EU. Especially the countries of this CS (Cyprus, Greece, and Spain) have significant **tourism**, fishing, shipping, etc. In Greece, **maritime transport** is a viability prerequisite due to its insularism. Therefore, short sea shipping is also very important. It is crucial that seaport and waterway operators will **strengthen resilience** and adaptation. Natural and human systems need to adjust to new conditions taking advantage of existing competitive advantages. ARSINOE will directly address **infrastructure and maritime transportation** by improving their resilience, **health and well-being** by avoiding **cascading effects** of climate change on human communities, including risk of mortality and relocation. ARSINOE will also indirectly address **primary production**, by improving transportation related to fisheries and aquaculture as well as **environment**, including **biodiversity** adjacent to seaports considered. This case study will consider NBSs as alternative or complement to conventional adaptation measures. Blue carbon approaches, namely seagrass and salt marsh restoration and/or cultivation will be examined in the context of designing tailored adaptation pathways against erosion and flooding. **BRIGAID** will be

used to find suitable innovators to design the adaptation pathways that will be co-created through the **SIA,** since active stakeholder engagement is fundamental for acquiring successful and long-lasting solutions.

Short description This transboundary CS, consists of the ports of Piraeus (Greece), Limassol (Cyprus), and Valencia (Spain). **Piraeus seaport** (partner PPA)—second maritime cluster globally—is one of the leading European seaports, in terms of coastal shipping, cruise and containerized cargo. Currently, 51% of the port belongs to the Chinese company COSCO, while it is involved in 14 EU-funded projects related to its intention and target to become a "green" and financially independent seaport. **Limassol seaport** handles 90% of the export and import volume of Cyprus and a lively Cyprus passenger traffic, including cruise ships and ferry connections with Greece, Israel, Egypt, and Lebanon. It is managed by DP World Limassol, P&O Maritime Cyprus Limited, and Eurogate. The **seaport of Valencia** is managed by the Port Authority of Valencia (PAV), which trades under the name of Valenciaport. This public body is responsible for running and managing three state-owned ports along an 80 km stretch of the Mediterranean coast in Eastern Spain: Valencia, Sagunto, and Gandía. It is Spain's leading Mediterranean port in terms of **commercial traffic**, mostly containerized cargo, due to its dynamic area of influence and an extensive network connecting it to major world ports. Valenciaport is also the maritime gateway for various **commercial activities** to and from the entire Iberian Peninsula. The port of Valencia is currently involved in over 40 EU projects (partner FV), most of which focusing on environmental impact of the seaport activity. ARSINOE will assist seaports and adjacent communities to adapt in a changing climate by improving their resilience in a holistic manner: In particular, ARSINOE seeks to (i) conduct a vulnerability assessment for seaports since it is a prerequisite for enhancing resilience and develop adaptation actions; (ii) identify adaptation priority actions and; (iii) design tailored adaptation pathways for the seaports considered. Ultimately, the conclusions will be translated into transformative interventions to enhance the resilience of seaports. The purpose of this case study is to incorporate existing mechanisms and tools developed by the port authorities while actively engaging stakeholders and incorporating financial instruments throughout the process. The vulnerability assessment, which constitutes the first pillar of adaptation and is still pending for European seaports, due to lack of detailed information regarding the characteristics of each seaport considered, will be structured around the: (1) identification of the climate-related parameters that are critical for a seaport's infrastructure and operations. This will be the key input for modelling the effects of climate change on coastal-port environments at a local and regional scale. ARSINOE will examine seaports as a dynamic element at the land-sea interface and provide a holistic vulnerability assessment based on indicators development incorporating various dimensions of a seaport, namely (i) environment, (ii) operations, (iii) energy, (iv) core infrastructure, (v) socioeconomic and (vi) safety; (2) recognition of the infrastructural and operational features of seaports (Limassol, Piraeus, and Valencia) most vulnerable to climate change; (3) enabling analysis of impacts on seaports by systematically collecting the **information** required to quantify the **impacts from climate change** and those of **disruptions**. The vulnerability assessment and subsequent design of adaptation pathways require active stakeholders involvement, effected through the SIA and BRIGAID mechanisms, while existing financial resources and suggested financial instruments will be examined. Nevertheless, policies, as well as administrative adjustments to the designed pathways will be required to support this transformation.

Data sources, including models available: Data for variables affected by climate change, e.g., temperature, rain height, wind velocity, moisture, wave height, sea level, will be collected to quantify vulnerability across spatial and temporal scales. ARSINOE will assess seaports vulnerability via consideration of all its infrastructural and operational elements, both in the present and in the future and will transform them into Performance and Risk Indicators. Valencia will obtain data from the Port Authority meteorological stations, AEMET and AVAMET. PPA works on Maritime Surveillance aiming at providing the involved key actors with the necessary methods and systems to achieve effective data

exchange concerning various maritime risks and sectors. Port of Limassol will obtain data from meteorological stations and through key maritime actors.

Potential barriers: Potential barriers are related to the difficulty to engage stakeholders or interested parties, being unable to proceed with solutions due to fragmental legislative barriers or policies. Additional barriers are related to data availability and collection. Both barriers are currently growing due to COVID-19. Other risks identified are related with low data/models quality. To mitigate these risks, data sets quality and models uncertainty will be measured, quantified and assessed. Moreover, alternative models for seasonal forecast and procedures and gap imputation have been defined.

Ambition during the project: ARSINOE aims to describe how the climate-related vulnerability of waterborne transport, infrastructure assets, operations, and systems can be assessed and present a 'portfolio' of potential structural, operational and institutional measures to be considered when developing the relevant adaptation pathway for the improvement of seaport's resiliency. By following a SIA, it purports to present a ground-breaking context for the prompt identification of weaknesses relating to the Mediterranean ports ecosystem and propose accurate solutions enabling authorities and other stakeholders to prepare an adaptation strategy about climate scenarios based on specific **KPIs**. There are few research studies examining the impacts of climate change on seaports (e.g., https://publications.jrc.ec.europa.eu/repository/bitstream/JRC108865/jrc108865_final.pdf), yet without quantifying them such. ARSINOE will address these limitations via quantitative, real-time vulnerability assessment which analyses seaports as a dynamic element at the land-sea interface with complex interactions of the terrestrial and marine space. Further, the vulnerability index could be linked to the ESG rating tool, created in cooperation with the Hellenic Republic Asset Development Fund (HRADF) to perform a sustainability assessment of the ports in HRADF's portfolio. A critical aspect of the project is **stakeholder behaviour** and **perception** on adaptation. Such information can be gathered for a specified group of stakeholders, using results from behavioural economics and VR technology to project some de-biasing videos on climate change (details in WP2). The identification of appropriate and adequate **financial resources** is necessary. Of course, to fund transformation projects on such a large scale cannot be done from a single source, so a **portfolio of financial instruments** should be developed. The package of financial instruments should match the complexity and estimated time horizon for the implementation of the projects, but should also take into account the acceptable level of risk of the involved parties. Therefore, traditional financial instruments, such as **debt issuance** through bonds with sustainable characteristics, e.g., **Green-Bonds**, **ESG Bonds**, and **SDG-linked Bonds**, should be considered. Innovative tools such as **Crowdfunding** or even **Charity Schemes** can be eligible to be included in the funding portfolio, too. **Index insurance** could be a valuable tool in enhancing the resilience of seaports against extreme weather events too. It is an innovative method for insurance coverage, paying out reimbursements for loss of capital and assets caused by extreme weather and catastrophic events, based on a pre-specified index, e.g., rainfall level.

Ambition after the project: With the completion of the project, the health risks associated with extreme events including storm waves and flooding should be significantly minimized whereas the well-being of the adjacent communities should be enhanced. In addition, the **change in the behavior** of both the stakeholders and the members of the wider port society should also be visible. The perception of dealing with a problem locally and isolated will be replaced by the belief that only through **creative synergies** can effective solutions emerge. Besides, it is expected to increase **public awareness** on issues related to the smooth operation and **resiliency of ports**, as well as a **willingness** by people to get engaged in the implementation of relevant actions. A relevant ambition expressed by the **4-Seas Initiative** of **UNSDSN** targets the engagement of all stakeholders in co-designing a **SIA pathway** for the transition to socially, culturally, economically, environmentally, and geopolitically sustainable development in the Euro-Asia Region embracing the 4-seas.

Outscaling potential: The extension of the project will be based on the production of a real-time early warning system and a lifecycle smart digital support tool with applications and solutions given on

environmental and socioeconomic terms that can be adopted by different ports and other sectors. Also, the project could potentially upgrade the quality of life (air & water pollution, traffic, noise) of surrounding communities and have a positive impact on the international economy, as the seaports are part of the global maritime transport system, connecting sea freight to inland freight transport modes.

Rationale for selection of case study: Nowadays, the Mediterranean region's average annual temperature is 1.5°C above the preindustrial period (1880-1899) records and even higher than the current global warming trends (+1.1°C). Due to such climatic changes, which alter atmospheric events, coastal Mediterranean areas, for instance, Cyprus and other places in Greece, have been susceptible to storm surges and other disturbances such as intense coastal erosion to a degree that has never been seen before (i.e erosion adjacent Limassol port). Port's location along coasts involves high exposure to a wide variety of hazards, including sea-level rise, changes in extreme sea levels (wave set-up or storm surge), flooding, and overtopping, which impinge on the infrastructure itself but operations and human well-being.

Moreover, recently, the mucilage or saliva phenomenon appears more intensively on a large scale in the Mediterranean Sea due to climate change and the increase in temperature attaches itself to equipment in ports, making them difficult to use, not to mention the toxicity levels and emissions that will occur in the threatened areas. Thus, it is certain that Ports represent the best example of paramount infrastructure for the global socio-economic system threatened by climate change. An increase in extreme temperatures may lead to increased operational disruption and negatively affect humans' safety.

The COVID-19 pandemic has showcased the vulnerability of maritime networks, seaport efficiency, and hinterland connectivity in the Mediterranean and indicated that Mediterranean seaports must remain fully operational concerning the protection of public health all regular services in place, guaranteeing complete functionality of supply chains.

This transboundary CS consists of the ports of Piraeus (Greece), Limassol (Cyprus) and Valencia (Spain), three leader Mediterranean ports. Each port will focus on the impact of climate change in their main traffics and the influence of traffics in the local economies. Piraeus seaport (partner PPA)—second maritime cluster globally—is one of the leading European seaports in coastal shipping and cruise. Limassol seaport handles 90% of Cyprus's export and import volume and a lively Cyprus passenger traffic, including ferry connections with Greece, Israel, Egypt, and Lebanon. The seaport of Valencia is Spain's leading Mediterranean port in terms of containerized cargo due to its dynamic area of influence and an extensive network connecting it to major world ports.

Thus, the Mediterranean ports attract particular interest within the ARSINOE project, while its imperative to study the mitigation of the climate change effects in the region. The specific region must be adequately shielded in terms of its resilience to climate change, as otherwise, any vulnerability will negatively affect not only these ports but the region as a whole.

The analysis will also consider the particularities of the Mediterranean region, which face important discrepancies between the countries, with Southern Mediterranean countries dealing with unequal distribution of resources, social instability, conflict and migration as well as the exposure of this area to several natural hazards, including earthquakes, volcano eruptions, floods, fires or droughts. Finally, it should be noted that the effects of climate change in Mediterranean ports differ from those that may occur in Atlantic ports, (or other regions) so it is important to cooperate and seek synergies between methodologies/ strategies, identify cascading effects, and adapt them to each of the regions. Moreover, the explicit intention of the current leadership of these three seaports to work together and support the sustainability transition in the region is expected to serve as catalyst for the CS, both in terms of engagement in the CS, as well as regarding its outreach potential.

CS3: Main river, Germany	Lead Partner: LMU

Key systems addressed: The Main river basin is considered highly vulnerable to the unavoidable effects of climate change. ARSINOE will provide the required innovation to build multi-sectoral resilience and adaptive capacity to reach the ambitious emission reduction targets while establishing and maintaining water-energy-food security and ecosystem integrity. Regarding CS3, ARSINOE will focus on six topics: stream and groundwater quality and quantity, examining specifically the impact of anthropogenic activities such as agriculture, energy production, and waste management, on the hydrogeochemical pathways between the terrestrial and aquatic environments, on land resources competition and ecosystem services (air and water quality, habitat fragmentation, erosion), on water quality; land use change and conflicts, examining the effect of agricultural practices and competition with other economic uses, e.g. energy production; high frequency environmental monitoring, developing an intelligent monitoring system with adaptive sampling frequency – in-situ & remote sensing driven and aiming to improve the data availability for resilient infrastructure while supporting environment-aware decision making; hydroclimatic modelling of complex terrain aiming to improve projections, especially for the dynamics of extreme events under climate change; integrated water resources management, assessing effects of climate change, land uses and forest and agricultural management practices, with its impacts on the development and maintenance of infrastructure and utilities; policy and governance analysis, identifying the relevant regional and local policies in place that determine land and water management, the status of related European Directives (e.g. WFD, FD) in the region and the main economic agents/sectors influencing land and water management policies and vice versa.

Short description: The Main is the Rhine rivers' largest right tributary, located right in the centre of Europe and stretching East-West from the mid-altitude mountain ridges of Upper Franconia in the Northeast and the Franconian Alb region in the South towards Frankfurt in the West, covering a total of 27.292km². The river basin is characterized by intense topographic gradient and covers various meteorologically and ecologically diverse regions. The river has a complex runoff regime. Human settlements, infrastructure and economy are historically acquainted to this habitat in stable climatic conditions. Germany's federalism has established strong municipal responsibilities including infrastructures of services for the public. These take the challenge and the chances to adapt in self response of local governance to expected climate change.

Naturally, all floods occur in winter and early spring, due to snowmelt and prolonged precipitation, while in the summer and early fall, low flows or even droughts are recorded, such as the record-breaking drought event in the summer of 2015. The diverse topographic and climatic conditions have led to heterogeneous land use patterns. While Upper Franconia, due to its mountainous character and adverse climatic conditions, is characterized by over 60% forest cover, Middle and Lower Franconia is characterized by intense and very diverse agricultural use. Especially Lower Franconia, with its warm and relatively dry climatic conditions, has become a centre of specialized cultivation, including productive and prestigious viniculture, horticulture or hop growing, including its specific effects on natural habitats, groundwater and alternative land use. The regions along the Main river contribute to electricity supply (22%, Middle Franconia to 28%, Lower Franconia) from renewable energy sources (photovoltaic, wind and biomass installations (www.energymap.info)) in the German/Bavarian Energiewende (energy transition). The ambitious goals of the Energiewende and the conventional and highly specialized food production led to intense land use competition. Combined approaches may open windows of opportunity to respond to climate change. The Main River is currently widely used for transcontinental industrial and touristic navigation from the Black Sea to the North Sea, thus, necessary infrastructure is built along the river, such as inland ports, weirs, and locks, equipped with an installed hydroelectric capacity of 127 MW. The Rhine-Main-Danube Canal, which is part of the Franconian Water Transfer System, employs a complex network of artificial reservoirs and rivers to transfer on average 150 Mm³ per year from the Danube river to augment low flow conditions and

related water quality and navigation problems in the Main river system. According to the available climate projections for the region, an intensification of the present climatic variability is expected, i.e., moderately increasing temperatures with stronger precipitation in the winter and reduced precipitation in the summer. In summary, the Main river basin makes an exceptional case study for ARSINOE, because of its dynamical evolution of land use competition in the WEL-nexus. Among other challenges, it must be expected that: (i) vulnerability and risks associated to extreme events (floods in winter and droughts in summer) are very likely to increase, posing additional challenges for infrastructure systems and thus civil and economic resilience as well as agricultural productivity; (ii) water availability may be diminished especially during summer months, exacerbating conflicts at least between drinking water supply, hydropower production, navigation and agricultural irrigation, calling for local or – in addition – transregional water management in an ongoing (political) process; (iii) water quality problems, especially related to eutrophication effects from an intensifying agriculture, are likely to increase in an environment of reduced water flow and increasing water temperatures, causing ecological problems and challenges to achieve and stabilize the goals of the Water Framework Directive; (iv) the energy transition towards renewable energy sources strongly triggers a low-carbon energy future but is also likely to cause conflicts on land resources between energy supply and food production, while technical answers to climate change may add up to energy demand (i.e. pumps, cooling); (v) further, long-term effects of the energy transition on land demand, water treatment, habitat fragmentation and related ecosystem services are poorly understood today and require LCA-studies for balancing.

Data sources, including models available: The Main, is managed by the International Commission for the Protection of the Rhine River (www.icpr.org) and belongs to the Category-1 European River Basin Districts, for which a cooperation agreement and a River Basin Management Plan (RBMP) exists. Flood Risk Management Plans have been completed for large portions of the river and Low Flow Management Plans are currently under revision. Many studies have been done in the Main river basin, but none (to the applicants' knowledge) that have been setup in a similarly interdisciplinary and holistic nexus context. The data situation is outstanding, the contacts to the main public and private stakeholders are well established and functional. A process-based and spatially explicit hydrological model is already implemented for the Main river basin, to assess climate change impacts on water resources and extreme events. Strong ties with critical stakeholders ensure up-to-date data on system operations and surveys. The applicants consider this situation as ideal to implement a case study to demonstrate the effectiveness of an integrated multisectoral-dynamics platform to support decision making towards sustainable land and water development under dynamically changing boundary conditions.

Potential barriers: The perception of a generally high adaptive capacity in the region has long limited the awareness among stakeholders that impacts of climate change are likely to be much more severe and diverse than previously expected. It is still rather new that the manifold consequences of climate change cannot be handled by isolated adaptation strategies, but require synergies from collaboration, sharing of resources, and joint target definitions. The mismatch in time scales of increasing demand for land due to urban growth, expansion of specialized agriculture or the transition to an energy system based on renewables against the responses to climate change, may result in conflicts of mitigation measures vs adaptation strategies. Another potential barrier results from a science-society-policy interface that currently operates below capacity, so that climate change related innovations and methodologies propagate too slow into practice. The share of responsibilities in preparing for and responding to climate change between private and public bodies remains vague and requires a harmonized structure. The introduction of ARSINOE's multi-sectoral resilience framework and system dynamics platform will help to overcome these potential barriers; the co-design and co-production of science-driven technical and cross-sectoral innovations helps to build and demonstrate new climate-resilient development pathways.

Ambition during the project: The CS's ambition is to provide innovation to build multi-sectoral resilience and adaptive capacity to reach the ambitious emission reduction targets while establishing and maintaining water-energy-food security and ecosystem integrity. Direct collaboration with the main regional stakeholders (i.e., municipal and city utilities, farmers and vinery associations, environmental NGOs as well as the governmental agencies (agriculture, environment, forestry) ensures to identify sustainable and multi-sectoral adaptation pathways for the Main river basin. This will include the development and demonstration of key methodological, technical, nature-based, financial and governance innovations. ARSINOE uses existing communication networks and builds strongly on previous climate adaptation research to deliver advanced and operational action plans on a high level of system integration.

Ambition after the project: The nexus-vision of integrated water, land and energy resources management is implemented in operation plans of businesses and agencies to take appropriate measures to reach sustainability targets and ensure ecosystem functioning and integrity. The project will have an immediate and enduring impact on the communication culture among the various stakeholders in the river basin. The multi-sectoral dynamics framework will raise awareness about specific user needs and the necessity to integrate actions to counteract the unavoidable effects of climate change in accordance with the goals of the European commitment to the Green Deal. The tools delivered during project runtime will be absorbed in the business operations and governance of the involved stakeholders and increase their adaptive capacity and resilience to the effects of climate change (gradual changes and extreme events). There is a great potential to outscale the expected positive effects to users in neighbouring river basins and across Europe.

Outscaling potential: This CS has an important outscaling potential to other European river basins that are highly vulnerable to the unavoidable effects of climate change. Innovations implemented in the Main River will be suitable candidates to be implemented elsewhere in Europe in regions with similar vulnerabilities addressing the water-energy-food-ecosystem security. Partner VKU will ensure that the CS outcomes will be considered for replication in their wide network of municipality utilities and enterprises, in Germany and beyond.

Rationale for selection of case study: There is strong growth in the region, especially in transitioning the energy system towards renewables, which causes substantial conflict and competition for land resources. The River basin already experienced major dependency on Danube water (via the Main-Danube canal) to avoid water scarcity and pollution - this is quite exceptional for Central Europe; projections for intensified winter floods and particularly extreme summer drought are severe and will be troublesome and a real challenge for all "areal" economies (e.g. agriculture, forestry, water resources management); on addition, the urban centers in the basin are not prepared for the expected heatwaves. Despite a generally high adaptive capacity, the region is at risk for being pushed beyond its resilience threshold and will need a new level of responsiveness to cope with climate change. Given the recent climate and socio-economic projections, the expected industrial and domestic water demand (and already licensed water withdrawal from the river) will very soon exceed the continuously diminishing water supply in the basin, turning the Main region from a formerly resilient to a highly exposed and vulnerable climate change hot spot in the heart of Europe and across the European watershed divide.

CS4: Ohrid/Prespa lakes **Lead Partner: IECE**

Key systems addressed: This CS aims at improving climate resilience of environmental, economic and social sectors related to water use, having potential of affecting human health and vulnerability of all economic sectors. ARSINOE will achieve this aim by providing an intelligent comprehensive innovation set of long-term planning solutions, allocation and use of sufficient quantity and of adequate quality water for all users, respecting their interests in order to improve human health, food production, conservation of natural environmental systems, clean energy production and sustainable growth of all

sectors. Primary production and terrestrial biodiversity in the wider transboundary region of the lakes Ohrid/Prespa, will be analysed to propose a new water governance management framework, adapted to climate change challenges. This CS will contribute to secure a balanced use of available water resources and bridge the gap between social and economic aspect facing the climate changes impacts on a transboundary surface water ecosystem of Ohrid and Prespa lakes. Aquatic and terrestrial ecosystems featured with rare biodiversity species will be encompassed in this transboundary water governance solution. Clean energy production from five hydropower plants on the Drin River (two in North Macedonia, three in Albania) will be included in the analysis for optimal water allocation and climate adapted usage and management thereof. The demonstration of the methodological framework leveraged by numerical modelling of the transboundary system and simulation of its behaviour and response by software tool, will also consider the potential of implementation of innovations in circular economy, from the H2020 BRIGAID CIW.

Short description: Lake Ohrid is located in the southwest part of the Republic of North Macedonia, on the border with the Republic of Albania. Approximately two-thirds of the lake area belongs to North Macedonia and one-third to Albania. The Prespa lakes system are two freshwater lakes, with the larger shared between North Macedonia, Albania, and Greece, and the smaller shared between Greece and Albania. The two lakes are recognized amongst the most ecologically valuable aquatic regions in Europe. The transboundary area includes six protected areas, three internationally recognized wetlands and a UNESCO Biosphere Reserve. The Ohrid/Prespa lakes form a rare natural interconnected hydraulic system in which the water from Prespa Lake drains into Ohrid Lake. The cascade large hydropower power plants (HPPs) Globocica and Shpilje utilize water from the Crn Drim River, which flows into Lake Ohrid. The hydropower energy production continues downstream, in three cascade HPPs in Albania. Ohrid/Prespa touristic region represents a modern and attractive area for all types of tourism. Special landmark of the region is the large number (over 360) of churches and monasteries from mid-age centuries. Industry consists mostly of textile, food, tobacco and construction materials SMEs. All socio-economic sectors are highly dependent on the water regime of the greater Ohrid/Prespa region and therefore highly sensitive to water scarcity induced by climate change. Existing studies and management plans for the greater region have identified the need for adaptation to climate change impacts and foreseen urgent actions for improvement of quality and quantity of surface and sub-surface water, based on a sustainable and efficient use of water, supported by the appropriate water governance solutions. The 3 countries have an excellent collaboration and experience in common planning and coordination of actions; the partners involved in this CS will establish new communication channels and models to engage a wider range of stakeholders and deploy ARSINOE outcomes.

Data sources, including models available: The CS will focus on a long-term sustainable use of water resources in the complex natural ecosystem of the Ohrid/Prespa lakes considering the coupled sectors of water-energy-land use, aiming at improving their climate resilience and adaptiveness. The methodological and numerical model consisting of analytical and planning framework intended for improving climate resilience of environmental, economic and social sectors related to water use in complex systems, that will be used in this CS, was developed within previous research project financed by the Ministry of Environment and Physical Planning of North Macedonia in 2015/16 and was tested on the Hydro System Knezevo in NM. The model deployment in CS4 will include: 1) Integration of the identified multi sectoral consumption patterns in foresight sustainable societal and economic growth, 2) simulation of multi sector coupled systems' operation in climate risks scenarios, 3) optimization of multi–sector climate adaptiveness by improving the sustainable use of water resources, ensuring a balance among environment, society and economy. The major outcome of the case study will be a new transboundary model of climate resilient water resources management, in the coupled sectors of water-energy-land use. To make it operational and effective, integrated and harmonized actions of stakeholders from all the three countries will be conducted, through stakeholders' communication and

collaboration channels and models developed within the CS. In a nutshell, ARSINOE will take stock of well -established practices and solutions already available from related national and international programmes: i) The model for multi-criteria optimization of large multi - use hydro systems, developed by IECE and tested on Hydro system Knezevo, financed by Ministry of Environment and Physical Planning of North Macedonia, 2015 - 2016, ii) Resonate, for development of professional education program for sustainable management of waters, 2019 -2021, funded by Erasmus+, iii) Beyond borders –introducing smart tourism and sharing economy, IPA Component : IPA 2, Cross border cooperation: former Yugoslav Republic of Macedonia – Republic of Albania, 12/2017 – 02/2020, target region: Ohrid and wider region, iv) River Basin management and transparency – RBMT, Albania/North Macedonia cross-border collaboration, IPA Civil Society Facility and Media Programme 2016-2017, Support to Civil Society Organizations capacities, April 2018 – October 2020. Also, information and policy guidelines will be extracted by the on-going Western Macedonia Climate Adaptation Plan (GR) and the on-going ecological study for Lake Prespa protected areas (GR).

Potential barriers: Among the major challenges of the CS will be to harmonize approaches and practices of different stakeholders in the three countries towards climate adaptive and integrated water management in the large CS area. Potential barriers are seen in possible conflicts in priority of water consumers/users including water policy priorities among the involved countries, due to discrepancies between economic sectors, variety of ecosystems and differences in economic and living conditions and standards, therefore, social attitudes toward water climate vulnerability. Nevertheless, all involved partners will join forces to set specific actions to overcome these barriers, by identifying them in early stage and developing a strategy based on a firm common framework, yet appreciating the specifics of the countries and allowing specific conditions to fit in. This will ensure wide regional adequacy, and acceptance of a new transboundary governance model for climate resilient water management involving all relevant stakeholders in the three countries.

Ambition during the project: ARSINOE will apply NBSs to the CS and will deploy water recycling technologies in industrial and agricultural sectors in order to improve climate resilience of coupled sectors related to water scarcity induced by climate impacts, in the countries involved in this CS. These innovative solutions will also contribute to economic recovery and restart of local communities after the COVID-19 pandemic. Cost effectiveness of the proposed coupled sectors resilience and adaptiveness will be evaluated, as one of the many criteria in the holistic evaluation approach. In addition, financing models to enhance reliable and efficient use of water will be analysed and suggested. In this CS an innovative water management solution, based on integrated sectoral climate adaptiveness approach will be developed. The previously developed multi criteria model, intended for a long-term, sustainable water planning and applied for improvement of multi-sectoral climate resilience and adaptiveness will be complemented by appropriate (MK/EL/AL) governance methods. Planning of water consumption patterns based on intelligent water management and involving different social and economic groups/sectors will be deployed, in a comprehensive approach that will integrate stakeholders in the three countries. Improved social attitude towards climate induced water vulnerability, and resilient consumption patterns, will be achieved through communication and collaboration actions for active engagement and integration of stakeholders from the three countries.

Ambition after the project: The ambition after the implementation of ARSINOE in the Ohrid/Prespa CS is to consciously monitor and improve climate resilience, by demonstration of a long-term climate adapted water management plan, within the whole water supply/use chain, in a region shared by the three countries. Climate adapted water management plan will contribute to preserving the valuable ecosystems, establishment of new behavioural patterns of involved target groups and their increased awareness including their roles and responsibilities in climate adaptive water resources management. In addition, demonstration of the model and its long-term implementation will build up economic sectors resilience, climate as well as economic, by enforced efficient use of water resources in the sectors that have been heavily affected by COVID 19 pandemic (tourism, food production, textiles),

thus lowering their production costs related to water use and therefore building up their resilience. This CS envisages active inclusion of a wide range of social communities from all three countries and improvement of awareness and capacity towards climate resilience. Significant increase of the great region's resilience and improved capacities to adapt to climate change, is expected as a long-term ambition of this CS.

Outscaling potential: This CS integrates multi sectoral climate resilience and adaptiveness based on a new methodological model of water management, applied transboundary in the three neighbouring countries sharing the target region, with a high potential for scalability and replicability in other regions. The model of climate resilient water management and use, supported by numerical modelling and a software tool for planning and decision making in terms of climate scenario simulations, will respect the priority of users as well as water fit for use concept (empowered by circular technologies), thus contributing to just transition towards improved sustainability and climate adaptiveness of multiple sectors highly depending on water quality and quantity.

Rationale for selection of case study: The Ohrid / Prespa lakes was recognized as a representative case study for ARSINOE, taking in consideration the following facts:

- the problem of depletion of surface and groundwater bodies, that has been identified and explored for several years, by government bodies, experts and wide social community of the three neighboring countries sharing the water resources of Ohrid and Prespa Lakes; observations and studies alert that the problem will further expand in severe climate scenarios, along with growth forecasts, unless appropriate measures are undertaken,
- high level of exposure to climate risks, thus vulnerability, of multiple sectors dependent on water: valuable environmental ecosystems (internationally recognized and protected), as well as economy in the region - tourism, fishery, agriculture, small processing industries, hydropower; identified adaptive capacity thereof, by implementation of rational, smart and long term actions,
- need for integrated and coordinated cross sectoral, transboundary and multi stakeholders inclusive actions, to improve climate resilience of the coupled environmental, economy and social sectors.

Deployment of ARSIONE innovative approach in this case study, will result in a resilient, climate adaptive regional water management and governance system, for all stakeholders' benefit, solving the problem of water scarcity and climate vulnerability in this region, being one of the most appreciated environmental and social (ancient cultural and historical heritage) systems in Europe, and on the other hand, mostly affected by the COVI 19 pandemic, due to the composition of economic sectors.

CS5: Canary Islands **Lead Partner: ULL**

Key systems addressed: Regarding the Canary Islands, ARSINOE will focus on the ecological transition and vulnerability of aquifers in volcanic islands and will put further efforts to the primary production including agriculture, forestry, fisheries and aquaculture, water management and clean energy infrastructure. ARSINOE will take into account the interdependence between water and agriculture. The agricultural sector is the largest water user in the Canary Islands, where wine, potatoes and tomatoes are the main exports. Therefore, greater sustainability within the water sector (through the water footprint and the carbon footprint) will positively affect the agricultural sector and, therefore, the water and energy situation of the archipelago.

Short description: Sustainability has three dimensions: ecological, economic and social. The current international economic and financial crisis has led to a rethinking of European policies for economic growth and employment generation. The Europe 2020 Strategy replaces the previous Lisbon Strategy, presented in 2000 and revised in 2005, with a new design to achieve a strong economy, considering the reality of the crisis, the performance of the previous strategy and the important role that European regions have to play. This is why the *Intelligent Specialization Strategy of the Canary Islands (RIS3)* has green growth and sustainability as one of its priorities, as outlined in the following objectives: Low-carbon economy, industrial development and energy efficiency; Eco-innovation, agriculture, fishing

and environmental protection; Bioeconomy based on Canarian biodiversity; Integration of renewable energies; and Canary Islands Natural Laboratory. The Canary Islands are immersed in a process of Ecological Transition, where establishing the starting point from the energy point of view of the main sectors of the archipelago is key to implementing measures that affect in a transversal way. Therefore, the calculation of the carbon footprint and water footprint of the agricultural sector in the Canary Islands as well as the water sector, favours the knowledge of the energy situation in the archipelago to be able to establish effective measures of sustainable governance. In addition, a new challenge is opening up in the Canary Islands in terms of water and agriculture. The island of La Palma is suffering from a volcanic eruption (since September 2021) that will have effects yet to be determined on the island's aquifer (and, therefore, on the availability of water resources) and on agriculture, as it has so far devastated more than 100 hectares, including banana plantations and livestock farms.

Data sources, including models available: Hydrological Plans of the Canary Islands (based on the guidelines set by the European Framework Directive); Cartography of the Canary Islands (e.g., Grafcan); Statistical data of the Autonomous Community of the Canary Islands related to water and agriculture (e.g., ISTAC) and other data necessary to establish consumption and vulnerabilities.

Potential barriers: One of the most limiting aspects of all for the development of the Canary Islands is the reduced space. This is what makes Canary Islands land planning a real challenge on many levels. It must be taken into account that all sectors that are important in the Canary Islands' economy must be allowed to grow sustainably. In other words, tourism, agriculture and industry must have an important place in island development, without compromising the sustainability of the archipelago. Their remoteness from the main European body as an ultraperipheral region is another challenge to their development.

Ambition during the project: Arsinoe's ambition for the Canary Islands CS is to facilitate the decarbonization of the archipelago, create knowledge regarding the contamination of aquifers due to agriculture, and guarantee food sovereignty by strengthening local agriculture. These three targets will favour the resilience of the region in the face of adverse vulnerabilities that may affect it, such as the current pandemic crisis. More specifically the ambitions are the following: 1) The analysis of the water cycle (from collection to treatment) in the archipelago linked to fossil energy, thus the carbon footprint of this sector will be established (ULL); 2) The analysis of the irrigation systems used in the agricultural sector in the Canary Islands and the exploration of new natural purification systems that can be used as irrigation water (ULL); 3) Since the hydrological cycle and agriculture in the Canary archipelago will be studied, groundwater vulnerability maps will be created precisely due to the use of fertilizers in agriculture and livestock farming in the archipelago in El Hierro and La Palma. These two islands have been selected for the following reasons: i) El Hierro is a pioneer in presenting a self-sufficient energy model (La Gorona del Viento project) and is rich in groundwater, this being the most used water resource on the island; ii) La Palma has been selected because it is an island rich in groundwater (in fact, it is the only island in the Canary archipelago that does not have desalination plants) and where agriculture is very important (especially tropical crops such as banana, mango, avocado, etc.) and, due to the volcanic eruption that began in September 2021, the situation of the aquifer is uncertain, something that is worrying since it is an island that depends on groundwater resources to guarantee the water demand of agriculture, local population and tourism. The effect of the eruption on the vulnerability of the aquifer of La Palma is still unknown, so it is desired to study in depth the effects on the aquifer in quantitative and qualitative terms (ULL, ELITTORAL); 4) The water footprint and carbon footprint of the main crops in the Canary Islands, such as bananas, potatoes, tomatoes and vines (ULL); 5) Dissemination to society. (ULL, CSIC, ELIT).

Ambition after the project: To establish the starting point of the Canarian archipelago with respect to the vulnerability produced in the insular aquifer by agriculture and livestock, and to define and quantify the limits that should not be crossed in the islands in this aspect. In addition, the energy impact of this nexus on the Canary Islands will also be established, so that it may also be the starting point for

reducing emissions related to agriculture in the Canary Islands. In this way, the Canary Islands seek to lead the way in water and energy saving in the agricultural sector, within the Macaronesia region (formed by the Azores, Madeira, Cape Verde and the Canary Islands).

Outscaling potential: There are nine ultraperipheral regions in the European Union: Guadeloupe, French Guiana, Martinique, Mayotte, Réunion and Saint Martin (France), ***the Canary Islands (Spain),*** the Azores and Madeira (Portugal). These regions enrich the EU economically, culturally, and geographically, hosting 80% of its biodiversity. However, due to their remoteness and other unique features, they pose challenges for their development. Because of this, each UPR has drawn up its own lines of action and priorities, in order to be able to provide solutions to the main challenges they face and to be able to take advantage of their specific features by turning them into advantages rather than disadvantages. The vulnerability of the UPR is defined as the sensitivity to suffer because of exposure to the economic conditions of the rest of the world, ***from commercial vulnerability to natural disasters,*** as well as other factors associated with the small area and insularity. Regions with low vulnerability are better able to cope with current challenges (e.g., those related to the economic crisis) and future challenges (e.g., those related to environmental conservation and climate change). The Canary Islands have, therefore, a strong ***dependence*** on the outside world, but they are increasingly looking for a sustainable, decarbonized territory with greater food sovereignty. With all these characteristics, the Canary Islands are intended to be a green reference point in the Atlantic. On the other hand, the sectors that consume more ***water resources*** in the islands are ***agriculture*** and tourism. Since the water model of the islands contemplates desalination, a water-energy nexus is generated that must be targeted, since sustainable alternatives in the water sector can reduce the energy requirements of the archipelago.

Rationale for selection of case study: The Canary Islands are an outermost region of the European Union belonging to Spain, located approximately 2000 km from the Iberian Peninsula. Due to their insular condition, they are characterised by limited resources and high dependence on the outside world. On the other hand, they are islands rich in renewable energy sources such as wind, sea, geothermal energy or the sun. This archipelago must develop and implement an ecological transition on the islands, so that life on them can develop in a sustainable way in the future. This is key in a region where the population is growing annually and where a large part of the water resources come from the subsoil and from seawater desalination, all framed in a scenario of climate change.

Climate change predicts an increase in temperatures as well as a variation in rainfall patterns, so that without early action, there is a risk of depleting the aquifers' reserves, putting them in a vulnerable situation. All this would lead the archipelago to increase the use of desalination, which has positioned itself as one of the largest consumers of electricity. Therefore, improving the quantitative and qualitative status of groundwater in the Canary Islands is therefore essential for sustainable development in the archipelago.

CS6: Black Sea case study **Lead Partner: AUTH**

Key systems addressed: The CS aims focuses on the connection between upstream land uses and the **coastal and marine ecosystems** of the Black sea, including the Danube delta, and connections to the western Black Sea marine basin, under climate change and bring out innovative approaches including NBSs. ARSINOE intends to follow an integrated watershed management approach —**from source to open sea**—and provide climate resilient good practices, that will enhance the adaptive capacity of ecosystems and the local communities involved. This CS will comprise elements from different locations placing them within a virtual watershed with distinct Black Sea characteristics. Black Sea is a unique marine ecosystem that may face serious climate induced problems exacerbated by anthropogenic influences. The watersheds draining into the sea provide nutrients and pollutants including plastic litter. ARSINOE proposes three sub-studies: the headwater, the riverine and the coastal ecosystems. The upstream part introduces NBSs equipped with low-cost sensors, while the

transition zone and the downstream parts involve monitoring of a Bulgarian **wetland** and climate resilient applications in the **Danube delta** from Romania. The Danube Delta Biosphere Reserve is the largest protected river-sea macro ecosystem. The **Ropotamo** Ramsar protected **river complex** in southern Bulgarian Black Sea coast includes a downstream stretch and estuary with a significant variety of biotopes. Thus, the wetland is very biodiverse and provides habitat for a number of threatened species. Building on a long history of initiatives for Black Sea marine ecosystem, Blue Growth Initiative for R&I in the Black Sea develops a Joint R&I agenda to guide National and EU policy makers. CS marine responsible partner, METU, has led the drafting of the Strategic R&I Agenda (SRIA) and now coordinates the H2020 CSA Black Sea CONNECT towards SRIA implementation involving multiple stakeholders. BRIDGE-BS (METU leads & AEUB is a partner) and DOORS (METU is a partner) are two additional H2020 projects for the acceleration of SRIA. ARSINOE pools and translates the results of these three projects for an integrated assessment and future pathways under climate and socioeconomic scenarios.

Short description: NBSs—low-cost, easy to build constructions, compatible with the surrounding environment, with significant results and minimum environmental impacts—will be introduced across the watershed, in order to enhance the protection from soil erosion, river and sea water pollution, flood protection, groundwater replenishment and coastal zone erosion. NBSs specifications will be decided in collaboration with BRIGAID innovators. NBSs impact will be recorded through an extensive monitoring network (meteorological, atmospheric conditions, water flow parameters, etc) comprising self-built, low-cost sensors deployed. The optimal number of LCS, their distribution and density, will be investigated with ML. The combination of NBSs implementations, mathematical simulations and real-time data integrated with use of ML will create a DT. In the Ropotamo river complex wetland in Bulgaria, an area protected by the Ramsar Convention, the creation and demonstration of an innovative system for constant monitoring of the functional and spatial structure of the formed complex geosystem, is proposed. For this purpose, both stationary sensors and the capabilities of modern unmanned aerial systems (UAS) will be used. The proposed innovative monitoring system will result into integrated GIS, where the collected real time data from the stationary complex sensors and spatial data from the UAS monitoring will be integrated, processed, analyzed, providing critical spatially referenced information for the decision-making process of spatial planning and management of the Ropotamo complex. The UAS will be equipped with specialized sensors (photogrammetric, thermal, multispectral, and hyperspectral), which will give information resources, objectively characterizing the spatial structure of the geosystem, the status of the plants and the environmental factors, such as water distribution, water balance of the habitats, even some basic chemical and biological aspects on the water quality, based on the hyperspectral images. On this basis, the critical places and problems will be identified and (where possible) NBSs will be proposed to support the ecosystem balances ensuring climate change resilience. All data (from stationary sensors and UAS) will be integrated into a specialized GIS-based platform, which will have two components: public (supplying real time information for the public, enhancing awareness and contributing to “behavioral change”) and specialized (acting as a decision-making tool for policy makers and responsible authorities, allowing testing and deployment of new sustainable finance tools and climate risk insurance instruments).The proposed innovation technologies for the Danubian Delta, are as follows: (i) Innovative technology for evaluating the resilience of **biofiltration** bacteria from Danube Delta - the technology is based on the investigation of the bacteria present in the Danube Delta, to identify those that have a selective biofiltration role. Models for this technology will be filled with existing data from an **ongoing project** financed by Romanian Structural Funds dedicated to the microbiota screening and monitoring in relation to nutrients and pollutants load on Low Danube – Danube delta – Black Sea system. ARSINOE will continue these activities allowing mid-term assessment of the wetland biofiltration capacity, as well as the role that transitional regions such as delta is playing in the river-sea system management in terms of complex processes aggregating hydrology-nutrients-biomass-biodiversity-economics and

social behaviors. The validated model will be used for evaluation and resilience building of sensitive ecosystems in the Danube Delta. (ii) Innovative farming on salted soils - the technology is based on the evaluation of the soils affected by high salinity and the complexity of abiotic factors as the level and composition of groundwater, soil composition, air flows, solar radiation and so on, that contribute to the plant behavior during their lifetime (germination, growth, selective biological products). Based on the specific soil and weather conditions, halophyte local species with high adaptation capacity to those conditions are selected. The aim is to implement and demonstrate a technology, which has been already developed is at **TRL 3-4**. During the project implementation, an experimental field located near Murighiol, in the Danube Delta, will be used for organizing a **DT** application. The application will be used for fine tuning of the farming activities and maximizing the yields. Danube Delta farming lands resilience will be addressed. Economic studies will be carried out for promoting the technology and scaling-up in different other areas of the Danube Delta. **METU** will present these analyses in a dedicated workshop and will contribute to the integration of other CS activities in terms of their potential impact. The aim of this specific workshop will particularly include **how the predicted pathways of Black Sea marine system under blue growth and climate scenarios will shape the human activities in the land-sea interface and further in the watershed including urban zones, an aspect not covered in the SRIA implementing projects.** Altogether, the CS will aim to provide a holistic regional view of how the region will adapt to climate change, realize its GD transformation and fulfill SDGs with a strong inclusion of state of marine basin - watershed integrative assessments and predictions. Citizen Science activities inspired by the Citclops project (CSIC is a partner) will also be conducted in the CS to assess Black Sea marine water quality via the involvement of citizens collecting data with dedicated platforms in ARSINOE.

Data sources, including models available: State of the art watershed hydrologic and hydraulic models combined with GIS applications, will be used. The future climate conditions will be defined based on RCP scenarios and models and species selection will be done for future climate conditions (proactive forestry). For the innovative farming on salted soils, existing good practices and solutions already proven within the EU funded HaloSYS, will be considered (partners BSUN and NIRDBS). New H2020 projects, (AUEB-RC is a partner) like BRIDGE BS, DOORS, and INTELCOMP, along with other relevant projects like COASTAL, SEAwise, RECONNECT, AMARE will contribute and at the same time, benefit from ARSINOE, through common participants. The outputs of the "Feasibility Study for a Black Sea SDGs Observatory" project assigned to SDSN Black Sea through AUTh, by the Permanent International Secretariat of the Black Sea Economic Cooperation organization (PERMIS BSEC) will also be used in the development of ARSINOE.

Potential barriers: The main barriers for the innovative technology for evaluating the resilience of biofiltration bacteria from Danube Delta, could be the interoperability of existing data. The problem is intended to be solved by the involvement of the Danube Delta Biosphere Reservation. The barriers for the innovative farming on salted soils, considering the project objectives related to risk analysis and assessment, are: (i) the relevant monitoring time, which is the plant lifetime – generally starting in springtime. Depending on the project's schedule, there will be 3 or 4 monitoring points, which need to be continued for conclusions and correlation analysis, (ii) the unforeseen weather events that might cancel the annual monitoring by the plants' death. To address this barrier, the pilot area will also integrate Digital Twin that will be used for weather predictions and contingency plans to avoid unforeseen weather events.

Ambition during the project: ARSINOE's ambition is to provide insight and guidance on the connection between upstream land use and the coastal and marine ecosystems of the Black Sea, through an integrated watershed - from sources to open sea - management approach and provide climate resilient good practices based on systemic solutions and innovations, that will enhance the adaptive capacity of ecosystems and the local communities involved. Several innovative solutions and methodologies are introduced enhancing the challenges and ambition of ARSINOE to become a landmark for the wider

Black Sea area. Innovative methodologies include: (1) development of DT models through the introduction of NBSs combined with the deployment of Environmental LCSs; (2) development of an innovative system for constant monitoring of the functional and spatial structure in the Ropotamo wetland; (3) introduction of innovative technology for evaluating the resilience of biofiltration bacteria from Danube Delta and innovative farming on salted soils. Results and conclusions driven from these watershed level CSs will be combined with holistic marine ecosystem state assessments to increase their impact.

Ambition after the project: The planned CS provides a holistic and integrated approach that connects upstream land use with the coastal ecosystems. Multipurpose NBSs aim to emphasize that even small scale environmentally friendly interventions may have significant impact in resilience and adaptation to climate change. Interventions in the Danubian Delta, like the evaluation of the resilience of biofiltration bacteria and new farming practices on salted soils, are expected to have significant impact in one of the most important European ecosystems. ARSINOE will also improve the linkage between forestry, agriculture, and water management sectors in the Black Sea. It involves a transition in forestry and watershed management and helps improve climate resilience. The strong part of the CS is the resilience it may provide to local communities, ecosystems and watersheds through environmentally friendly good practices, economic and ecologic benefits.

Outscaling potential: The structure of the CS, comprising significant aspects from various watersheds following a "from source-to-sea" approach, is such that it can easily be expanded and adjusted to similar study areas not only around the Black Sea. As a matter of fact, the outscaling potential of this case study is enhanced by the Euro-Asian UN **4-seas initiative**, proposed by UNSDSN to accelerate science driven blue growth and the implementation of the SDGs in the following 4-seas: the Mediterranean, the Black Sea, the Caspian and the Aral Sea, as a response to the climate crisis and its effect on Marine Ecosystems and Coastal Populations. The 4-seas Euro-Asian Initiative builds on research and demonstration projects, developed by the proposing team (AUEB-RC, AUTH) and its collaborators world-wide, and it follows a "from source-to-sea" approach starting from river basins and continuing to coastal and marine ecosystems, as well as the societies whose livelihoods depend on these ecosystems. Since the Black Sea CS follows the same "from source-to sea" approach it will be easy to adapt and be incorporated within the 4-seas initiative and be outscaled throughout the region. The 4-seas initiative establishes a strong link between the Black Sea CS and the Mediterranean Ports CS enhancing the interconnection between ARSINOE CSs. The participation of the Black Sea Economic Cooperation organization BSEC in the consortium, the oldest and more representative regional organization promoting economic cooperation in the wider Black Sea area ensures the outscaling of the results of the project and the maximization of its impact.

Rationale for selection of case study: The Black Sea is a unique sea basin that is rich in biodiversity, and natural resources. But it is under increasing pressure from human activities and the effects of climate change, causing the Black Sea marine ecosystem to deteriorate, undergone drastic changes since the early 1970s. The extended watersheds draining into the sea provide nutrients and pollutants, but also transfer the impacts of climate change from the watersheds to the Black Sea itself.

The Black Sea case study comprises elements from different locations placing them within a virtual watershed with distinct Black Sea characteristics, in such a way, that it can easily be expanded and adjusted to similar study areas. Following a "from source to sea" approach, ARSINOE proposes three sub-studies: the headwater, the riverine and the coastal ecosystems, providing a holistic and integrated approach that connects upstream land use with the coastal ecosystems, focusing on climate change adaptation and mitigation measures.

CS7: Southern Denmark **Lead Partner: DTU**

Key systems addressed: Flooding caused by extreme sea levels, sea level rise, storms, extreme rainfall and runoff events severely affects most natural and human systems in Southern Denmark, which is a

region dominated by low-lying coastal areas, coastal cities and vulnerable natural resources. 7 out of 14 national risk areas identified within the EU Floods Directive are located in Southern Denmark. Due to climate change, multi-hazards and their associated risks to key societal and natural systems are expected to increase. To build sustainable resilience to both direct and cascading impacts of flooding, ARSINOE will pursue and co-design systemic solutions involving different scales and socio-economic sectors that exploit intelligent water management and other innovative technologies, nature-based solutions, governance models, and financing instruments. Regarding **primary production**, ARSINOE will seek to identify pathways for exploiting the potential of the urban-rural nexus involving **agriculture** and **horticulture** in Southern Denmark. **Fisheries** and **aquaculture** could also be a factor. In the Wadden Sea region, the interplay between human activities, coastal protection and the preservation of the Wadden Sea's irreplaceable **ecosystems** and **biodiversity** for the benefit of present and future generations pose as a particular challenge. The nearby port of Esbjerg is of international importance as a nexus for renewable and non-renewable **energy** infrastructure in the North Sea. Finally, ARSINOE will consider aspects of **cultural heritage, residential and commercial buildings, transport, and water and sewage infrastructure.**

Short description: The Region of Southern Denmark is one of five administrative regions in Denmark with ~1.2 million inhabitants. It covers the island of Funen (Fyn), a number of small islands south of Funen and the southernmost part of Jutland (Jylland), when it borders with the northernmost state of Schleswig Holstein in Germany. Coastal areas dominate the region, which connects to the North Sea, the Baltic Sea and the Inner Danish Waters. All of the major cities in the region are coastal, including the historic city of Odense, one of the most important and third-largest city in Denmark. Other important cities include Esbjerg and its major port, which features high-value industry and serves as a hub for vessels deploying and servicing wind turbines in the North Sea (as well as oil and gas extraction); Ribe, which is Denmark's oldest town and home to irreplaceable cultural heritage; and Vejle, which houses the regional capital. Key primary production in the region includes fisheries, agriculture, and aquaculture. The Wadden Sea is a transboundary region in the North Sea that is classified as UNESCO World Heritage for its globally unique geological and ecological values, and extends from north of Esbjerg along the Danish, German and Dutch coastlines, covering a total of some 500 km, connecting four of the municipalities in the Region of Southern Region. This area is jointly managed by Denmark, Germany and the Netherlands through the Trilateral Wadden Sea Cooperation.

Data sources, including models available: Flood hazard maps based on hydraulic models of varying complexities exist for all of the major urban areas within the region; for the 7 areas identified within the EU Floods Directive, the Danish Coastal Authority carried out new high-resolution hydraulic modelling in 2020. These may be complemented by improved projections using the CAFlood model (see CS8. Torbay and Devon County). The Geological Survey of Denmark and Greenland has carried out complementary land surface and subsurface modelling in collaboration with university partners. A multi-risk damage cost assessment tool developed by DTU and LNH Water within the COHERENT project will complement the ARSINOE resilience (task 3.1) and multi-sectoral dynamic modelling frameworks (task 3.5). Estimates related to extreme water levels under current and future climatic conditions are provided by Task 3.3. Eco-hydrological, agricultural and marine models as well as in-situ observations are available but not within a common framework.

Potential barriers: The fact that local municipalities and utility companies rather than the regional or national authorities are legally and financially responsible for climate change adaptation in Denmark is a significant barrier for the implementation of systemic solutions that consider multiple key sectors. In addition, private landowners in the coastal zone are responsible for coastal protection of their own property. Cost-effective adaptation solutions are therefore impossible without bringing stakeholders together from all the different levels in collective actions, which can invoke critical challenges related to, e. g, economic burden sharing and financial models. Further, utility companies generally promote urban water management, including technical and nature-based solutions but are often biased against

other priorities and sectors. The private sector is often sparingly involved in activities related to climate change adaptation. To facilitate coordinated actions and ensure the acceptance and support from local stakeholders and key actors in Southern Denmark, representing both the private and public sectors, ARSINOE will introduce a novel multi-sectoral and systemic resilience framework. Employing this framework as well as the ARSINOE systems innovation approach, new climate-resilient pathways will be co-produced and new technological and institutional innovations will be identified and demonstrated. This will uniquely link relevant sectors and help break down silos that are currently posing as barriers to the implementation of efficient adaptation strategies and facilitate informed prioritization on different levels.

Ambition during the project: The ambition is to identify sustainable and multi-sectoral adaptation pathways for the Region of Southern Denmark that involves and prioritizes key societal sectors and actors. This includes assessment and demonstration of key technical, nature-based, financial, and governance innovations that will further the region's long-term goals of increased sustainability and climate resilience. Several research actions have previously addressed adaptation towards coastal floods and pluvial floods using semi-holistic perspectives. Here ARSINOE aims to deliver improved and operational risk information at unprecedented systemic levels and to facilitate unprecedented holistic adaptation strategies.

Ambition after the project: The ambition is to implement and upscale ARSINOE innovations beyond demonstration within the Region of Southern Denmark; and in the longer term at national scales and beyond.

Outscaling potential: Climate challenges suffered by the Region of Southern Denmark are generally representative of low-lying coastal areas in the Northern parts of Europe and beyond. As such lessons learned from applying the ARSINOE frameworks of resilience and multi-sectoral dynamics, including tools innovated in the project, will be transferable. Similarly, technical and nature-based innovations developed are expected to have a high scaling potential.

Rationale for selection of case study: Climate change seriously affects Southern Denmark in almost every possible way. Flooding from coastal, riverine, pluvial sources and groundwater, including compound events, is a critical issue across almost all of the region. Likewise, sea level rise, storms and drought have proven to be a serious issue for many socio-economic sectors. Meanwhile, there are many places both rural and urban, where adaptation is currently constrained by conflicting sectoral, institutional and/ or economic interests, physical conditions, lack of knowledge and technological solutions, as well as national and international policies and legislation (e.g., the Wadden Sea area). Also, institutional frameworks are currently less developed than in other Danish regions. Combined, all of these factors make Southern Denmark extremely vulnerable to climate change but also a perfect living lab for identifying and realistically demonstrating innovative solutions across scales and sectors that are applicable along a wide range of settings in Northern Europe.

CS8: Torbay and Devon county **Lead Partner: UNEXE**

Key systems addressed: Health issues can be assessed to some degree within the case study by identifying residential properties at risk and assessing the effects of this flooding on health. Water will be assessed within the case study by looking at the effects of flooding on the water supply network. Environment, including biodiversity can be assessed as part of the study by investigating the effects of flooding on the local environment. Infrastructure including clean energy and transport will be assessed within the case study by assessing the effects of flooding on critical infrastructure including roads, railways, electric gas, water, telecommunications, etc.

Short description: Torbay is located in South Devon (UK) and covers an area of approximately 62 km^2. The area has suffered from flooding over many years from a number of different sources, including surface water run-off, highway flooding, sewer flooding, main river and ordinary watercourse flooding during intense rainfall events. In addition, the coastal areas of Torbay suffer coastal flooding due to

overtopping of the sea defences during high tides that coincide with easterly winds. It should be noted that the surface water, highway, sewer, main river and watercourse flooding is exacerbated in the low-lying areas around the coast of Torquay, Paignton and Brixham during high tidal cycles when the capacity of the surface water outfalls discharging to coastal waters is impeded. In addition to the property flooding, during all of these flood events numerous roads have flooded to some extent, with some of the roads having to be closed to traffic until the flood water has subsided. As sea level is predicted to rise by over 1 m in Torbay over the next 100 years, the frequency and impact of overtopping of the sea defences will increase, resulting in more infrastructure and properties being affected by flooding.

Data sources, including models available: A full hydraulic model of the sewer/drainage and fluvial system exists, as well as the related calibrated CAFlood model, which was developed during a recently finished EU-project (EU-CIRCLE). This will be used as the background computational basis in ARSINOE. Although hydraulic models exist for large parts of the case study area by using the existing automated rain gauges around Torbay, hydraulic modelling of the actual rainfall can be undertaken and the information received during flooding events can be used to verify the hydraulic models. This will provide confidence in the hydraulic modelling which can then be used to identify the flood risk areas for both large and frequent storm events. This information can be used to improve resilience (the resilience framework was developed in EU-CIRCLE) and undertake detailed design works for flood alleviation schemes.

Potential barriers: Flooding has significantly impacted on the socioeconomic activities in Torbay on a regular basis. Quantifying flood risks in Torbay involves not only the clear understanding of climate and environmental conditions within local catchments. The hazards within Torbay could disrupt regional or national services while the hazards in surrounding regions will also influence the local communities. The complex interrelations require a multi-sectoral approach to better evaluate the risks for setting up adaptation measures to strengthen the resilience to flooding.

Ambition during the project: ARSINOE will upscale the EU-CIRCLE approach to support the development of climate-resilient solutions in Torbay and the surrounding south Devon region. Throughout the project, ARSINOE consortium members will collaborate with local stakeholders and communities to co-design adaptation measures and evaluate their effectiveness via quantifying multi-aspects benefits. ARSINOE will adopt multi-ABM to evaluate the interrelationships among various sectors under different climate change and socio-economic development scenarios.

The proposed case study will improve and expand on the initial works undertaken during the EU CIRCLE project in order to allow other areas of Torbay and Devon to have detailed assessments of the impact of flooding undertaken. In addition to identifying the effects of direct and indirect flooding on properties and the consequences of cascading failures of critical infrastructure, these assessments will allow adaptation measures to be identified that will provide significant benefits to the local communities and economy of the region by reducing the risk of flooding to both properties and critical infrastructure. Participatory management will be adopted to support decision making of adaptation measures, in which flood visualisation methods will be developed for use within the case study using 'serious gaming' techniques to assist the engagement with stakeholders and citizens.

Finally, the results of the case study will allow Torbay Council and Devon County Council to provide evidence of both direct and indirect damage of flooding to critical infrastructure and properties which can then be considered as part of business case development for Flood Defence Grant in Aid justification and approvals.

Ambition after the project: By involving the stakeholders at an early stage of the project, they will be able to provide requirements for the outcomes that they wish to see from the case study. This will enable the case study to be focused on outcome measures that are going to be extremely useful for the stakeholders during and after the project. The outcome of the case study can be used by the stakeholders to identify areas at risk from flooding (both directly and indirectly) and improve the

protection of their apparatus from future flood risk. In addition, the outcome of the study will be used to support bids for national funding from local authorities to undertake both coastal protection schemes and flood alleviation schemes in their area. We envisage the successful demonstration of ARSINOE in Torbay and Devon will enable the national climate change adaptation policy to encourage the multi-sectoral approach to enhance climate resilience.

Outscaling potential: In addition to Torbay, it is proposed to extend the study area to include Teignbridge District Council area (adjoining local authority to Torbay) and the County of Devon which also suffers from both coastal and surface water flooding. The study will look at the effects of flooding on critical infrastructure in both urban and rural areas.

Rationale for selection of case study: Critical infrastructure (CI) together with many properties within Torbay and Devon are at risk from flooding from different sources including coastal flooding, sewer flooding, surface water run-off, watercourse flooding and main river flooding, affecting resilience to extreme events, due to Climate Change in the region. The objectives of this case study are to analyse the effects of coastal, pluvial and fluvial flooding on CI as a result of climate change over the next 100 years within both Torbay and Devon. A previous H2020 (EU CIRCLE) with similar content, focused only on part of Torbay and identified both the direct and indirect effects of flooding on CI together with the costs associated with this damage.

CS9: Mediterranean island -- Sardinia **Lead Partner: AGRIS**

Key systems addressed: ARSINOE's key aspect in Southern Sardinia will be the Water-Food-Energy Nexus (WFE), aiming to enhance staple food production and yield stability in climate change-prone Mediterranean areas.

Increasing air temperatures as well as decreasing and/or more erratic rainfall with increasing land degradation are projected for Sardinia and the Mediterranean Region. This will likely result in decreasing production and yields of the main crops grown in the area, particularly in rainfed conditions. These trends are very likely to negatively affect the stability of local food chains with detrimental effects not only on the primary sector but also on downstream correlated activities at both artisanal and industrial level (e.g. milling, bread-making, pasta-making and trade), including the agro-food sector in tourism. In the long term, even food and social security can be negatively affected, arising the risks of migratory waves from the south to the regions of northern Europe with correlated issues in social security. In this context, ARSINOE will apply an innovative use of water, implying low-input aid irrigation for rainfed extensive crops, coupled with a sustainable land management based on minimum tillage and/or sod seeding, in order to increase yields and stabilize staple food production in local food chains. Due to its agronomic and economic importance in Sardinia and the Mediterranean region, ARSINOE will focus **on durum wheat and its correlated local chains for bread and pasta production.**

Future climate scenarios forecast an increase of long hot and dry periods, with few short and intense rainfall events, and a reduction of the total water volume available. Water required for irrigation is projected to increase, causing groundwater depletion and salinization with detrimental effects on soil fertility in the medium- and long term. ARSINOE will focus on the **optimization of water and land management for agricultural use**, in order to satisfy the different water demands of crops with special attention for durum wheat and preserve soil fertility. A rational and efficient use of water and soil resources, based on saving water for irrigated crops, low-input irrigation water for the rainfed ones and conservation agriculture, will allow yield enhancement and stabilization in order to preserve crop production and soils, food security, groundwater level and water quality both for agricultural and civil uses. Special emphasis will be given to durum wheat with the goal of: (1) optimizing the use of irrigation water in some critical stages of the plant growth by monitoring the vegetative state of the crop by means of remote sensing data and with the aid of medium and long-range probabilistic weather forecasts, with proper physical-statistical downscaling; (2) optimizing the use of energy required to move the water needed for irrigation in line with the water-energy nexus principles. This activity will

be carried out using an existing hillside reservoir, but the experimental results related to water and energy fluxes will be used for the next point; (3) creating and sizing above-ground water reservoirs in order to develop an irrigation system totally powered by autonomous renewable sources and with green energy storage in order to strengthen the **water-energy nexus in relation to agriculture**. This system will enable to store water and derive energy from renewable sources at the same time. Extensive use of cropland for agricultural purposes may result in reduced land availability both for animal and plant wild species. In contrast, enhancing crop production in the most fertile agricultural areas will save land with beneficial effects for alternative uses of the soil resource. Moreover, the use of new Animal by-products N-fertilizers originating from a physical method based on the use of radio frequencies capable of rapidly changing the highly degradable organic biological material into a stabilized and sanitized product will allow the disposal of animal waste in a framework of sustainable and circular economy. The use of these new organic fertilizers will also enhance the **soil biodiversity** thus improving the environmental impact of agriculture. In this viewpoint, the next PAC 2021-27 will be strongly focused on soil carbon sequestration and ecosystem services.

Short description: The Region of Southern Sardinia is divided between the metropolitan area of Cagliari (the capital of the Island), and the province of South Sardinia. This area accounts for 47.7% (total 1.64 million) and 32.3% (24,090 km²) of Sardinian population and surface, respectively (Source: Italian Institute of Statistics - ISTAT). The climate is typically Mediterranean with warm and dry summers and mild winters. The area can be classified as semi-arid owing to a total mean annual rainfall of about 450 mm, mostly concentrated between autumn and early spring. Climate change projections for this region forecast an increase of the average temperature, with longer hot and dry periods, alternated by short but intense rainfall events. **Water scarcity has always been a crucial issue in this region**. Therefore, satisfying the water demand of citizens, agriculture, industry and tourism and finding a balanced management of the water resource are big challenges that need to be addressed, especially considering the future climate conditions. Water supply in Sardinia derives in part from surface water, stored and regulated by several reservoirs spread all over the Island (57%), and in part from groundwater (43%): 17% of the withdrawn total water is supplied for industrial use, 37% for civil use and 46% for agricultural use. Regarding the latter, 30% comes from groundwater and 68% from surface water. About 45% of the total regional water resource is withdrawn in the metropolitan area of Cagliari and south Sardinia. (Source: ISRI – Institute of Industrial Relations Studies and ISTAT). The Region of Southern Sardinia is the main agricultural area of Sardinia, particularly in the Campidano plain (south-west Sardinia from Oristano to Cagliari). This plain shows a great land variability, due to its ancient geological origin, and a prevalence of alluvial soils with expandable grid clay in the most fertile areas and soils with variable texture in the less fertile ones. The main crops of the area are durum wheat and other cereals (barley and oats), legumes (fava bean), forage (clovers and lucerne) and artichoke and potato in the most fertile areas. Concerning trees, the most important are: vine, olive and almond trees. In terms of integrated productive systems, **the durum wheat chain is the most important in the Campidano plain**. This crop fuels several upstream activities, such as seed production, as well as downstream ones such as milling, bread- and pasta-making. However, durum wheat production and yield stability are seriously threatened by climate change, thus jeopardizing food security and social stability in the whole Mediterranean basin. Concerning Sardinia, a decreasing production trend has been registered due to: (i) the EU decoupling policies; (ii) low commodity price causing low profitability; (iii) unfavourable growing conditions caused by climate change, with projected average yield declines between 16% and 19% in the southern durum wheat growing areas. As a result, the average durum wheat production in Sardinia declined from about 140,000 tons in the 2006-2008 period to 54,000 tons in the 2018-2020 period. Given a demand of more than 160,000 tons, import of durum wheat is necessary. If this imbalance would occur in poor areas of the Mediterranean region, it could generate a **serious threat to food security and trigger migration processes.**

Data sources, including models available: ARSINOE will combine use of high-resolution DEM, long term time series of multi-spectral Copernicus data, as well as atmospheric reanalysis data to estimate potential growth for the entire area of interest of the project and maximize yields and production. As a result, it will be able to optimize yields by using the aforementioned input for the past, as well as of real time satellite, CC scenarios data and weather forecast (from daily to seasonal scale) for the future, with the aim of developing a tool for the real time estimation of the optimal dose rates of irrigation water and fertilizer.

Potential barriers: Potential barriers could be related to: (1) persisting unfavourable growing conditions due to climate change distracting farmers from sowing; (2) preference of farmers to grow more profitable crops; (3) refusal of irrigation practices in rainfed crops because considered as unnecessary; (4) refusal of N-fertilizers from animal by-products due to different habit or cultural reluctance; (5) potential conflict in land use between reservoirs and agriculture; (6) possible transmission problems from technological devices (e.g. using mobile networks) in rural areas. To overcome these potential difficulties, ARSINOE demonstrative actions should convince the farmers about the effectiveness of changing traditional crop management towards an innovation-oriented attitude, in terms of increased production and stabilized yields. In this context, focus on local chains in the "farm to fork" UE perspective and striving to preserve cropland, yields and food production is a powerful tool to encourage farmers towards innovative agronomic techniques by ensuring an income to them and food security to the citizens, under the aegis of sustainable agriculture and circular economy.

Ambition during the project: ARSINOE focuses on adaptation of the agricultural production systems to ensure food production and food security in the challenging projected climate change-prone conditions of the Mediterranean region. Energy and water management for irrigation represent a major cost for the agricultural sector, which is expected to increase due to climate change. **The project activities will directly address agricultural operators and increase the resilience of agricultural, water and energy distribution systems**, because it involves a bottom-up adaptation, thereby reducing the need for major structural interventions from the top. ARSINOE's ambition is to improve water management and Water Use Efficiency (WUE)with the aim of enabling a sustainable use of the resource, ensuring a balance among citizen, irrigation, industry and tourism requests. Another ambitious goal is to strengthen local short chains in order to make Sardinia and the Mediterranean region less dependent on imported wheat and reduce GHG emissions. It will enhance durum wheat yields by using new locally selected seed varieties and new N-fertilizers deriving from an innovative fast organic matter decomposition process. ARSINOE will stabilize durum wheat yields by innovatively and sustainably using aid irrigation strategies in a conservation agriculture context aimed at maximizing WUE while preserving soil fertility, and minimizing the pumping costs and pumping energy consumption, in order to get a more resilient approach in a context where natural resources are decreasing. Finally, ARSINOE will enhance food production and food security by estimating the potential for renewable energy production and storage with the goal of implementing an irrigation system totally powered by autonomous renewable sources and with the energy storage.

Ambition after the project: Emphasis on local food chains, particularly referring to durum wheat, enables to strengthen the local food infrastructure such as storage and food processing systems. Furthermore, this approach aims to decrease the durum wheat import flow from overseas countries (e.g., Canada) thereby reducing greenhouse gas emissions due to transport, storage and packaging. Moreover, the innovative use of renewable energy sources for agricultural irrigation needs by using above-ground reservoirs as a low head hydroelectric storage system both for water and energy, will allow the irrigation systems to operate in "energy island" mode, totally based on clean energy both for fields not reached and for those reached by the electricity distribution network. For the latter ones, there will be the possibility of using the irrigation water storage system as distributed storage in the electricity distribution network. Staple food production quality in the study area, with a special focus

on durum wheat chain, plays a key role due to the importance of this crop and its end products (e.g., semolina high volume heart breads, flat breads and different types of pasta such as macaroni and spaghetti). It is proved that durum wheat grown in the Mediterranean areas, including Sardinia, Sicily, Northern Africa, Southern Italy, Greece, Spain and Middle East, shows a low level of mycotoxins thus preventing diseases of the gastro-intestinal systems and intolerances with a special focus on gluten intolerance which are extensively spreading particularly in the north-west high-income countries of Europe.

Outscaling potential: The key area is strongly exposed to the detrimental effects of CC in terms of declining yields threatening food production and food security. This situation is paradigmatic of what could happen in South Mediterranean areas: with no adaptation and/or mitigation measures, the whole Mediterranean region can be threatened by food insecurity generating social tensions, political instability and migrations. The solutions proposed by ARSINOE are scalable to the whole Mediterranean region because they are effectively low cost. The WFE nexus is innovatively interlinked in order to improve the resilience of the study area by: (i) enhancing and stabilizing crop production; (ii) preserving soil fertility; (iii) developing a new awareness on the importance of staple food coming from short chains. ARSINOE focuses on primary agricultural production and on the supply of both water and energy for pumping, which are functional for cultivation. It is a bottom-up solution that can be immediately replicated to the Mediterranean area and can allow the agricultural sector to adapt more effectively to the challenges of climate change.

Rationale for selection of case study: The impact of climate change in the Mediterranean will result in: decreased water availability, land degradation, reduced food security. Due to its strategic position, Sardinia is a lab to assess a sustainable food production system based on: new BioFertilizers to preserve soil fertility; innovative use of irrigation and selected genotypes to stabilize yields; focus on local food chains to favour the development of rural areas. Emphasis on durum wheat, the main extensive crop in southern Europe, makes this model highly exportable to the whole Mediterranean areas.

3.0 ACTIVITIES RELATED TO THE CASE STUDIES (M1-M4)

3.1. Overview and scope

During the first four months of the project (from October 2021 to the end of January 2022), important key actions and activities related to the CS have taken place. These can be divided in three groups/types:

(i) Organisation/communication/coordination activities (related to Task 6.1 directly).

(ii) Activities related to stakeholder mapping for the implementation of the SIA (related to synergies with WP2 and to the Task 6.2).

(iii) Activities related to technical implementation requirements (related to WP3/WP4, i.e., the technical WPs and to the Task 6.3) and to synergies with the sister projects.

Activities in those first months do not yet include activities related to innovation packages and their validation (Task 6.4 and related to WP5 and WP7 respectively), because the related tasks will start much later in the project, i.e. in the third year. In the same way activities about Task 6.5, related to lessons learned and evidence-based recommendations (due to start in last year) are also not relevant.

The main driving and (urgent) scope during this first period (M1-M4) was to define the **initial long list of stakeholders for all the CSs**. This was needed to achieve Milestone MS2, which is a synergy between WP6 and WP2. Several actions have been coordinated to achieve this successfully, which are detailed in the following subsections.

3.2. Organisation and coordination of the CS activities

Practically all the project partners are involved in activities related to the CS in WP6 and in Task 6.1, which coordinates, monitors and guides them. Moreover, the necessary actions for the implementation of the SIA (Chapter 2) for each CS are complex and diverse, due to the different key issues of all the CS, but also due to the interlinkages of this WP with all the other WP in the project, which are shown in Figure 3.1.

Specifically, activities in WP6 are related to:

- WP2 for actions related to stakeholder engagement and the SIA, including activities related to the Living Labs.
- WP3 for specific modelling and data purposes related to the CS.
- WP4 for the co-design of the environmental intelligence tools and visualisation requirements.
- WP5 for the development of specific innovation packages for each CS.
- WP7 for the development of specific business models and instruments for each CS.
- WP8 for outreach and dissemination.

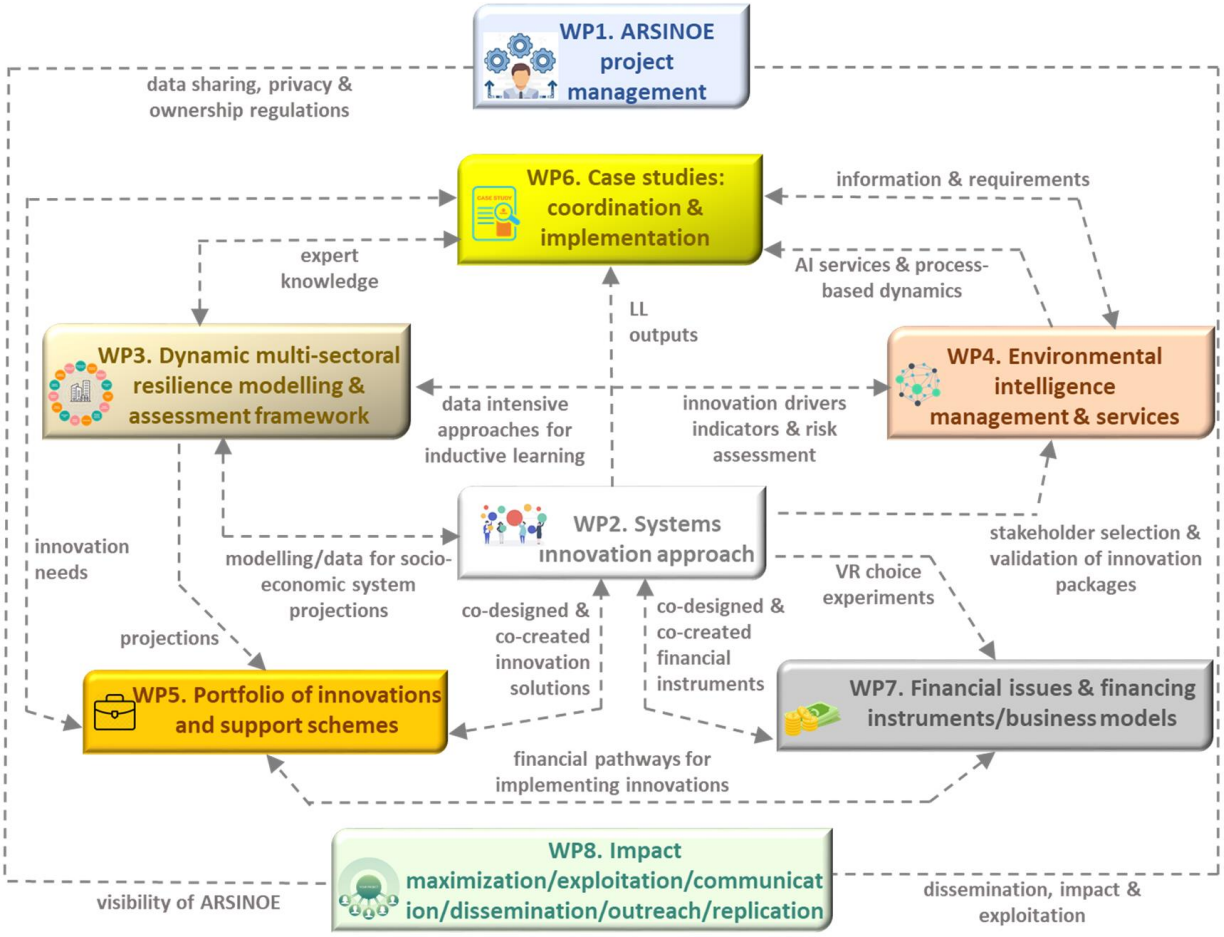

Figure 3.1: Schematic representation of the interlinkages between WP6 and the other WPs

Consequently, it was decided early by the project coordinator (UTH) and the WP6 Leader (KWR) to establish regular recurrent virtual meetings, to organise and monitor the actions. Participation to these meetings is required for:

(i) at least one representative for each CS;

(ii) at least one representative for each of the other WP6 tasks (Task 6.2, Task 6.3, Task 6.4)

(iii) at least one representative from WP2, WP3, WP4, WP5, WP7 and WP8.

The first step was the definition of the partners (and specific people), who would participate in those regular meetings. The list of the required participants is given in Table 3.1. It should be pointed out that these meetings are open to all the people involved in the project. Any partner can participate, but for practical purposes, it was required by all the CS and the WPs to nominate a key contact person (for the meetings) as well as a replacement. Additional people were also welcome, but the minimum attendance had to be held.

Table 3.1 Participants in the weekly meetings for the CS activities

Title	Main partner	Other partner(s)	Key person(s) for the meetings
Task 6.1 (**Hosts and WP leaders**)	KWR		Lydia Vamvakeridou-Lyroudia, Joep van den Broeke, Alex Chatzistefanou
CS#1: Athens Metropolitan Area	UTH		Giannis Adamos - Chrysi Laspidou or Nikolaos Mellios or Dimitrios Kofinas or Alexandra Spyropoulou
CS#2: Mediterranean ports	AUEB		Conrad Landis-Alice Guittard- or Phoebe Kountouri
CS#3: Main River (Germany)	LMU	VKU	Ralf Ludwig (LMU) – Gunar Braun (VKU)
CS#4: Ohrid/Prespa Lakes	IECE	NECCA	Dijana Likar (IECE) - Maria Papadopoulou and/or Antigoni Voudouri (NECCA)
CS#5: Canary Islands	ULL		Juan Carlos Santamarta- Noelia Cruz Pérez
CS#6: Black Sea	AUTH	CTBG	Nikos Theodossiou-(AUTH) - Maryana Hamanova (CTBG)
CS#7: Southern Denmark	EM	TUD	Bodil Ankjær Nielsen (EM) -Martin Drews (TUD)
CS#8: Torbay and Devon County	TC	UNEXE	Dave Stewart (TC) - Albert Chen (UNEXE)
CS#9: Sardinia	AGRIS	UT, LMU	Marco Dettori (AGRIS) - Isabelle LaJeunesse (UT)
Task 6.2	UT	AUEB	Isabelle La Jeunesse (UT) - Ebun Akinsete (AUEB)
Task 6.3	UNEXE	TUD	Albert Chen (UNEXE) and/or Martin Drews (TUD)
Task 6.4	AUEB		Conrad Landis and/or Alice Guittard
Task 6.5	KWR		Lydia Vamvakeridou-Lyroudia and/or Joep van den Broeke
WP2	UT	AUEB	Isabelle LaJeunesse (UT)-Ebun Akinsete
WP3	TUD	LMU	Martin Drews (TUD) – Ralf Ludwig (LMU)
WP4	UNEXE	ICCS	Albert Chen (UNEXE)-Symeon Papavasileiou (ICCS)
WP5	BRC		Gloria Salmoral or Geraldo Anzaldua
WP7	AUEB		Alice Guittard or Conrad Landis
WP8	GAC		Svetlana Klessova or Lisa Pourcher

The regular weekly meetings occur every Thursday at 14.00 CET. Duration 1 hour. The purpose of the meetings is to record the progress of each CS and any issues that may arise related to WP6 activities, as well as any changes with regards to the Grant Agreement (GA), related to the CS. The meetings take place in Microsoft Teams, organised by KWR (Lydia Vamvakeridou-Lyroudia and Joep van den Broeke). The invitation list is wider than the persons mentioned in Table 3.1. At present the invitation to the weekly meetings is being sent to 42 people within the project partners. More may be added as needed.

The standard agenda for every meeting is:

1. KWR-Update to all (5min)
2. Case Studies: Each CS in turn updates about their activities and issues – 5 min each. No presentations are required-we discuss.

3. KWR-Summing up (5min)
4. AOB

Minutes are kept in an online document, which has been placed at the common Teams space. All the participants are free to see the minutes and edit them, as needed (edit mode). Thus access, openness and constant update is available for all the persons involved in the project. The participation of the representatives from the other WPS is also very important, because specific issues, organisational or technical can be discussed and resolved during these meetings. The **detailed minutes**, for every week, are included in **Appendix A**.

It is understandable that not everyone would be able to attend every week. However, for each CS and WP there are at least two persons designated as the main contacts. The request is for at least one of them to be present in the meetings, to update the others about issues related to each CS. This has been successfully achieved; in every meeting there has been at least one representative from each CS and from the other WPs. There has never been a lack of weekly communication with any of the CS or the other WPs. These regular weekly meetings will continue until the end of the project.

3.3. Activities related to stakeholder mapping (long list of stakeholders)

As it has already been mentioned, a main task for the CS in this period was the compilation of the long list of stakeholders for each CS. For the fulfilment of this activity the cooperation with WP2 (UT and AUEB) was necessary. This is due to the fact that any stakeholder mapping or engagement, or, indeed, any action that involves stakeholders in any way, needs to comply and be methodologically consistent with the wider Systems Innovation Approach (SIA), which is a core component of ARSINOE as a whole. Theoretically, this will start being implemented at the CS within Task 6.2. However, this task is not due to start until M5, whereas the initial long list of stakeholders needed to be compiled by M4.

The following actions have been undertaken, to cover this gap within Task 6.1:

1. WP2 (UT and AUEB) prepared a document introducing the Systems Innovation Approach (SIA) as a methodology and the stakeholder mapping principles (as a series of actions) for the identification of the long stakeholder list, which need to be followed by each CS. This document is part of the Deliverables in WP2 (Deliverable 2.1-due in M12) and will not be repeated here.
2. This document was available to all and placed at the project common folder on November 22, 2021. It was briefly introduced and discussed with all the CS at the regular weekly meeting on November 25, 2021.
3. A special workshop (remote meeting) was organised by WP2 on December 3 for all the CS, where the stakeholder mapping actions and steps have been further explained and discussed to the CS key persons.
4. Each CS set up internal, separate remote meetings, discussing and compiling the long stakeholder list for their specific CS.
5. The progress on the compilation of this list has been closely monitored each week, during the WP6 meetings, where any issues, delays or questions have been reported and discussed. A key person from WP2 was always present to provide answers and specialised guidance, as needed.
6. Special attention and guidance have been given to the compilation of the long list of stakeholders for the three transboundary CS: CS#2-Mediterranean ports, CS#4-Ohrid/Prespa Lakes and CS#6-Black Sea. It was suggested to compile the long stakeholder lists separately for each country

involved, so as to be able to contact them separately as needed at a later stage of the project. This is reflected in the lists in Appendix B.

7. A deadline was set for January 22, for all the CS to provide their long list of stakeholders to WP6 and to WP2. This deadline has been met by all the CS. The long lists of stakeholders have been placed in the common folder and are included in this Deliverable in **Appendix B.**
8. The date for a training meeting (physical) for all the CSs, organised by WP2 (UT) in Tours, France, has been discussed and agreed. The meeting is scheduled to take place between March 21-24, 2022. The intention is to have a physical meeting providing training for stakeholder engagement. If, however, this is not possible, due to COVID-related travelling restrictions, the meeting will take place as a remote or hybrid meeting.

It should be pointed out that the reporting on the stakeholder mapping actions is not included in Appendix B, because they will be reported in Deliverable 2.1 (M12).

3.4. Activities related to technical requirements and synergies

The implementation of modelling and other technical activities for the CSs will take place within Task 6.3, which is due to start in M8. However, some preliminary and preparatory activities have already taken place, to enable the implementation to start promptly and on time in Task 6.3. This was need for another reason: The two technical WPs (WP3 and WP4) had already started working since M1. Consequently, some discussions and interactions with the CS was needed for the progress of their own preliminary work.

Within this first period (M1-M4), the following activities, related to technical requirements have taken place, in preparation for Tasks 6.2 (starting in M5) and 6.3 (starting in M8):

1. All the CS have been asked to **review the description of their CS,** which has been included in the Grant Agreement (GA) and provide any amendments, if needed. Only CS#5 (Canary Islands) suggested a significant amendment; the other CSs only had minor editing/wording amendments. This was due to the fact that in September 2021 (after the GA had been signed), the volcano eruption in Las Palmas took place. The ash from the eruption is expected to affect the groundwater quality, which was already one of the key issues for this CS. Consequently, the partner responsible (ULL) amended the description of their CS and the actions planned within Task 6.3, to take into account the impact of the volcano eruption. The amended CS description is included in Section 2 in this document. The amended plan of actions within T6.3 (subtask 6.3.5) is included in Appendix A (minutes of November 11, 2021). This will be transferred to the GA, whenever an amendment is decided. The coordinator has been notified.
2. There have been discussions during the weekly meetings about how to organise the implementation of the activities in each CS, within Tasks 6.2 and 6.3 (when they start). It was apparent that some CS are at a more advanced "starting" status than others. This is due mainly to previous projects, related to the ARSINOE research themes, in which the key partners in these CSs have been involved (resulting e.g. in higher data availability, compared to other CS). Consequently, it was decided to name these CSs as "**frontrunners**" for this project. These CSs are: **CS#1 (Athens), CS#2 (Mediterranean ports), CS#7 (Southern Denmark) and CS#8 (Torbay and Devon County).** This is a practice which has been followed in other projects with several CSs and complex implementation activities. This means (in practical terms) the following line of actions: Workshops, questionnaires and technical activities (e.g. proof of concept modelling, data requirements and related questionnaires etc.) will take place first within one or more "frontrunners", before being implemented/suggested to the other CSs. In this way, any feedback can be implemented, before trying out (and repeating) specific approach(es) to all the nine CSs.

3. An important technical issue, related horizontally to all the CSs is the **selection of climate projection models and scenarios**, as well as the time frame for these selections for the risk assessment. There have been discussions during the weekly meetings, with the participation of WP3 experts (TUD, LMU), where the most suitable approach has been sought. It was decided that for scientific reasons, there need to be at least two climate projections/scenarios that will be investigated horizontally (i.e., the same) for all the CSs, to enable the comparison of results for risk assessment across all the CSs. To this purpose WP3 (LMU, TUD) organised a dedicated workshop on January 17, 2022. All the CS and the technical partners were invited. The climate models, projections and possible socio-economic future scenarios have been explained to all. An initial decision has been made to investigate two scenarios for climate projections socio-economic projections:

    (a) A lower end (reduced risk-optimistic) option: RCP 2.6 combined with SSP1.

    (b) A higher end (increased risk-optimistic option): RCP 7.0 combined with SSP3.

    A detailed analysis and description of these two options will be included in Deliverable 3.4 (M12). Here only the selection is mentioned. The time frame of the projections has been initially set up to year 2100. The initial idea is to examine the situation for 2050 (30-year projection) and for 2100. However, each CS will also be able to examine additional scenarios (e.g. in line with national regulations), if their stakeholders express such an interest. These two scenarios consist of the minimum "horizontal" requirement for the whole project for risk assessment. The timeseries for these two scenarios will be fully provided (as climate projections) by WP3, so as to enable any CS to examine also intermediate time "snapshots" (apart from 2050 and 2100), should their stakeholders express such an interest. Currently (end of M4) it is still under discussion with the sister projects (IMPETUS and TRANSFORMAR) whether these selections will be followed by them too. The matter is to be finally decided in 2-3 months.

4. All the CS have been notified that the next step in terms of technical preparation for T6.3 is to prepare an **initial** "**conceptual**" **graph** of the types of technical/modelling activities that they envisage for their CS, in time to discuss this with their stakeholders at the first stakeholder meetings that will be organised with the help of WP2 in the coming months. Currently CS#1 and CS#8 (two of the frontrunners) are well ahead with this activity, offering also advice to the others. However, the conceptual graphs are not yet finalised, so they are not included in this deliverable. These conceptual graphs will be a core element for determining a Gantt chart of activities, tailor-made and specific for each CS. It is expected that this activity will be finalised by M8 when Task 6.3 is due to start.

5. All the CS have been notified about the **Ethics issues and GDPR requirements** that they need to follow when they will contact stakeholders in the following months. The initial discussion took place on November 25 (included in Appendix A in the minutes). It was decided that WP1 (Management) will provide a form and that this action will need to be completed by M6, in time for the planned workshop/training organised by WP2 (March 21-24, 2022), as mentioned in Section 3.3.

6. There has been a request for **synergies** by the CSA sister project REGILIENCE for events and common activities (e.g. workshops) among CSs from the three sister projects ARSINOE, IMPETUS and TRANSFORMAR. A special interest has been expressed for CS#1 (Athens), CS#8 (Torbay and Devon County) and CS#9 (Sardinia). These specific CSs share (partly) common regions with CSs in the sister projects, although the key issues addressed are different. Specifically, CS#1 shares a region with CSs from IMPETUS and TRANSFORMAR (partly), while CS#8 and CS#9 share a region with CSs from TRANSFORMAR. CS#8 also shares a partner in common (WRT). The matter was

discussed during the weekly meetings and it was agreed that contact details of one or two key people for the synergies would be compiled and sent to the REGILIENCE coordinator. This action was completed on January 24, 2022.

7. In the framework of collaboration with the sister projects under the CSA REGILIENCE, the definition of a set of common indicators was discussed; such a set of KPIs will be used by all case studies in all projects in order to monitor progress in a unified manner for all cases. For this purpose, it has been decided that each Case Study will identify the specific SDGs that it addresses. Progress towards achieving these SDGs for each Case Study will be monitored via the reported SDG KPIs that are relevant. Each case study will define the set of SDGs and associated KPIs that is relevant and will report baseline values and possible improvement throughout the project. It is interesting that these KPIs will have to be calculated for the scale of each case study—current values are usually reported at the national scale. Relevant information can be found in this link: https://eu-dashboards.sdgindex.org/map.

4.0 CONCLUSIONS AND NEXT STEPS

This document presents in detail the activities related to the organization, coordination, planning and monitoring of the activities related to the CS, which took place in the first four months of the project. During this period great emphasis had been given in getting to know the key people involved in each CS and in establishing a regular way to interact and communicate. As a result of these coordination/organisation actions, ARSINOE achieved the following:

2. The contact lists of the persons for each CS within the project have been established and completed since M2.
3. Regular teleconferences for the WP6 have been organised (see Section 3.1 for details) since M2.
4. Good communication has been achieved among the key persons in all the CS and the key persons in the other WPs. They all came to be introduced to each other, they have contact details, and, most importantly, the CSs know “who is who” and “who is doing what” in the project. Thus, they know who to ask and who to contact in case of any issues or questions. This is a major positive outcome from the weekly meetings.
5. All the CS have organised their own internal meetings, hosted by the main partner for each CS. These take place regularly (mostly every week). Minutes and details about them will be reported in Task 6.3. In this document (Appendix A) only the main points of CS meetings are reported every week, e.g. that the meetings have taken place, or, whether there are anu issues.
6. The long list of stakeholders was completed on time (M4), with the cooperation of WP2, so as to start the activities related to Task 6.2 without any delays.
7. Technical partners from WP3 and WP4 are in regular contact with the CSs. In this way ARSINOE managed to establish regular communication between technical and CS partners. Technical issues and selections are discussed every week, dedicated workshops explaining scientific approaches are explained to the CS partners, who, in turn, can better communicate them to their own local partners and stakeholders.
8. There were differences among the CSs and the local partners, in terms of previous experience and readiness. Some partners had previous experiences from other EU projects, whereas others participated in EU projects for the first time. With these regular meetings it was possible to smooth out the differences and assist/guide the less experienced partners in organising their activities within their own CS, without any CS lagging behind.

9. Each step for the implementation of the SIA approach and technical actions within the CS is being discussed and decided in a participatory way, with the participation of all within the project. This is important, because it is the foundation for building a "team spirit" in the project, which can lead to better implementation of the activities at the CS and, ultimately, outputs for the project overall.

4.1. Initial roadmap for the implementation of ARSINOE at the CS

At this stage, so early in the project (M4) it is not yet possible to formulate a detailed action plan, tailor-made for each CS, mainly because the CS are so different (Section 2), that it is impossible to generalise and plan for all. For now, within Task 6.1, emphasis was given to the necessary preparatory activities for starting smoothly and without delays the implementation action in Task 6.2 (starting in M5) and Task 6.3 (starting in M8).

The immediate next step is the preparation of the conceptual graph of technical activities in each CS, which is under way (Section 3.4). This is expected to be completed by M7. Once this is finalised, the detailed plans and timeline of actions for Task 6.3 will be determined. This will also lead to the first major revision of this document, which is expected to take place in M8.

Consequently, the generic roadmap to implementation, which is shown in Table 4.1 is generic, based on the general timeline of the project. It will be modified and broken down in more detailed actions in the next version of this Deliverable.

Table 4.1 Initial roadmap for the implementation of activities at the Case Studies

Initial Roadmap for implementation of actions at the CS	M4	M8	M12	M18	M24	M30	M36	M42	M48
Communication and interaction mechanisms across the CSs									
Internal regular meetings for each CS									
Long list of stakeholders									
Climate projections and scenarios decided									
Data types and needs defined									
Conceptual graph of modelling requirements									
Modelling implementations for each Case Study									
Visualisation requirements defined									
Pathways to resilience defined									
Innovation packages defined and selected									
Implementation of innovation packages									
Validation of the innovation packages									

4.2. Initial monitoring plan

The monitoring plan will be carried out by the WP6 leader (KWR). At the moment, the plan is again generic (at this stage) and consists of some regular actions, but also includes some periodic actions. It can be detailed or modified according to potential needs and/or risks that may occur for specific actions and/or Case Studies, which may need closer monitoring and attention, or even remedial actions. It will also be revised for the next version of this deliverable.

Table 4.2 Initial monitoring of activities at the Case Studies

Monitoring activity	Frequency	Action	Comments
Regular meetings for all the CS	Weekly	Regular reporting of CS activities/Guidance and coordination Monitoring of the action plan	Minutes kept online, updated all the time
Periodic longer meetings with each CS	Quarterly (starting after M8, when T6.3 starts)	WP6 leaders meet with each CS separately for longer discussions, together with the leader of Task 6.3	Specific issues to be discussed and if necessary, reported back to the STC
Risk assessment	Every 6 months	Carried out by the Risk Officer with information provided by the WP6 Leader	Reporting to the STC
KPI monitoring	Every 6 months	Carried out by each CS, with guidance from Task 6.2	Each CS reports to T6.2 and to the WP6 leader Any issues are to be discussed at the STC

APPENDIX A: Minutes of the weekly meetings (M1-M4)

This is an open document noting down the main points out of the weekly meetings (Thursdays) for WP6. The meetings are organised by KWR and Task 6.1. We are recording:

- Progress for each Case Study (CS).
- Any issues.
- Any changes.

NOVEMBER 11/11/2021

All required participants were present.

Title	Main partner	Other partner(s)	Comments/Actions
CS#1: Athens Metropolitan Area	UTH		
CS#2: Mediterranean ports	AUEB		
CS#3: Main River (Germany)	LMU	VKU	
CS#4: Ohrid/Prespa Lakes	IECE	NECCA	
CS#5: Canary Islands	ULL		Revised description of 6.3.5 by November 18-Done
CS#6: Black Sea	AUTH	CTBG	
CS#7: Southern Denmark	EM	TUD	
CS#8: Torbay and Devon County	TC	UNEXE	
CS#9: Sardinia	AGRIS	UT, LMU	
Task 6.2	UT	AUEB	
Task 6.3	UNEXE	TUD	
Task 6.4	AUEB		
Task 6.5	KWR		
WP2	UT	AUEB	Guidelines to CS by November 22
WP3	TUD	LMU	
WP4	UNEXE	ICCS	
WP5	BRC		
WP7	AUEB		
WP8	GAC		

Min points and actions:

- The most urgent action for all the CS is the compilation of the stakeholder lists, which is due for January 31, 2021.
- WP2 will provide to all the Case Studies guidelines about this on **November 22, 2021**.
- Chrysi prompts us to use the Teams space for the project for all our communications and the common calendar for planned meetings and events
- General advice: Please invite other people from your Case Studies, as needed to these meetings. They are open to everyone interested.

- CS#5 will provide the modification to their CS description (due to the eruption of the volcano) before next week's meeting (provided on Friday 12/11/21).
- WP2 are planning a CS meeting for June 2022. Isabelle (WP2-leader) will provide more specifics in time.

Changes in Subtask 6.3.5 (Canary Islands).

Changes are in green:

Subtask 6.3.5: Canary Islands (M8-M45) Lead: ULL, Participants: CSIC, ELIT. Canary Islands will focus on: 1) The analysis of the water cycle (from collection to treatment) in the archipelago linked to fossil energy, thus the carbon footprint of this sector will be established (ULL); 2) The analysis of the irrigation systems used in the agricultural sector in the Canary Islands and the exploration of new natural purification systems that can be used as irrigation water (ULL); 3) **Since the hydrological cycle and agriculture in the Canary archipelago will be studied, groundwater vulnerability maps will be created precisely due to the use of fertilizers in agriculture and livestock farming in the archipelago in El Hierro and La Palma. These two islands have been selected for the following reasons: i) El Hierro is a pioneer in presenting a self-sufficient energy model (La Gorona del Viento project) and is rich in groundwater, this being the most used water resource on the island; ii) La Palma has been selected because it is an island rich in groundwater (in fact, it is the only island in the Canary archipelago that does not have desalination plants) and where agriculture is very important (especially tropical crops such as banana, mango, avocado, etc.) and, due to the volcanic eruption that began in September 2021, the situation of the aquifer is uncertain, something that is worrying since it is an island that depends on groundwater resources to guarantee the water demand of agriculture, local population and tourism. The effect of the eruption on the vulnerability of the aquifer of La Palma is still unknown, so it is desired to study in depth the effects on the aquifer in quantitative and qualitative terms (ULL, ELITTORAL);** 4) The water footprint and carbon footprint of the main crops in the Canary Islands, such as bananas, potatoes, tomatoes and vines (ULL); 5) Dissemination to society. (ULL, CSIC, ELIT).

Short description of the CS: Sustainability has three dimensions: ecological, economic and social. The current international economic and financial crisis has led to a rethinking of European policies for economic growth and employment generation. The Europe 2020 Strategy replaces the previous Lisbon Strategy, presented in 2000 and revised in 2005, with a new design to achieve a strong economy, considering the reality of the crisis, the performance of the previous strategy and the important role that European regions have to play. This is why the Intelligent Specialization Strategy of the Canary Islands (RIS3) has green growth and sustainability as one of its priorities, as outlined in the following objectives: Low-carbon economy, industrial development and energy efficiency; Ecoinnovation, agriculture, fishing and environmental protection; Bioeconomy based on Canarian biodiversity; Integration of renewable energies; and Canary Islands Natural Laboratory. The Canary Islands are immersed in a process of Ecological Transition, where establishing the starting point from the energy point of view of the main sectors of the archipelago is key to implementing measures that affect in a transversal way. Therefore, the calculation of the carbon footprint and water footprint of the agricultural sector in the Canary Islands as well as the water sector, favours the knowledge of the energy situation in the archipelago to be able to establish effective measures of sustainable governance. **In addition, a new challenge is opening up in the Canary Islands in terms of water and agriculture. The island of La Palma is suffering from a volcanic eruption that will have effects yet to be determined on the island's aquifer (and, therefore, on the availability of water resources) and on agriculture, as it has so far devastated more than 100 hectares, including banana plantations and livestock farms.**

NOVEMBER 18, 2021

Title	Main partner	Other partner(s)	Comments/Actions
CS#1: Athens Metropolitan Area	UTH		2nd meeting 17/11- geographic boundaries to be defined-ongoing. ELIAMEP organized the first activities. Structure is being defined. Specific ML defined for training activities – Seminar in Feb 22-Youth assemblies in March or May 22. Multiple activities, using the CSIC platform. Update of the resilience strategy for Athens discussed. Network of UNESCO schools.
CS#2: Mediterranean ports	AUEB		Regular meetings organized. No issues.
CS#3: Main River (Germany)	LMU	VKU	Working on the list of stakeholders-in touch with UT. Support by the board of VKU. Collecting info and data from all sources. Weekly meetings are being planned.
CS#4: Ohrid/Prespa Lakes	IECE	NECCA	Three countries working together. National studies reports are being collected for comparison purposes. Communication with stakeholders established (IECE), list of local stakeholders from previous projects obtained (IECE). First draft of stakeholder list done. First communications established. NECCA is working on the list of stakeholders. AKPT working on the list of stakeholders, a plan for activities. Reports need to be shared. Regular meetings to be considered.
CS#5: Canary Islands	ULL		Regular meetings are being organized. No issues.
CS#6: Black Sea	AUTH	CTBG	16 Nov 1st meeting. Expecting the guidelines.
CS#7: Southern Denmark	EM	TUD	29 Nov Physical meeting planned. Information afterwards.
CS#8: Torbay and Devon County	TC	UNEXE	Regular meetings established. Sequence of areas agreed. Models and structure being investigated. Overtopping/Climate change issues discussed. 2020 baseline-Projections 20-50-80-100 years considered.
CS#9: Sardinia	AGRIS	UT, LMU	Meeting with partners done on Nov 17 concerning the following points: 1) plot experiments evaluating the effects of different irrigation water supply on crop yields set up;

Title	Main partner	Other partner(s)	Comments/Actions
			2) the use of different sensors and electrovalves in order to evaluate irrigation water efficiency discussed; 3) use of different climate change scenarios and crop models assessed; Planning field activities in collaboration with seed companies and farmers Contacts with stakeholders planned-UT is also in touch
Task 6.2	UT	AUEB	Dec 2-meeting at 13.00CET for SIA/WP2 for guidelines for the long list of stakeholders. Action: Invitation to be circulated. Required presence: All the CS + End of June 2022 (physical) meeting with all the stakeholders (lists tbd) planned in Tours-2 days. Invitation will be sent
Task 6.3	UNEXE	TUD	Each CS needs to discuss internally what types of modelling they will need. We also need to know that modelling they already have (data, scenarios, modelling)
Task 6.4	AUEB		N/A
Task 6.5	KWR		N/A
WP2	UT	AUEB	Guidelines to CS by November 22-Pending
WP3	TUD	LMU	Selection of climate projections is very important-we need to be consistent and inform the EC officer. All the CS to take the lead from WP3.
WP4	UNEXE	ICCS	Common meeting WP3/WP4 update by Ralf through WP3.
WP5	BRC		N/A
WP7	AUEB		N/A
WP8	GAC	WE	Invitation for Living Labs meeting

Intervention by Giannis:

- Long list available for all the people involved in each Task and CS. Updates should go there. We need to have a look there.
- UTH (Giannis) to be informed about all the planned meetings for conflicts, or possibility to join.

NOVEMBER 25, 2021

Actions from last meeting:

- Templates/guidelines for stakeholder mapping -> to be completed and shared by Nov 22.
    - there are no questions from the participants on the guidelines.
- Overview on modelling form all case studies -> case study leaders to prepare conceptual modelling maps for their cases
    - UT is preparing a template for the case studies to support in this mapping action. This will be shared by December 2 and explained in the next meeting
    - Any activities by Cases that have already initiated this can of course continue. And can then feed this template.

There will be a WP meeting in Copenhagen (9 December). Request is for a summary of the outcomes of this meeting in the WP6 meeting of 16 December.

Title	Main partner	Other partner(s)	Comments/Actions
CS#1: Athens Metropolitan Area	UTH		2 workshops on H2020 where ARSINOE was represented. Progress on conceptual models and bilateral meetings Internal meeting on stakeholder mapping based on WP2 guidelines, longlist available, will start shortlisting with goal to define specific roles to make sure feedback with added value will be received. No issues.
CS#2: Mediterranean ports	AUEB		Conrad - Regular meetings initiated. As first step stakeholder list to be compiled and make conceptual model -> in next meeting each location will present. Next week meeting initial lists will be compiled. Plan is to have 3 pools of stakeholders (one for each port) - if merged -> consider how to organise (as multinational and issue might be port specific). No issues.
CS#3: Main River (Germany)	LMU	VKU	Next week Wednesday first meeting -> next week input on stakeholder mapping. First contacts to stakeholders established. No issues.
CS#4: Ohrid/Prespa Lakes	IECE	NECCA	Work on stakeholder list has started. Agreed to have case study meeting of all partners on monthly basis. 2 December first meeting to take place.

Title	Main partner	Other partner(s)	Comments/Actions
			To be discussed draft conceptual model, outcomes of analysis climate scenarios., Comm via email established, but this is first meeting to find common direction. No issues NECCA nothing to add to the above. Will participate in 2 dc meeting to further organise work. More feedback after dec. 2 meeting. AKT – not present.
CS#5: Canary Islands	ULL		Sampling has been done, but results not in. Developing stakeholder list based on guidelines. Roadmap deadline – Lydia – the roadmap will be a living document. It will be a timeline of activities. A guidance will be provided. Lydia is working on this. First excel is created by CS5. No issues.
CS#6: Black Sea	AUTH	CTBG	Waiting for short report from partners on activities. Guidelines on stakeholder mapping has been shared. Lydia - think about stakeholders (different groups for different sites). Also think about synergies between the different stakeholder groups. Note from Bulgaria – some contact persons might be missing – due to formation of new government. Also consider regular meetings between the partners in the case from the three countries. To be arranged.
CS#7: Southern Denmark	EM	TUD	Waiting for first meeting with all Danish partners on Monday (29 nov). 4 municipalities and DTU, coastal authority and consulting firm. Workplan will be discussed, taking stock of data available, work on stakeholder list.
CS#8: Torbay and Devon County	TC	UNEXE	Conceptual models being selected, taking stock of available data and data gaps to start collecting additional data. Cascading effects inventory being made (a list of all permutable assets being prepared ->

Title	Main partner	Other partner(s)	Comments/Actions
			this can be shared with other case studies). WP3 en WP4 meeting was held and CS7 and CS8 selected as fast track concerning data collection and modelling. No issues.
CS#9: Sardinia	AGRIS	UT, LMU	Very busy period due to planting. Work on ARSINOE - Plot-trials being set up. Meeting with Sardinian water authority and farmers to discuss assessment of impact of different practices (irrigation) on the water system. Modelling – focusing on climate scenarios – looking to WP3 for information on which climate models to use. Expanding stakeholder list – meeting with critical stakeholders next week. No issues
Task 6.2	UT	AUEB	Dec 2- meeting at 13.00CET for SIA/WP2 for guidelines for the long list of stakeholders. Action: Invitation to be circulated - done Action – the guideline also to be available as a word document – to be added to the shared drive.
Task 6.3	UNEXE	TUD	Each CS needs to discuss internally what types of modelling they will need. We also need to know that modelling they already have (data, scenarios, modelling)
Task 6.4	AUEB		N/A
Task 6.5	KWR		N/A
WP2	UT	AUEB	Guidelines to CS by November 22- shared.
WP3	TUD	LMU	Inventory and decision on needs of data for WP4. CS7 and CS8 have been selected as frontrunner cases.
WP4	UNEXE	ICCS	Common meeting WP3/WP4.
WP5	BRC		N/A
WP7	AUEB		N/A
WP8	GAC	WE	Invitation for Living Labs meeting - WP8 to be contacted to check whether anything is needed.

AOB:

- Can our Teams environment be used for communication and document sharing with stakeholders:
    - No, this is not possible. It contains documents that may not be shared with people outside the consortium. A different communications solution should be used for sharing with external stakeholders.
- We need a GDPR agreement – WP1 will develop this. Deliverable is in month 6 but has been asked to prepare a document sooner.

DECEMBER 2, 2021

Title	Main partner	Other partner(s)	Comments/Actions
CS#1: Athens Metropolitan Area	UTH		1st regular meeting: 30 November. Involvement of stakeholders discussed, also SIA approach. To ask the Municipality of Athens for the first list of stakeholders to be updated dynamically. Universities and end-users also involved as partners, which is an advantage. Discussion about the boundaries also took place and the LL. Also set up a Miro board for collecting info. Collaboration with sister projects discussed, because Athens is also a CS in IMPETUS. Data protection discussed within WP4
CS#2: Mediterranean ports	AUEB		2nd regular meeting on Dec 3. Info from previous projects is being collected. Boundaries of the CS discussed.
CS#3: Main River (Germany)	LMU	VKU	Regular meeting on Dec 1, Long list of stakeholders in preparation (ongoing) mapping to start and also looking for info about the models and tools already applied. Join meeting with all the stakeholders planned for Jan 22. Working also on the links to WP3/WP4. TBD next week
CS#4: Ohrid/Prespa Lakes	IECE	NECCA	1st meeting on Dec 2, every 2-3 weeks meetings scheduled. Working on the concept of the CS. Meeting scheduled from the 3 countries in Jan 22. Water balance model from previous research to be used. Align with WP3 about the concept. TBD nest week during the WP3 workshop.
CS#5: Canary Islands	ULL		1st meeting on Tuesday. First results (sampling) from Las Palmas after the eruption, being compared with previous data for the groundwater. First list of stakeholders in place.
CS#6: Black Sea	AUTH	CTBG	Scheduling 2nd meeting for next week to discuss about the stakeholders list and future actions.

Title	Main partner	Other partner(s)	Comments/Actions
CS#7: Southern Denmark	EM	TUD	1st local meeting on Nov 29, with also the other 3 municipalities (apart from the partners) +workshops on defining the boundaries. Common ground with the other municipalities. List expected for boundaries, stakeholders and data on Monday 6
CS#8: Torbay and Devon County	TC	UNEXE	Regular meeting Dec 1, EA guidance discussed about the future scenarios re alignment with WP3, contact with NHS (health) from another project. Initial list of stakeholders to be reviewed. Data from previous project for first numerical approaches in WP3
CS#9: Sardinia	AGRIS	UT, LMU	Access to regional climate models for WP3 to organise the activities. Activities with the local ministries and private sector planned. Meeting planned for DEC with the CBFM.
Task 6.2	UT	AUEB	See bullet points below.
Task 6.3	UNEXE	TUD	Regular WP3/WP4 long discussion about types data. Needed for the DMP
Task 6.4	AUEB		N/A
Task 6.5	KWR		N/A
WP2	UT	AUEB	See bullet points below for update
WP3	TUD	LMU	See task 6.3
WP4	UNEXE	ICCS	Data issues discussed, including data protection.
WP5	BRC		N/A
WP7	AUEB		N/A
WP8	GAC	WE	No info

- WP2 meeting about SIA-general introduction. Document circulated. Presentation by WP2 is in the WP2 subfolder (general).
- Long list of stakeholders for Jan 20, 2022. Organisations to be included, also some names, but not to put full details, because the specific stakeholder may not be selected in the end.
- WP2 workshop to move to March for all the CS or the SIA front runners only: CS#1, CS#2, CS#7, CS#8. Other CS may be added if they have the capacity to be front runners. We may have different CS as front runners in different WPs (e.g., WP7).
- ALL CS will implement the SIA methodologies.
- Front runner= Implementing in depth methodologies/actions from other WPs.

- Long list of stakeholders due for **January 20, 2022**.
- MGT: 1st meeting before Christmas to discuss this too.

DECEMBER 9, 2021

Title	Main partner	Other partner(s)	Comments/Actions
CS#1: Athens Metropolitan Area	UTH		Regular meeting done. Progress with long list of stakeholders to be completed by Dec 21. Working on the boundaries of the CS. In December of this year: "train the trainers" seminar 1st call to be announced (ELIAMEP)
CS#2: Mediterranean ports	AUEB		2nd meeting/guidelines for long list of stakeholders presented to all ports. 20/12 next meeting, roadmaps related to the outcomes of the Deep KIC demonstrator. Valencia not present at the previous meeting.
CS#3: Main River (Germany)	LMU	VKU	Connecting with stakeholders. Preparing a meeting with stakeholders for January 2022. Local meetings are taking place.
CS#4: Ohrid/Prespa Lakes	IECE	NECCA	IECE: Each organisation (3 countries) communicating with their own stakeholders and will join later. Modelling: meeting with CS partners, the views of each collected. Another meeting before the end of the year planned. NECCA: Communication with local stakeholders (translated text), advert for position for new researcher.
CS#5: Canary Islands	ULL		Meeting with public admin to get data. Dates for sampling set. Looking for more stakeholders from the public domain, who are interested about the water models to be developed by CS#5.
CS#6: Black Sea	AUTH	CTBG	Tuesday 7/12 meeting. Guidelines presented. Each CS partner has a separate long list of stakeholders, to be sent on Dec 21 to the CS Leader (AUTH). Long list to be

Title	Main partner	Other partner(s)	Comments/Actions
			organised, also list of activities to be provided. Guidelines for roadmap needed.
CS#7: Southern Denmark	EM	TUD	Boundaries/data/long list from the 4 communities received and sent to TUD. Long term timelines 100 years and shorted (50 years) applied usually.
CS#8: Torbay and Devon County	TC	UNEXE	Permutable resources modelling is being investigated with UNEXE (Mehdi) and KWR (Alex). Links with a NL related research project under investigation KWR (Alex). Guidelines from EA for 100 years design.
CS#9: Sardinia	AGRIS	UT, LMU	Proceeding with stakeholder engagement, to be formalised next weeks (public sector), + producers, but also stakeholders that pollute. CBSM (water agency for S. Sardinia) to set up activities. Help by Isabelle needed next week.
Task 6.2	UT	AUEB	Workshop in June too late. Adaptation to the needs of each CS.
Task 6.3	UNEXE	TUD	See points below
Task 6.4	AUEB		N/A
Task 6.5	KWR		N/A
WP2	UT	AUEB	Case by Case to set up the dates. Possible to be merged for some CS. Between March-May 22. Propose dates by the end of this year.
WP3	TUD	LMU	See points below
WP4	UNEXE	ICCS	See points below
WP5	BRC		N/A
WP7	AUEB		N/A
WP8	GAC	WE	

- The WP3 daily workshop takes place on the same day in Copenhagen. Martin Drews (WP3 Leader) updates the CS about matters related to WP3, which were discussed in the morning.

- Modelling techniques to be applied to each CS will be defined in collaboration with the CS, I.e., the CS will decide what's needed.
- Baseline for climate projections needs to be the same for all the CS. The arguments are presented by Martin (e.g., SSP scenarios). Formal request to be sent to the CS for selection. Each CS will have the flexibility for ADD more scenarios, according to their needs and perceptions.
- Alignment on data collection by all the CS.
- Common pathways with the sister projects discussed (common ground) initiated by UTH.

DECEMBER 16, 2021

Title	Main partner	Other partner(s)	Comments/Actions
CS#1: Athens Metropolitan Area	UTH		Regular meeting took place last Tuesday. WP2 presented the stakeholders issues. Developing a new tag to define all the stakeholders online. Discussion about Commercial Banks as stakeholders (finance/banking sector). Eleni (Myrivili) presented the plan for the region to be taken into account for setting up the boundaries for the CS. The call for "train the trainers" to be published, with the participation of various people from the consortium as lecturers. Linking also with the College of Athens. Developed Miro board for the components of the CS + models and data sets to be fitted there.
CS#2: Mediterranean ports	AUEB		Working on the long list of stakeholders. First draft for Piraeus uploaded. Next week long lists for the other ports expected. TBD whether there will be 1 or 3 meetings with the 3 ports for WP2.
CS#3: Main River (Germany)	LMU	VKU	Preparing the long list of stakeholders. Meeting with WP2 planned. Meetings with local stakeholders planned for mid-January 2022 for engagement and setting the frame.

Title	Main partner	Other partner(s)	Comments/Actions
CS#4: Ohrid/Prespa Lakes	IECE	NECCA	Working on the stakeholder list (35 so far). All contacted. 2 meetings with main stakeholders took place. Working on stakeholder details. January 2022: FtF meetings with stakeholders planned (North Macedonia side). Albania: Collecting stakeholders. Greece: Stakeholder list-working on it 10 local stakeholders defined. More stakeholders are being defined for pre-selection.
CS#5: Canary Islands	ULL		Meeting with WP2 tomorrow discussing the draft. Received data (marine/saline intrusion to the aquifers).
CS#6: Black Sea	AUTH	CTBG	Meeting with CS partners taken place. WP2 template presented and waiting for feedback (Dec 21 deadline). Preparing the roadmap.
CS#7: Southern Denmark	EM	TUD	Working on the long list of stakeholders. Weekly meeting established. Discussion with T3.1 (Mehdi).
CS#8: Torbay and Devon County	TC	UNEXE	Initial long list of stakeholders (draft) prepared and circulated internally. Details on data types in discussion with CS#7 and WP3. Links to early warning systems examined. Contact with Health Service have taken place for potential links.
CS#9: Sardinia	AGRIS	UT, LMU	Searching for stakeholders (names and activities). Meetings taking place with various stakeholders, farmers and local authorities + regional associations for LL (as candidates). Departments defined in the Ministry to be included as stakeholders (separately). Meeting with WP2 took place.
Task 6.2	UT	AUEB	See below
Task 6.3	UNEXE	TUD	Data questionnaire in preparation

Title	Main partner	Other partner(s)	Comments/Actions
Task 6.4	AUEB		N/A
Task 6.5	KWR		N/A
WP2	UT	AUEB	See below- New person from January.
WP3	TUD	LMU	Meeting between WP3-WP4 took place last week for the framework on climate projections. Info and data on water governance needed from the CS about water policies.
WP4	UNEXE	ICCS	See above
WP5	BRC		2 new people to join from January 2022 to get to know the people at the CS (for BRC)
WP7	AUEB		
WP8	GAC	WE	

- Decision to cancel on December 23, 2021 and December 30, 2021.
- WP2 in touch with each CS (separate meetings) until mid-January, 2022.
- Possible inclusion of the business, commercial, banking and insurance, re-insurance sector to be examined for each CS (as potential stakeholders).
- Data info questionnaire in preparation (ICCS and ATHENA) to be circulated for the preparation of the DMP and the knowledge graphs.
- Which person from each CS will investigate the water governance issues at each CS? (question from WP2).
- Dedicate time for each CS (one at a time) at the WP6 meetings for longer presentations. Not regular, but as they are ready (suggestion by Ralf).

DECEMBER 23, 2021 (Meeting cancelled-Christmas Break)

JANUARY 6, 2022 (Cancelled because it was a holiday in many countries and more people were away for a break

JANUARY 13, 2022

Title	Main partner	Other partner(s)	Comments/Actions
CS#1: Athens Metropolitan Area	UTH		Meeting last Tuesday. Close to finalising the long stakeholder list. Miro board developed for all the components of the CS (e.g. conceptual SDM). Geospatial analysis will also be included (ICCS), statistical data (national level) to be included for vulnerabilities etc.
CS#2: Mediterranean ports	AUEB		Finalising the long list for Limassol and Piraeus. Minor issue with Valencia (break in comms). Meeting with Climate KIC Hub Leaders (Ports). MoU to be signed for Piraeus (synergies). Initial models –CRISIS ADAPT I& II models for ports.
CS#3: Main River (Germany)	LMU	VKU	Progress with long stakeholder list (almost ready). Jan 24 1st meeting with local stakeholders. Early feedback from stakeholders expected.
CS#4: Ohrid/Prespa Lakes	IECE	NECCA	Finished with the long list of stakeholders (MK). Waiti g for the lists from GR (finalising it) and AL. Meeting with WP2 (Alice) took place in December 20, 2021. Meeting with MK Ministries planned for data for water management and policies.
CS#5: Canary Islands	ULL		Meeting with WP2 (17 December 2021). Focusing on the Nexus for the Living Lab. Stakeholder (long list) prepared. Meeting with stakeholders prepared. Preparing also a presentation for EGU in March (Austria).
CS#6: Black Sea	AUTH	CTBG	All long lists (from all the countries involved) are being collected and sorted out for potential duplicate entries. Suggestion for a separate list for stakeholders across

Title	Main partner	Other partner(s)	Comments/Actions
			countries. Meeting next week for the continuation.
CS#7: Southern Denmark	EM	TUD	Long list prepared. Final discussion next week. Different municipalities, so probably a need for separate lists for each + one "across". Suitable for discussing about the LL organisational aspects.
CS#8: Torbay and Devon County	TC	UNEXE	Long list revised +additions from WRT. Computational engine is being investigated for cascading failures. Meeting Torbay+UNEXE+Devon County Council for synergies with the local/national problems. Meeting with NHS for health effects (cascading)
CS#9: Sardinia	AGRIS	UT, LMU	Planting experimental fields (since December)-relevant for ARSINOE. Meeting with farmer cooperative for experimental technical activities. Meeting with stakeholders on Jan 10 to select stakeholders for the long list. To be given to Isabelle.
Task 6.2	UT	AUEB	
Task 6.3	UNEXE	TUD	
Task 6.4	AUEB		
Task 6.5	KWR		
WP2	UT	AUEB	Face-to-Face meetings are being organised. SIA workshop with frontrunners-separate meeting earlier, if possible. Dates to be announced (22-23 or 23-24 March 2022-potential dates for all the CS. If possible, it will be physical meeting.
WP3	TUD	LMU	Organised event about the climate scenarios on January 17, 2022 (9-11am). Update by Ralf. Concept of RCPs to be presented.
WP4	UNEXE	ICCS	Progress about the data types collection.

Title	Main partner	Other partner(s)	Comments/Actions
WP5	BRC		I-catalist joined with BRIGAID CONNECT. Workshop is to be arranged with innovators end of February 2022
WP7	AUEB		
WP8	GAC	WE	

JANUARY 20, 2022

Title	Main partner	Other partner(s)	Comments/Actions
CS#1: Athens Metropolitan Area	UTH		No meeting this week, because of the WP3 workshop on Monday. Long list finalised. Online brainstorming has started for the modelling needs and the conceptual model. Miro board shared also with WP3 and WP4.
CS#2: Mediterranean ports	AUEB		No meeting this week, because of the WP3 workshop. Long list drafted for Piraeus and Limassol. Valencia: re-established connection. List may be delayed for Valencia.
CS#3: Main River (Germany)	LMU	VKU	Next Monday meeting with the stakeholders. Exchanges with the stakeholders have started.
CS#4: Ohrid/Prespa Lakes	IECE	NECCA	Long lists finished. Meeting on 18/1 with the 3 partners to harmonize the long list. Translation issues have been discussed about the LLs. 4 separate lists. Meeting with the Ministry of Environment planned. Meeting with WP3 about the modelling.
CS#5: Canary Islands	ULL		Long list received. Internal meeting on Tuesday with WP3, discussion about the modelling (aquifer and sea-level rise as main issues). Possible synergies with other CS that have also sea-level rise concerns.
CS#6: Black Sea	AUTH	CTBG	Finalising the long list (about 300 entries). Meetings

Title	Main partner	Other partner(s)	Comments/Actions
			(separate) with each country involved to identify the issues.
CS#7: Southern Denmark	EM	TUD	Meeting yesterday with all the DK partners and the 4 communities. Regular 2 weekly meeting arranged. Discussion about the LL and the modelling and scaling down for each CS.
CS#8: Torbay and Devon County	TC	UNEXE	Long list finished. Meeting on Wednesday. Models and structure mapped out. Looking into expansion to future growth investigated, as well as the climate predictions with local requirements. Synergies with TRANSFORMAR (common region) discussed (and also with other local projects).
CS#9: Sardinia	AGRIS	UT, LMU	Long list of stakeholders sent to WP2. Communication with the regional Ministry of Agriculture about them being included in the long list. Meeting with regional Ministry of Environment planned. Technical activities on farm to be completed this week.
Task 6.2	UT	AUEB	Discussion about the workshop for training the CS leaders for SIA and LL. March 23 and March 24, 2022. It will be a physical meeting (if possible) in Tours-France. All the CS leaders together. Required to attend, ideally 2 representatives from CS at least (facilitators). At least 1 person, if this is not possible.
Task 6.3	UNEXE	TUD	
Task 6.4	AUEB		
Task 6.5	KWR		
WP2	UT	AUEB	CS to fill in the template too, along the long list.
WP3	TUD	LMU	Workshop on climate predictions organised on Jan 17 by LMU and TDU
WP4	UNEXE	ICCS	

Title	Main partner	Other partner(s)	Comments/Actions
WP5	BRC		
WP7	AUEB		
WP8	GAC	WE	

LVL: General update on horizontal activities.

JANUARY 27, 2022

Title	Main partner	Other partner(s)	Comments/Actions
CS#1: Athens Metropolitan Area	UTH		Ralf/Martin attending the meeting for CS#1, participation of NOA too: discussion on climate data. CS#1 will prepare their own data. Flood and Forest fires assessment discussed. Under discussion. Air pollution will be addressed, also heat islands; linked to weather conditions; on top of climate data. Diurnal temperature also to be taken into account related to NBS. Another meeting is needed.
CS#2: Mediterranean ports	AUEB		Friday meeting final version of the long list discussed. CS#1 also in this meeting about the miro board. Potentially to be adopted also by this CS. Forthcoming workshop (WP2) discussed related to LLs. One representative from each port to be present at the workshop (TBD with WP2). The issue is whether there will be one or three LLs.
CS#3: Main River (Germany)	LMU	VKU	Monday meeting with the main (10) stakeholders to explain the project and discuss relevant topis. Water availability and water quality are concerns. Focus on droughts. Hydro-services and energy potential also discussed, also how to include additional stakeholders. Added actors to the stakeholder list. Discussion about the scenarios with the Ministry.

Title	Main partner	Other partner(s)	Comments/Actions
CS#4: Ohrid/Prespa Lakes	IECE	NECCA, AKT	List finished. MK meeting with Department of Water. Meeting with Department of CC planned. LLs discussed related to translation issues. EL: discussion about data needed for the model (IECE), in communication with NOA to provide the climate data to all the partners of CS#4 to run the model for the EL areas.
CS#5: Canary Islands	ULL		Meeting with a NGO stakeholder (farming) experts on LLs. Planning to buy some sensors to monitor in both islands to monitor the aquifers. Sea-level rise and location of crops to be discussed.
CS#6: Black Sea	AUTH		Long list completed. Meetings with the partners from the other countries have started. Background/data for each partner need to be assessed and also their issues. Starting to define the roadmap. Looking for connection points for the virtual watershed.
CS#7: Southern Denmark	EM	TUD	No new meetings. Meeting with WP2 to clarify about the LL. Meeting with WP3 planned.
CS#8: Torbay and Devon County	TC	UNEXE	Meeting on Wednesday. Focusing on cascading modelling from previous projects. Meeting also with NHS for the impact on health (flood impacts), including mental health issues. Discussing with a hospital in Portsmouth for related cascading effects. Discussing with WRT for the possibility of the stakeholder meeting win common with TRANSFORMAR CS.
CS#9: Sardinia	AGRIS	UT, LMU	Long list defined. Possible to find ala other stakeholders, if needed. Discussion about climate data and scenarios with WP3. Meeting about the selection of the sensor for monitoring the irrigation.
Task 6.2	UT		Discussion about the number of LLs for transboundary CSs.

Title	Main partner	Other partner(s)	Comments/Actions
			Probably 2 sub-LLs or “twinning” the LLs.
Task 6.3	UNEXE	TUD	
Task 6.4	AUEB		
Task 6.5	KWR		
WP2	UT	AUEB	Update on the workshop in March (3 options proposed-21-22-23-24 March possible dates)
WP3	TUD	LMU	TUD-LMU discussing about climate data and modelling with all.
WP4	UNEXE		WP4 discussions with WP2 about the co-design of the dashboard
WP5	BRC		
WP7	AUEB		
WP8	GAC	WE	

- Meeting with sister projects about climate scenarios and downscaling (26/01/22) and whether we are all going to follow similar/same approaches. ARSINOE (LMU/TUD) presented the selections for ARSINOE. An action group has been created that will discuss this further. The other projects were relatively unprepared.

APPENDIX B: LONG LIST OF STAKEHOLDERS

Case Study #1: Athens Metropolitan Region

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
1	*Environmental /Climate*	*Government /Policy Makers*	*Ministry of Environment and Climate Change*	*National*	*No*	*UTH*
2	*Environmental /Climate*	*Government /Policy Makers*	*National Environment and Climate Change Agency (NECCA - partner in the project)*	*National*	*No*	*UTH*
3	*Education*	*Government /Policy Makers*	*Hellenic Ministry of Education and Religious Affairs - Institute of Educational Policy*	*National*	*No*	*UTH*
4	*Energy*	*Government /Policy Makers*	*Greek Ministry of the Environment, Energy and Climate Change (MEGR)*	*National*	*No*	*UTH*
5	*Consulting– Spatial Planning*	*Government/Policy Makers*	*Association of Greek Regions (EN.P.E.)* *Region of Attica*	*Regional*	*No*	*UTH*
6	*Education*	*Government /Policy Makers, Local Citizen*	*Regional Centres of Educational Planning*	*Regional*	*No*	*UTH*
7	*Education*	*Local Citizen*	*Directorates of Primary, Secondary and Tertiary Education of Athens*	*Local*	*No*	*UTH*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
8	*Education*	*Government/Policy Makers*	*Centres for Education of Sustainability*	*Regional*	*No*	*UTH*
9	*Directorate of Strategic Planning, Resilience, Innovation and Documentation*	*Government/Policy Makers, Local Citizen*	*Municipality of Athens and 40 municipalities of the AMA*	*Local*	*Yes*	*UTH*
10	*Societal sector, Education*	*Local Citizen*	*Hellenic Foundation for European and Foreign Policy (Eliamep partner in the project)*	*Local*	*No*	*UTH*
11	*Education*	*Research /Academia, Local Citizen*	*Universities based in Greece*	*Local*	*No*	*ELIAMEP*
12	*Education*	*Local Citizen*	*Secondary and tertiary education students*	*Local*	*No*	*ELIAMEP*
13	*Education*	*Local Citizen*	*Secondary education teachers and municipal employees*	*Local*	*Yes*	*ELIAMEP*
14	*Tourism*	*Local Citizen*	*Athens Conventions and Visitors Bureau*	*Local*	*No*	*UTH*
15	*Tourism*	*Local Citizen*	*Global Sustainable Tourism Council in Athens*	*International*	*No*	*UTH*
16	*Consulting, Engineering*	*Business /Industry*	*Environmetrics Ltd*	*Local*	*No*	*UTH*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
17	*Engineering sector*	*Local Citizen*	*Technical Chamber of Greece (TEE-TCG)*	*Local*	*No*	*UTH*
18	*Climate*	*Local Citizen*	*The Green Tank*	*Local*	*No*	*UTH*
19	*Business, Trade*	*Local Citizen*	*Athens chamber of tradesmen*	*Local*	*No*	*UTH*
20	*Environmental*	*NGO/Association, Local Citizen*	*Greenpeace*	*Local*	*No*	*UTH*
21	*Environmental*	*NGO/Association, Local Citizen*	*WWF*	*Local*	*No*	*UTH*
22	*Societal*	*SCO/Association, Local Citizen*	*Citizens Inspectorate for Sustainable Development*	*Local*	*No*	*UTH*
23	*Citizen science, Innovation sector*	Research /Academia, *Local Citizen,*	Action	*Local*	*No*	*UTH*
24	*Societal*	*Local Citizen*	synAthina	*Local*	*No*	*UTH*
25	*Education*	*Research /Academia*	Athens College	*Local*	*No*	*UTH*
26	*Environment*	*NGO/Association, Local Citizen*	Green Cross International	*Local*	*No*	*UTH*
27	*Consulting, Innovation*	*Research /Academia*	Resilient Cities Network (R-Cities—partners in the project)	*International*	*No*	*UTH*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
28	*Civic Engagement*	*Research /Academia, Business /Industry*	Civil society	*Local*	*No*	*UTH*
29	*Journalism*	*Business /Industry, Local citizens*	*Media*	*Local*	*No*	*UTH*
30	*Financing*	*Business /Industry*	*Bank*	*Local*	*No*	*UTH*
31	*Societal, Innovation*	*Business/Industry, Local citizens*	*Wind of Renewal* *https://anemosananeosis.gr/*	*Regional*	*Yes*	*UTH/NOA*
32	*Tourism, Recreation, Travel*	*Business/Industry, Local citizens*	*Athens by bike* *https://athensbybike.com/*	*Regional*	*Yes*	*UTH/NOA*
33	*Transportation sector, Micro mobility*	*Business/Industry, Local citizens*	*Kineo* *https://kineo.gr/*	*Local/Regional*	*No*	*UTH/NOA*
34	*Civic Engagement, Innovation*	*Business/Industry, Local citizens*	*Novoville* *www.novoville.com*	*Local/Regional*	*No*	*UTH/NOA*
35	*Civic Engagement, Innovation*	*NGO/Association, Local citizens*	*Atenistas* *https://atenistas.wordpress.com/*	*Local/Regional*	*No*	*UTH/NOA*
36	*Transportation*	*Government/Policy Makers*	*OASA S.A.* *https://www.oasa.gr/en/*	*Regional*	*No*	*UTH/NOA*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
37	*Environmental Finance*	*Government/Policy Makers*	*Green Fund* *https://prasinotameio.gr/*	*National*	*Yes*	*UTH/NOA*
38	*Health,* *Well-being*	*Research/Academia*	*NKUA* *School of Medicine* *Department of Hygiene, Epidemiology* *and Medical Statistics* *https://dehems.med.uoa.gr/language/en/*	*National*	*Yes*	*UTH/NOA*
39	*Built Environment Sector,* *Consulting*	*Business/Industry*	*Doxiadis Associates* *Consultants on Development and Ekistics* *http://www.doxiadis.com/page.php?id=1*	*Local*	*Yes*	*UTH/NOA*
40	*Cultural Heritage and Environment*	*NGO/Association*	*ELLINIKI ETAIRIA* *Society for the Environment and Cultural Heritage*	*Local/Regional*	*Yes*	*UTH/NOA*
41	*Consulting*	*Business/Industry*	*ADENS* *Advanced Environmental Studies* *https://www.adens.gr/en/*	*Local/Regional*	*Yes*	*UTH/NOA*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
42	*Contemporary lighting sector, consulting*	*Business/Industry*	*Creative Lighting* *https://creativelighting.gr/work/adrianne-aqueduct/*	*Local*	*No*	*UTH/NOA*
43	*Health*	*Government /Policy Makers*	*Ministry of Health* *https://www.moh.gov.gr/*	*National*	*No*	*UTH/NOA*
44	*Health*	*Government /Policy Makers*	*NPHO (National Public Health Organization)* *https://eody.gov.gr/en/npho/*	*National*	*Yes*	*UTH/NOA*
45	*Climate Crisis*	*Government /Policy Makers*	*Special Scientific Committee on Climate Change*	*National*	*Yes*	*UTH/NOA*
46	*Climate*	*Government /Policy Makers*	*Directorate of Climate Change and Air Quality* *Department of Air Quality*	*National*	*Yes*	*UTH/NOA*
47	*Technology, Consulting*	*Business/Industry*	*Draxis S.A.* *https://draxis.gr/*	*National*	*Yes*	*UTH/NOA*
48	*Consulting*	*NGO/Association*	*SUSTAINABLE CITY* *https://www.sustainable-city.gr/eng.html*	*(Inter)National*	*Yes*	*UTH/NOA*
49	*Culture, Climate Crisis*	*Government /Policy Makers*	*Coordination unit of climate change impacts on cultural*	*(Inter)National*	*Yes*	*UTH/NOA*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
			heritage: facing the challenge *https://ccich.gr/*			
50	*Environmental, Climate Crisis*	*Research /Academia*	*Greek Geo Office* *http://www.greekgeo.noa.gr/v2/*	*National*	*Yes*	*UTH/NOA*
51	*Consulting, Innovation,*	*Research /Academia*	*BEYOND centre of excellent* *http://beyond-eocenter.eu/index.php*	*National*	*Yes*	*UTH/NOA*
52	*Atmospheric Composition, Climate Change*	*Research /Academia*	PANACEA	*National*	*Yes*	*UTH/NOA*
53	*Ecosystem Services, Biodiversity*	*Research /Academia*	*LTER-Greece* *https://www.lter-greece.gr/*	*National*	*Yes*	*UTH/NOA*
54	*Ecosystem Services, Biodiversity*	*Research /Academia*	*LIFE WATCH* *https://www.lifewatch.eu/*	*(Inter)National*	*No*	*UTH/NOA*
55	*Ecosystem Services, Biodiversity*	*NGO/Association*	*HESP (HELLENIC ECOSYSTEM SERVICE PARTNERSHIP)* *https://www.es-partnership.org/community/regional-chapters/south-east-europe/greece-hesp/*	*National*	*Yes*	*UTH/NOA*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
56	*Tourism*	*NGO/Association*	*SETE* *https://sete.gr/en/*	*National*	*No*	*UTH/NOA*
57	*Tourism*	*Government /Policy Makers*	*Ministry of Tourism* *https://mintour.gov.gr/en/archiki-english/*	*National*	*No*	*UTH/NOA*
58	*Construction, Sewerage and Public Areas*	*Policy makers /Authorities*	*Directorate of Roads and public spaces*	*Local*	*Yes*	*City of Athens*
59	*Urban Planning*	*Policy makers /Authorities*	*Directorate of Urban Planning*	*Local*	*Yes*	*City of Athens*
60	*Sustainability, Innovation*	*Policy makers /Authorities*	*Directorate of Strategic Planning*	*Local*	*Yes*	*City of Athens*
61	*Social Solidarity*	*Policy makers /Authorities*	*Directorate of Social Services*	*Local*	*Yes*	*City of Athens*
62	*Consulting, Greening*	*Policy makers /Authorities*	*Directorate of Greening*	*Local*	*Yes*	*City of Athens*
63	*Health*	*Policy makers /Authorities*	*Directorate of Public Health*	*Local*	*Yes*	*City of Athens*
64	*Engineering*	*Civil society*	*KYADA*	*Local*	*Yes*	*City of Athens*
65	*School infrastructure*	*Policy makers /Authorities*	*Directorate of Buildings and Schools*	*Local*	*Yes*	*City of Athens*
66	*Civil security*	*Policy makers /Authorities*	*Department of Civil Protection*	*Local*	*Yes*	*City of Athens*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
67	*Electrical Infrastructure*	*Policy makers /Authorities*	*Directorate of Electrical Works and Infrastructure*	*Local*	*Yes*	*City of Athens*
68	*Waste Management*	*Policy makers /Authorities*	*Directorate of Waste Management*	*Local*	*No*	*City of Athens*
69	*Computer Development information systems and infrastructures*	*Policy makers /Authorities, Business*	*IT MUNICIPAL AGENCY*	*Local*	*Yes*	*City of Athens*
70	*Financing, Consulting*	*NGO/Association*	*Athens Partnership*	*Local*	*Yes*	*City of Athens*
71	*Consulting, Management*	*Policy makers /Authorities*	*Athens Development, Destination and Management Agency*	*Local*	*Yes*	*City of Athens*
72	*Consulting*	*Policy makers /Authorities*	*General Manager of Municipality*	*Local*	*Yes*	*City of Athens*
73	*Civil society*	*Policy makers /Authorities, Local citizens*	*Volunteers Network*	*Local*	*Yes*	*City of Athens*
74	*Consulting, Climate*	*Policy makers /Authorities*	*Region of Attica, General Directorate of Climate Change and Environment*	*Regional*	*Yes*	*City of Athens*
75	*Water*	*Business/Utility*	*EYDAP Water and Sewage Company*	*Regional*	*Yes*	*City of Athens*
76	*Environment*	*Policy makers /Authorities*	*Ministry of Environment & Energy*	*National*	*Yes*	*City of Athens*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
77	*Civil protection*	*Policy makers /Authorities*	*Ministry of Civil Protection and Climate Crisis*	*National*	*Yes*	*City of Athens*
78	*Digital gov*	*Policy makers /Authorities*	*Ministry of Digital Governance*	*National*	*Yes*	*City of Athens*
79	*Knowledge & Research*	*Research /Academia*	*National Observatory of Athens* *(partner in the project)*	*National*	*Yes*	*City of Athens*
80	*Knowledge & Research*	*Research /Academia*	*NTUA*	*N/A*	*Yes*	*City of Athens*
81	*Knowledge & Research* *Innovation*	*Research /Academia*	*ATHENA*	*N/A*	*Yes*	*City of Athens*
82	*Knowledge & Research* *Societal*	*Research /Academia*	*National Centre for Social Research*	*N/A*	*Yes*	*City of Athens*
83	*Statistics*	*Research /Academia, Local citizens*	*Greek Statistical Agency*	*N/A*	*Yes*	*City of Athens*
84	*Social geography*	*Local citizens*	*Social Atlas*	*N/A*	*Yes*	*City of Athens*
85	*Climate,* *Consulting*	*Research /Academia*	*Climate Lab*	*N/A*	*Yes*	*City of Athens*
86	*Education*	*Association*	*Youth Council (TBC)*	*N/A*	*No*	*City of Athens*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
87	*Consulting*	*NGO/Association*	*Organisation Earth*	*N/A*	*Yes*	*City of Athens*
88	*Consulting, Social innovation*	*Business*	*Impact Hub*	*N/A*	*Yes*	*City of Athens*
89	*Social Cooperative*	*Business*	*Common Space*	*N/A*	*Yes*	*City of Athens*
90	*Consulting*	*Policy makers /Authorities*	*Central Association for Local Government*	*National*	*Yes*	*City of Athens*
91	*Financing, Consulting, Management*	*Policy makers /Authorities*	*Green Fund (Hellenic)*	*National*	*Yes*	*City of Athens*
92	*Economic, Consulting*	*Knowledge & Research NGO*	*Institute of Economic and Industrial Research*	*Other*	*Yes*	*City of Athens*
93	*Business, Trade*	*Local citizens*	*American-Hellenic Commercial Chamber*	*Other*	*Yes*	*City of Athens*
94	*Tourism*	*Association*	*Association of Tourism Enterprises*	*Other*	*No*	*City of Athens*
95	*Consulting*	*NGO/Association*	*Urban Land Institute (Greek and Cyprus Chapter)*	*Other*	*Yes*	*City of Athens*
96	*Property development*	*Business*	*Molongo Architects*	*Other*	*Yes*	*City of Athens*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
97	*Landscape Architecture*	*Business*	*Doxiadis+*	*Other*	*Yes*	*City of Athens*
98	*Landscape Architecture*	*Business*	*Elli Pagkalou Architects*	*Other*	*Yes*	*City of Athens*
99	*Architectural design*	*Business*	*Fontas Dialeismas Architect*	*Other*	*Yes*	*City of Athens*
100	*Spatial Planning*	*Business*	*Thumios Papagiannis*	*Other*	*Yes*	*City of Athens*
101	*Architectural design*	*Business*	*bm-archilab*	*Other*	*Yes*	*City of Athens*
102	*Philanthropy*	*Public-benefit nonprofit organization*	*Stavros Niarchos Foundation*	*Other*	*Yes*	*City of Athens*
103	*Water*	*Government /Policy Makers*	*Ministry of Environment and Energy – General Directorate of Water*	*National*	*No*	*NECCA*
104	*Environmental*	*Government /Policy Makers*	*Ministry of Environment and Energy - Directorate of Management of Natural Environment and Biodiversity*	*National*	*Yes*	*NECCA*
105	*Built Environmental*	*Government /Policy Makers*	*Ministry of Environment and Energy – General Directorate of Urban Planning*	*National*	*No*	*NECCA*

a/a	**Sector** *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academic, Local Citizen, NGO/Association]*	**Name of Stakeholder or Organisation** *[e.g. National Ministry of Water Resources]*	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/ No]*	**Completed by** *Partner*
106	*Forestry sector*	*Government /Policy Makers*	*Ministry of Environment and Energy – General Directorate of Forests and Forest Environment*	*National*	*Yes*	*NECCA*
107	*Health Sector*	*Government /Policy Makers*	*Ministry of Health – Directorate of Public Health and Environmental Hygiene*	*National*	*No*	*NECCA*
109	*Environment/Health Sector*	*Research /Academia*	*National Centre for Scientific Research "Demokritos" - Environmental Research Laboratory (LIFE RESYSTAL)*	*National*	*Yes*	*NECCA*

Case Study #2: Mediterranean Ports

Stakeholders					
Sector	**Category**	**Name of Stakeholder or Organization**	**Scale**	**Existing Contact**	**Completed by**
[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]	*[Business/Industry, Government/Policy Makers, Research/Academia, Local Citizen, NGO/Association]*	*[e.g. National Ministry of Water Resources]*	*[Local, National, Regional, International]*	*[Yes/ No]*	*Partner*
1. Port of Piraeus					
Maritime Energy	Government/ Policy Makers	Ministry of Shipping and Island Policy	National	Yes	AUEB
Maritime Energy Waste	Government/Policy Makers	Region of Attica	Regional	Yes	AUEB
Maritime Energy	Government/Policy Makers (Regulatory Authority)	Municipality of Piraeus	Local	Yes	AUEB
Maritime Energy Construction (Ports Infrastructure) Technology	Research/ Academia	National Technical University of Athens (NTUA)	National	Yes	AUEB

Maritime Energy (Policy Engagement)	Research/ Academia	Panteion University of Social & Political Sciences	National	Yes	AUEB
Maritime Energy Construction (Ports Infrastructure)	Research/ Academia	Centre for Research and Technology (CERTH)	National	Yes	AUEB
Finance Maritime Energy	NGO/Association (Port Authority)	Piraeus Port Authority, Department of Environment (PPA)	Local	Yes	AUEB
Finance Technology	Business/Industry	Hellenic Development Bank of Investments (HDBI, former TANEO)	National	Yes	AUEB
Energy Non-Formal Education (Sustainable Urban Development)	Local Citizen	Organisation Earth	Local	Yes	AUEB
Maritime Energy Waste	NGO/Association	A.C. Laskaridi Charitable Foundation	Local	Yes	AUEB
Telecommunication Education Technology	NGO/Association	Hellenic Association of Mobile Application Companies	Local	Yes	AUEB
Media Technology Maritime	Business/Industry	Koinoniki	Local	Yes	AUEB

Media Technology	NGO/Association	Elculture	Local	Yes	AUEB
Maritime Energy	NGO/Association	General Confederation of Workers of Greece	National	Yes	AUEB
Maritime (Shipping) Energy Construction (Ports Infrastructure)	NGO/Association	GLOBAL Maritime Enterprises	International	Yes	AUEB
Maritime (Shipping) Energy Construction (Ports Infrastructure)	Business/Industry	ARISTA Shipping S.A.	Local	Yes	AUEB
Maritime Energy	Government/ Policy Makers	Centre for Renewable Energy Sources & Saving (CRES)	National	Yes	AUEB
Maritime Energy Waste	SME	Antipollution	Local	Yes	AUEB
Energy	Business/Industry	Public Gas Corporation of Greece (DEPA) S.A.	National	Yes	AUEB
Energy	Government/ Policy Makers	Public Power Corporation S.A.	National	Yes	AUEB
Energy	Business/Industry	Fortisi	Local	Yes	AUEB

Construction (Ports Infrastructure, Mobility)					
Energy Transportation	Business/Industry	PPA Consultants	Local	Yes	AUEB
Energy Agriculture	Business/Industry	Climazul Energy ltd	Local	Yes	AUEB
Maritime	Business/Industry	DNV-GI	Local	Yes	AUEB
Communication Technology	Business/Industry	BEE Group	National	Yes	AUEB
Maritime Technology	Business/Industry	ITML	Local	Yes	AUEB
Maritime (Shipping) Technology	Business/Industry	Lloyd's Register	Local	Yes	AUEB
Maritime (Shipping) Technology Energy	Business/Industry	MESTOR	Local	Yes	AUEB
Maritime Technology	Business/Industry	Aboard Naval Architects P.C.	Local	Yes	AUEB
Maritime Energy	Business/Industry	AXON Envirogroup	National	Yes	AUEB

Waste					
Real Estate	Business/Industry	DIMAND Developers	Local	Yes	AUEB
Circular Economy	Business/Industry	Citypost	Local	Yes	AUEB
Energy	Business/ Industry	Energy Exchange Group	National	Yes	AUEB
International Business Relationships	Government/ Policy Makers	Enterprise Greece	National	Yes	AUEB
Energy	Business / Industry	Eunice Energy Group	National	Yes	AUEB
Maritime	Business / Industry	ITML	Local	Yes	AUEB
Maritime Technology	NGO/Association	Academy of Entrepreneurship	Local	Yes	AUEB
Maritime	NGO/Association	Aikaterini Laskaridis Foundation	Local	Yes	AUEB
Maritime (Shipping)	NGO/Association	AMSCC (Athens Multinational Sealift Coordination Center)	Local	Yes	AUEB
Maritime	NGO/Association	Archipelago	Local	Yes	AUEB
All	NGO/Association	Association of Industries in Attica-Piraeus (SEV)	Regional	Yes	AUEB
Maritime (Shipping – Shipbuilding)	NGO/Association	Association of Industry Companies Association of Shipyard Owners and	Local	Yes	AUEB

		Employers of Perama Shipbuilders			
Social Services	NGO/Association	AxionHellas	National	Yes	AUEB
Water Maritime	NGO/Association	Blue Growth Piraeus	Local	Yes	AUEB
Law	NGO/Association	European Public Law Organisation, Institute for Sustainability Development	International	Yes	AUEB
Energy	NGO/Association	Greek Association of RES Electricity Producers	National	Yes	AUEB
Maritime (Shipping) Social Services	NGO/Association	Greek Shipowners social welfare company (SYN-ENOSIS)	National	Yes	AUEB
Environment	NGO/Association	Greenpeace	International	Yes	AUEB
Technology	NGO/Association	Hellenic Association of Mobile Applications Companies (SEKEE)	National	Yes	AUEB
Maritime (Shipping)	Government/ Policy Makers	Hellenic Chamber of Shipping	National	Yes	AUEB
All	Government/ Policy Makers	Hellenic Confederation of Professionals, Craftsmen & Merchants (GSEVEE)	National	Yes	AUEB

Maritime	NGO/Association	Hellenic Marine Environment protection association (HELMEPA)	National	Yes	AUEB
Maritime Manufacturing	NGO/Association	Hellenic Marine Equipment Manufacturers & Exporters (HELMEXPO)	National	Yes	AUEB
Waste (Recycling)	NGO/Association	Hellenic Recycling Agency (EOAN)	National	Yes	AUEB
Maritime (Shipping)	NGO/Association	Hellenic Ship Suppliers & Exporters Association	National	Yes	AUEB
Maritime (Shipping)	NGO/Association	Hellenic Shipbrokers' Association	National	Yes	AUEB
Energy	NGO/Association	Hellenic Wind Energy Association	National	Yes	AUEB
Media	Business/ Industry	Koinoniki	Local	Yes	AUEB
Energy Environment	Business/ Industry (Agency Under Private Law)	Natural Environment and Climate Change Agency (NECCA)	National	Yes	AUEB
Sports	Business/ Industry	Olympiacos BC	Local	Yes	AUEB
Sports	Business/ Industry	Olympiacos FC	Local	Yes	AUEB
Commerce	NGO/Association	Piraeus Chamber of Commerce and Industry	Local	Yes	AUEB

Finance	Government/ Policy Makers	Piraeus Chamber of Crafts	Local	Yes	AUEB
Trade	NGO/Association	Piraeus Chamber of Tradesman	Local	Yes	AUEB
Maritime Transportation (Ports Infrastructure)	Government/ Policy Makers	Port Union of Greece (ELIME)	National	Yes	AUEB
Environment (Sustainability)	NGO/Association	SDSN Greece	National	Yes	AUEB
Maritime (Marine Protection)	NGO/Association	Thalassa Foundation	National	Yes	AUEB
Environment (Sustainability)	NGO/Association	UN Global compact Greece	National	Yes	AUEB
Maritime (Shipping)	NGO/Association	Union of Greek Shipowners	National	Yes	AUEB
Maritime (Shipping)	NGO/Association	Women's International Shipping & Trading Association (WISTA)	National	Yes	AUEB
Maritime (Shipping)	NGO/Association	Worldwide Industrial & Marine Association (WIMA)	International	Yes	AUEB
Environment	NGO/Association	WWF	International	Yes	AUEB
Finance	Business/ Industry	Alpha Bank	National	Yes	AUEB

Finance	Business/ Industry	Bank of Greece	National	Yes	AUEB
Finance	Business/ Industry	Big Pi Ventures	National	Yes	AUEB
Finance	Business/ Industry	Earth Fund Global	International	Yes	AUEB
Finance	Government/ Policy Makers	Enterprise Greece	National	Yes	AUEB
Finance	Business/ Industry	EquiFund	National	Yes	AUEB
Finance	Business/ Industry	Eurobank	National	Yes	AUEB
Finance	Government/ Policy Makers	Hellenic Republic Asset Development Fund (TAIPED)	National	Yes	AUEB
Finance	Business/ Industry	Metavallon Venture Capital	National	Yes	AUEB
Finance	Business/ Industry	National Bank of Greece (NBG) Seeds	National	Yes	AUEB
Finance	Business / Industry	SPOROS Circular Solutions	National	Yes	AUEB
Finance	Business / Industry	Piraeus Bank	National	Yes	AUEB
Finance	Business / Industry	Uni.Fund	National	Yes	AUEB

Finance	Business / Industry	Velocity Partners	National	Yes	AUEB
Technology (Innovation)	Business / Industry	Aurora Plasma Tools	National	Yes	AUEB
Technology (Innovation)	NGO/Association	ACE.In	National	Yes	AUEB
Finance Technology (Innovation)	Business / Industry	Bank of Greece - FinTech Innovation Hub	National	Yes	AUEB
Maritime Waste (Innovation)	Business / Industry	Blue cycle project	National	Yes	AUEB
Maritime (Innovation)	NGO/Association	Blue Lab	Local	Yes	AUEB
Tourism (Innovation)	Business / Industry	Capsule T Travel & Hospitality Accelerator (by Hellenic Chamber of Commerce)	National	Yes	AUEB
Maritime (Shipping) (Innovation)	Business / Industry	Cargo Share	National	Yes	AUEB
Energy Manufacturing (Innovation)	Business / Industry	CYRUS	National	Yes	AUEB
Environment	NGO/Association	EIT Climate-KIC	International	Yes	AUEB

(Innovation)					
Environment Technology (Innovation)	NGO/Association	EIT Climate-KIC Hub Greece - ATHENA RC	National	Yes	AUEB
Technology (Innovation)	NGO/Association	EIT Digital	National	Yes	AUEB
Technology Health (Innovation)	NGO/Association	EIT Health Hub Greece	National	Yes	AUEB
Technology Energy (Innovation)	NGO/Association	EIT Innoenergy	National	Yes	AUEB
Technology Raw Materials (Innovation)	NGO/Association	EIT Raw Materials Hub – Regional Center Greece	National	Yes	AUEB
Technology Urban Mobility (Innovation)	NGO/Association	EIT Urban Mobility	National	Yes	AUEB
Technology Maritime, Waste (Innovation)	NGO/Association	Enaleia	National	Yes	AUEB
Technology (Innovation)	Business / Industry	EVOTROPIA	National	Yes	AUEB

Technology (Innovation)	NGO/Association	Federation of Hellenic Associations of Young Entrepreneurs (OESYNE)	National	Yes	AUEB
Maritime (Innovation)	Business / Industry	Glafcos Marine Ltd	National	Yes	AUEB
Services (Innovation)	Business / Industry	HERADO	National	Yes	AUEB
Technology (Innovation)	NGO/Association	Higher Incubator Giving Growth & Sustainability (HIGGS)	National	Yes	AUEB
Urban Planning (Innovation)	NGO/Association	InCommOn_Innovative	National	Yes	AUEB
Energy Mobility (Innovation)	Business / Industry	Inteligg	National	Yes	AUEB
Technology Waste (Innovation)	Business / Industry	IOTECH	National	Yes	AUEB
Technology Mobility (Innovation)	Business / Industry	Marine Save	National	Yes	AUEB
Technology (Innovation)	Business / Industry	MESTOR	National	Yes	AUEB

Technology Environment (Innovation)	Business / Industry	Mobase	National	Yes	AUEB
Technology Transportation (Innovation)	Business / Industry	Optecharge	National	Yes	AUEB
Technology Maritime (Innovation)	Business / Industry	Optima-X - Enso XL - Maritime Innovation Hub	National	Yes	AUEB
Technology Environment (Innovation)	Business / Industry	OptiStructure	National	Yes	AUEB
Technology Energy (Innovation)	Business / Industry	Parity Platform	National	Yes	AUEB
Technology Mobility (Innovation)	Business / Industry	Rhoe Urban Tech	National	Yes	AUEB
Technology Energy (Innovation)	Business / Industry	Shallows	National	Yes	AUEB
Technology	Business / Industry	Solar Inspectron AI	National	Yes	AUEB

(Innovation)					
Technology Agriculture (Innovation)	Business / Industry	Solmeyea	National	Yes	AUEB
Services (Innovation)	Business / Industry	Trustporter	National	Yes	AUEB
Technology (Innovation)	Business / Industry	Unload	National	Yes	AUEB
Technology Waste (Innovation)	Business / Industry	Robenso	National	Yes	AUEB
Transportation Ports (Peer Ports)	Government/Policy Makers	Alexandroupolis Port Authority S.A.	National	Yes	AUEB
Transportation Ports (Peer Ports)	Government/Policy Makers	Corfu Port Authority S.A.	National	Yes	AUEB
Transportation Ports (Peer Ports)	Government/Policy Makers	Elefsis Port Authority	Local	Yes	AUEB
Transportation Ports	Government/Policy Makers	Heraklion Port Authority S.A.	National	Yes	AUEB

(Peer Ports)					
Transportation Ports (Peer Ports)	Government/Policy Makers	IGOUMENITSA PORT AUTHORITY S.A.	National	Yes	AUEB
Transportation Ports (Peer Ports)	Government/Policy Makers	IGOUMENITSA PORT AUTHORITY S.A.	National	Yes	AUEB
Transportation Ports (Peer Ports)	Government/Policy Makers	Kavala Port Authority S.A	National	Yes	AUEB
Transportation Ports (Peer Ports)	Government/Policy Makers	Lavrion Port Authority S.A.	National	Yes	AUEB
Transportation Ports (Peer Ports)	Government/Policy Makers	Patras Port Authority S.A.	National	Yes	AUEB
Transportation Ports (Peer Ports)	Government/Policy Makers	Rafina Port Authority S.A.	National	Yes	AUEB
Transportation Ports (Peer Ports)	Government/Policy Makers	Thessaloniki Port Authority S.A.	National	Yes	AUEB

Transportation (Peer Ports)	Government/Policy Makers	Volos Port Authority S.A.	National	Yes	AUEB
Technology Finance (Regulatory Authorities)	Government/Policy Makers	Ministry of Development & Investments	National	Yes	AUEB
Environment Energy (Regulatory Authorities)	Government/Policy Makers	Ministry of Environment and Energy	National	Yes	AUEB
Finance (Regulatory Authorities)	Government/Policy Makers	Ministry of Finance	National	Yes	AUEB
Labour (Regulatory Authorities)	Government/Policy Makers	Ministry of Labor and Social Affair	National	Yes	AUEB
Shipping Maritime (Regulatory Authorities)	Government/Policy Makers	Ministry of Shipping and Island Policy	National	Yes	AUEB
Public Sector (Regulatory Authorities)	Government/Policy Makers	Municipality of Piraeus	Local	Yes	AUEB
Public Sector (Regulatory Authorities)	Government/Policy Makers	National Institute of Labor and Human Resources (EFSA)	National	Yes	AUEB
Public Sector (Regulatory Authorities)	Government/Policy Makers	Region of Attica	Regional	Yes	AUEB

Public Sector (Regulatory Authorities)	Government/Policy Makers	Special Permanent Committee of Environmental Protection of the Greek Parliament	National	Yes	AUEB
Engineering, All (Research)	Research/ Academia	Aristotle University of Thessaloniki (AUTH) - School of Mechanical Engineering	National	Yes	AUEB
Technology, All (Research)	Research/ Academia	Aristotle University of Thessaloniki (AUTH) - School of Technology	National	Yes	AUEB
Economics Environment (Research)	Research/ Academia	Athens University of Economics and Business (AUEB) - ReSEES - School of Economics	National	Yes	AUEB
Economics, All (Research)	Research/ Academia	Athens University of Economics and Business (AUEB) - School of Business	National	Yes	AUEB
Environment, All (Research)	Research/ Academia	Center for Renewable Energy Sources & Saving (CRES)	National	Yes	AUEB
Industrial Production (Research)	Research/ Academia	Foundation for Economic and Industrial Research (IOBE)	National	Yes	AUEB
Maritime (Research)	Research/ Academia	Hellenic Centre for Marine Research (HCMR)	National	Yes	AUEB
Transportation (Research)	Research/ Academia	Hellenic Institute of Transport, CERTH	National	Yes	AUEB

Environment (Research)	Research/ Academia	International Centre for Research on the Environment and the Economy (ICRE8)	National	Yes	AUEB
All (Research)	Research/ Academia	National Kapodistrian University of Athens (NKUA)	National	Yes	AUEB
Engineering All (Research)	Research/ Academia	National Technical University of Athens (NTUA) - School of Civil Engineering	National	Yes	AUEB
Mining (Research)	Research/ Academia	National Technical University of Athens (NTUA) - School of Mining Engineering – Metallurgy	National	Yes	AUEB
Engineering Maritime (Research)	Research/ Academia	National Technical University of Athens (NTUA) - School of Naval Architecture and Marine Engineering	National	Yes	AUEB
Engineering Shipping (Research)	Research/ Academia	National Technical University of Athens (NTUA) - School of Shipbuilding and Mechanical Engineering	National	Yes	AUEB
All (Research)	Research/ Academia	Panteion University of Social & Political Sciences	National	Yes	AUEB
Policy (Research)	Research/ Academia	Panteion University of Social & Political Sciences - Department of International, European & Area Studies	National	Yes	AUEB

Technology (Research)	NGO/Association	PRAXI Network	National	Yes	AUEB
All (Research)	Research/ Academia	University of Aegean	National	Yes	AUEB
All (Research)	Research/ Academia	University of Piraeus	National	Yes	AUEB
All (Research)	Research/ Academia	University of Piraeus - LEEM Laboratory	National	Yes	AUEB
Water (Terminal Service Providers)	Government/Policy Makers	Athens Water Supply and Sewerage Company (EYDAP S.A.)	National	Yes	AUEB
Energy (Terminal Service Providers)	Government/Policy Makers	Independent Power Transmission Operator (ADMIE)	National	Yes	AUEB
Transportation Shipping (Terminal Service Providers)	Business / Industry	PCT S.A.	Local	Yes	AUEB
Transportation Shipping Ports (Terminal Service Providers)	Government/Policy Makers	Piraeus Port Authority (PPA)	Local	Yes	AUEB
Shipping Energy	Government/Policy Makers	Public Gas corporation of Greece (DEPA) S.A	National	Yes	AUEB

(Terminal Service Providers)					
Shipping (Terminal Users)	Business / Industry	ARISTA Shipping S.A.	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	Blue Planet Shipping	Local	Yes	AUEB
Tourism Shipping (Terminal Users)	Business / Industry	Celestyal Cruises	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	CMA CGM Hellas	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	Danaos Shipping Co. Ltd	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	GLOBAL Maritime Enterprises	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	Latsco Shipping Limited	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	Maersk	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	Optima Shipping Services S.A.	Local	Yes	AUEB
Shipping	Business / Industry	Sea Traders S.A.	Local	Yes	AUEB

(Terminal Users)					
Shipping (Terminal Users)	Business / Industry	Signal Maritime	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	Star Bulk	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	Thenamaris	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	Vernicos Maritime Group	Local	Yes	AUEB
Shipping (Terminal Users)	Business / Industry	Victoria Steamship Company	Local	Yes	AUEB

2.Port of Limassol					
Shipping Sector	Public Authority Government Policy	Shipping Deputy Ministry	National	Yes	CUT
Fisheries Sector	Public Authority Government Policy	Fisheries and Marine Research Department (DFMR)	National	Yes	CUT
Environment Sector	Government/Policy	Department of Environment	National	Yes	CUT
Shipping Sector	Industry Associations	Shipping Chamber	National		CUT
Maritime	Association	Association of Merchant Marine Officers	National	Yes	CUT
Port operators	Business/industry	P&O Maritime Cyprus Ltd	Local International	Yes	CUT
Port operators	Business/industry	EUROGATE Container Terminal Limassol Ltd	Local International	Yes	CUT
Port operators	Business/industry	DP World Limassol	Local International	Yes	CUT
Ship owning company	Business/Industry	Celestyal Cruises	National	Yes	CUT
Shipmanagement company	Business/Industry	Optimum Ship Management	International	Yes	CUT

Ship owning company	Business/Industry	QM MARINE LTD	Local	Yes	CUT
Shipmanagement company	Business/Industry	Columbia Ship Management	International	Yes	CUT
Companies providing services to the shipping industry in Cyprus and abroad	Business/Industry	Multimarine Services Ltd	Local	Yes	CUT
Companies providing services to the shipping industry in Cyprus and abroad	[Business/Industry	Cass-Technava LTD	Local	Yes	CUT
Shipmanagement Ship owning Companies providing services to the shipping industry in Cyprus and abroad	Business/Industry	Bernhard Schulte Shipmanagement (BSM)	Local/International	Yes	CUT
Shipmanagement Ship owning Companies providing services to the shipping industry in Cyprus and abroad	Business/Industry	Island-Oil holdings	Local	Yes	CUT
Companies providing services to the shipping industry in Cyprus and abroad	Business/Industry	CMA CGM CYPRUS LTD	Local/ International	Yes	CUT
Shipmanagement companies	Business/Industry	EDT Shipmanagement	Local	Yes	CUT

Companies providing services to the shipping industry in Cyprus and abroad	Business/Industry	Fameline Holding Group (FHG),	Local	Yes	CUT
Transportation of chemicals, refined oil products and edible oils around the world.	Business/Industry	Atlantis tankers	Local international	Yes	CUT
Maritime	Business/Industry	Avanti Communications Group	International	Yes	CUT
Marine and Maritime	NGO	Cyprus Marine Environment Protection Association CYMEPA	Local	Yes	CUT
Maritime	Education	Cyprus Maritime Academy	Local	Yes	CUT
Maritime shipping	Association	Cyprus Naval Architects and Marine Engineers Association	Local	Yes	CUT
Shipping	Association	Cyprus Scientific and Technical Chamber	Local	Yes	CUT
Companies providing services to the shipping industry in Cyprus and abroad	Business/Industry	Hyperion Systems Engineering Group	Local	Yes	CUT
Marine and Maritime	Research/Academia		Local	Yes	CUT

		CMMI Cyprus Marine and Maritime Institute			
Provider of marine transportation services /shipping	Business/Industry	Interorient Navigation Co Ltd	Local/International	Yes	CUT
Ship management company	Business/Industry	MSC Shipmanagement	Local/International	Yes	CUT
Provider of ship & offshore services	Business/Industry	NAVKRATIS LTD	Local	Yes	CUT
Oceanography maritime	Research/Academia	Oceanography Center, University of Cyprus	Local	Yes	CUT
Shipping company	Business/Industry	ÖSTERREICHISCHER LLOYD SEEREEDEREI (CYPRUS) LTD	Local/international	No	CUT
Maritime technology and marine risk firm,	Business/Industry	Prevention at Sea	Local	Yes	CUT
Industry	Association	Cyprus Employers & Industrialists Federation (OEB)	National	Yes	CUT
Industry	Association	Cyprus Chamber Of Commerce and Industry	National	Yes	CUT
Shipping agency and freight forwarding company	Business/Industry	Shoham Cyprus	Local	Yes	CUT

Young people working within the global maritime industry.	NGO/Association	YoungShip Cyprus	International/Local	Yes	CUT
Forwarding, customs clearance, warehousing and insurance of goods.	Business/Industry	E.S.D. Allfreight Services Limited	Local	Yes	CUT
Environment	NGO	Friends of the Earth	Local	Yes	CUT
Public Sector	Government/Policy Makers Local Citizen	Community Council Asomatos	Local	Yes	CUT
Public Sector	Government/Policy Makers Local Citizen	Ipsonas Municipality	Local	Yes	CUT
Public Sector	Government/Policy Makers Local Citizen	Limassol Municipality	Local	Yes	CUT
Natural Gas	Government/Policy	Natural Gas Public Company (DEFA)	Local	Yes	CUT
Public Sector	Government/Policy Makers Local Citizen	Community Council Akrotiri	Local	Yes	CUT
Civil Administration /ministry of defence UK (for Cyprus is a private fund coming from Uk's ministry of Defence	Private Sovereign Base Area Administration	Area office Akrotiri Environment	Local	Yes	CUT

Environment	Private Sovereign Base Area Administration	Environment Department Sovereign Base Areas Administration	Local	Yes	CUT
international accredited registrar and classification society	Business/Industry	Det Norske Veritas DNV	Local/International	Yes	CUT
Environment	NGO	BirdLife Cyprus	Local	Yes	CUT
Energy, Environment and Climate Change.	NGO	Cyprus Energy Agency	Local	Yes	CUT
Social Innovation	Business/Industry	Center for Social Innovation	Local	Yes	CUT
Conservation sustainability	NGO-Foundation	Terra Cypria	Local	Yes	CUT
Ports	Local Authority	CYPRUS PORTS AUTHORITY	Local	YES	CUT
Robotics Control and Decision Systems	Research/Academia	The Robotics Control and Decision Systems (RCDS) Laboratory	Local	Yes	CUT
Marine and Maritime	Business/Industry	Cyprus Subsea Consulting & Services	Local	Yes	CUT
Global Positioning System (G.P.S.) and the Geographical Information System (G.I.S.) technologies.	Business/Industry	T.C. Geomatic LTD	Local	Yes	CUT

Communication	Business/Local citizens	Efmerida Lemesos	Local	Yes	CUT
3.Port of Valencia					
Ports Transportation Logistics	Government/Policy Maker	Port Authority of Valencia	Regional	Yes	FVP
Ports Transportation Logistics Energy Technology Training	Research/Academia	Fundación Valenciaport	Local	Yes	FVP
Transportation Logistics	Business/Industry	Madrid Dry Port	Regional	Yes	FVP
Transportation Logistics	Business/Industry	Plaza (Logistic Platform of Zaragoza)	Regional	Yes	FVP
Transportation Logistics	Business/Industry	Renfe Operadora Mercancías	National	Yes	FVP
Transportation Logistics	Business/Industry	Laumar Cargo S.L.	National	Yes	FVP
Transportation Logistics	Business/Industry	Logitren	National	Yes	FVP
Transportation Logistics	Business/Industry	APM Terminals Railway Valencia	National	Yes	FVP
Maritime Energy Construction (Ports Infrastructure) Environment Technology	Research/Academia	Universitat Politècnica de Valencia	Local	Yes	FVP
Envieronment	Research/Academia	Universitat de Valencia	Local	Yes	FVP

Economics					
Envieronment Economics Maritime	Research/Academia	Regional Ministry of Education. (Labora)	Regional	Yes	FVP
Ports Maritime	Business/Industry	Amarradores del Puerto de Valencia S.L. (Mooring services)	Local	Yes	FVP
Ports Maritime	Business/Industry	Amarradores del Puerto de Sagunto S.L. (Mooring services)	Local	Yes	FVP
Transportation Logistics	Business/Industry	Docks Logistics Spain S.A	Local	Yes	FVP
Transportation Logistics	Business/Industry	Intercontainer S.A	Local	Yes	FVP
Transportation Logistics	Business/Industry	Recomar S.A.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Setemar S.A	Local	Yes	FVP
Transportation Logistics	Business/Industry	Spain Container Depot S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Spanish Depot Service S.A.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Trans-base Soler S.L.	Local	Yes	FVP
Port operator	Business/Industry	APM Terminals Valencia S.A.	Local	Yes	FVP
Port operator	Business/Industry	CPS Iberian Valencia terminal S.A.U.	Local	Yes	FVP
Port operator	Business/Industry	MSC Terminal Valencia S.A.U.	Local	Yes	FVP
Port operator	Business/Industry	Valencia Terminal Europa S.A	Local	Yes	FVP
Port operator	Business/Industry	Intersagunto Terminales S.A	Local	Yes	FVP
Port operator	Business/Industry	Noatum Terminal Sagunto S.L.	Local	Yes	FVP

Port operator	Business/Industry	Portuaria Levantina	Local	Yes	FVP
Transportation Logistics	Business/Industry	Depot Real Benlloch S.A.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Frío Puerto Valencia S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Logisters Logística S.A.	Local	Yes	FVP
Transportation Logistics	Business/Industry	NCT Logística S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	RMN Distribución y Almacenaje S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	TIBA Spain S.A.U.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Valcargo Land Transport S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Vapores Suardíaz Mediterráneo S.A.	Local	Yes	FVP
Transportation Commerce Maritime Ports	Government/ Policy Maker	Customs and Excise Administration of Valencia-Maritime (Ministry of Finance and the Civil Service)	National	Yes	FVP
Transportation Commerce Maritime Ports	Government/ Policy Maker	Area of Agriculture and Fisheries - Animal Health (Ministry of Agriculture, Fisheries and Food)	National	Yes	FVP
Transportation Commerce Maritime Ports	Government/ Policy Maker	Area of Agriculture and Fisheries - Plant Health (Ministry of Agriculture, Fisheries and Food)	National	Yes	FVP
Transportation Maritime Ports	Government/ Policy Maker	Maritime Authority (Ministry of Transport, Mobility and Urban Agenda)	National	Yes	FVP

Transportation Commerce Maritime Ports	Government/ Policy Maker	Sanidad Exterior (Ministry of Health)	National	Yes	FVP
Transportation Commerce Maritime Ports	Government/ Policy Maker	Soivre (Official Service for the Inspection, Surveillance and Regulation of Foreign Trade	National	Yes	FVP
Martime Ports	Business/Industry	Prácticos de Valencia S.L.P (port pilots)	Local	Yes	FVP
Martime Ports	Business/Industry	Prácticos de Sagunto S.L.P (port pilots)	Local	Yes	FVP
Maritime Ports Safety	Business/Industry	Remolcadores Boluda S.A (towing service)	Local	Yes	FVP
Ports	Business/Industry	Centro Portuario de Empleo de Valencia E.T.T. S.A. (dockers)	Local	Yes	FVP
Ports	Business/Industry	SESASA	Local	Yes	FVP
Martime Ports	Business/Industry	Aljibes Blasco S.L.	Local	Yes	FVP
Martime Ports	Business/Industry	Aljibes Boscá S.L.	Local	Yes	FVP
Martime Ports	Business/Industry	Burriel y Navarro S.L.	Local	Yes	FVP
Martime Ports	Business/Industry	Cemesa Amarres Barcelona S.A.	Local	Yes	FVP
Martime Ports	Business/Industry	Embalajes Cantabria S.L.	Local	Yes	FVP
Martime Ports	Business/Industry	EMS Ship Supply Spain S.A.	Local	Yes	FVP

Martime Ports	Business/Industry	Grupo Hospitalario Quirón S.A.	Local	Yes	FVP
Martime Ports	Business/Industry	Inter-Servis Valencia S.L.	Local	Yes	FVP
Martime Ports	Business/Industry	Lantia Maritima S.L.	Local	Yes	FVP
Martime Ports	Business/Industry	Magma Tratamientos S.L.U.	Local	Yes	FVP
Martime Ports	Business/Industry	Medical Vessel C.B.	Local	Yes	FVP
Martime Ports	Business/Industry	Roca Defisan S.L.	Local	Yes	FVP
Martime Ports	Business/Industry	Stock Cargo S.L.	Local	Yes	FVP
Martime Ports	Business/Industry	Utisa Puerto S.L.	Local	Yes	FVP
Martime Ports	Business/Industry	Vareser 96 S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Asociación Transcont Comunidad Valenciana (Association of trucks for container transport)	Regional	Yes	FVP
Transportation Logistics	Business/Industry	ELTC	Regional	Yes	FVP
Transportation Logistics	Business/Industry	Boxtrans 2000 S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Trajoman S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Contenedores y transportes férricos S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Contratas y transportes Salgar S.L.	Local	Yes	FVP

Transportation Logistics	Business/Industry	Copitrans S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Cotransa S.A.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Haulier COntainer S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Jofeme S.A:	Local	Yes	FVP
Transportation Logistics	Business/Industry	Lintal 99S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Operador Logístico Lopeval S.A.	Local	Yes	FVP
Transportation Logistics	Business/Industry	RMN Logística S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Toysan Transport S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Trans European Transport Suardíaz S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Transeste Logística S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Transnatur S.A.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Transportes Leopoldo Romero S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Transportes Lopez Gadea S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Transportes Pellicer e Hijos S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Transportes Quico S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Transportes Remedios Torres S.L.	Local	Yes	FVP

Transportation Logistics	Business/Industry	Transportes Toramo S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Transportes Vicente Brull S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Trincajes de Cargas S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Valcargo Land Transport S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Valencia Trucks Port S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Valtrau S Coop Valenciana	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Dsv Air & Sea S.A.U.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Acciona Forwarding, S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Agenmar, S.L.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Agility Spain, S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Dhl Global Forwarding Spain, S.L.U	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	General Noli, S.L.	Local	Yes	FVP
Transportation Logistics	Business/Industry	Globelink Uniexco, S.L.	Local	Yes	FVP

Maritime					
Transportation Logistics Maritime	Business/Industry	I.F.S. Inter.Forwarding, S.L.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Lo.Trans Logis.Y Transp., S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Moldtrans Internacional, S.L.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Operaciones Internac., S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Raminatrans, S.L.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Rhenus Logistics, S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Schenker-Btl, S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Space Cargo Valencia, S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Spain Tir T.I.S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	T.I.A.M Savino Del Bene, S.L.	Local	Yes	FVP
Transportation	Business/Industry	Tiba Internacional, S.A.	Local	Yes	FVP

Logistics Maritime					
Transportation Logistics Maritime	Business/Industry	Trans Union, S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Transnatur, S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Universal Global Logistics, S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Vélice Logística, S.A.	Local	Yes	FVP
Transportation Logistics Maritime	Business/Industry	Docks Logistics Spain, S.A	Local	Yes	FVP
Technology Maritime Transportation Ports	Business/Industry	Infoport	Local	Yes	FVP
Transportation Ports Maritime Civil works Environment	Research/Academia	CEDEX (Centre for Public Works Studies and Experimentation)	National	Yes	FVP
Maritime Safety	Government/ Policy Maker	SASEMAR (Maritime Rescue and Safety Company)	National	Yes	FVP
Maritime Safety	Government/ Policy Maker	Maritime Pollution Area of the Directorate General of the Merchant Navy	National	Yes	FVP

Maritime Security Defense	Government/ Policy Maker	Valencia Naval Command (Ministry of Defense - Navy)	National	Yes	FVP
Transportation Commerce Maritime Ports	Government/ Policy Maker	Guardia Civil (Spanish Military Police) – tax department	National	Yes	FVP
Maritime Security Defense	Government/ Policy Maker	Guardia Civil (Spanish Military Police) – provincial maritime service	Provincial	Yes	FVP
Technology Security Defense	Government/ Policy Maker	INTA (National Institute for Aerospace Technology - Ministry of Defense)	National	Yes	FVP
Tourism	Government/ Policy Maker	Turismo Comunitat Valenciana	Regional	Yes	FVP
Land use	Government/ Policy Maker	Conselleria de Politica Territorial (Regional Ministry of Territorial Policy)	Regional	Yes	FVP
Agriculture	Government/ Policy Maker	Conselleria de Agricultura (Regional Ministry of Agriculture)	Regional	Yes	FVP
Safety Emergencies	Government/ Policy Maker	AVSRE (Valencian Agency for Security and Emergency Response)	Regional	Yes	FVP
City Council	Government/ Policy Maker	Valencia City Council	Local	Yes	FVP
City Council	Government/ Policy Maker	Sagunto City Council	Local	Yes	FVP
City Council	Government/ Policy Maker	Gandía City Council	Local	Yes	FVP
Port Operator	Business/Industry	Transmed (passengers terminal)	Local	Yes	FVP

Port Operator	Business/Industry	Fertiberia S.A. (solid bulk terminal)	Local	Yes	FVP
Port Operator	Business/Industry	Galp Energía España S.A.U. (liquid bulk terminal)	Local	Yes	FVP
Port Operator	Business/Industry	Sagunto Regasification plant (SAGGAS)	Local	Yes	FVP
Port Operator	Business/Industry	Productos Asfáticos S.A. (CEPSA) (liquid bulk terminal)	Local	Yes	FVP
Port Operator	Business/Industry	Temagra (solid bulk terminal)	Local	Yes	FVP
Port Operator	Business/Industry	Terminales Portuarias S.L. (TEPSA) (liquid bulk terminal)	Local	Yes	FVP
Port Operator	Business/Industry	Urbamar-Levante UTE	Local	Yes	FVP
Port Operator	Business/Industry	UTE Marpol Sagunto-Amarradores Puerto de Sagunto	Local	Yes	FVP
Port Operator	Business/Industry	PORLESA	Local	Yes	FVP
Port Operator	Business/Industry	Demagrisa	Local	Yes	FVP
Maritime Ports	Business/Industry	Boluda Tankers S.A.	Local	Yes	FVP
Security	Government/ Policy Maker	Local Police of Valencia	Local	Yes	FVP
Ports Safety Security Innovation Technology	Government/ Policy Maker	Puertos del Estado (Ministry of Civil Works – Port Department)	National	Yes	FVP
Innovation	Start-up incubator	Insomnia	Local	Yes	FVP
Innovation	Start-up incubator	Demium Startups	Local	Yes	FVP
Innovation	Start-up incubator	Lanzadera	Local	Yes	FVP
Innovation	Start-up Association	Startup VLC	Local	Yes	FVP
Innovation	Start-up incubator	BBosters	Local	Yes	FVP

Innovation	Start-up University Association	Start UPV	Local	Yes	FVP
Innovation	Start-up Platform	VLC Tech City	Local	Yes	FVP
Employment Entrepreneurship Training	Government/ Policy Maker	Valenciactiva emprende (Local agency for entrepreneurial ecoystem in Valencia)	Local	Yes	FVP
Employment Entrepreneurship Training	Government/ Policy Maker	VIT emprende (Local community of the innovative entrepreneurial ecosystem in Valencia)	Local	Yes	FVP
Innovation	Government/ Policy Maker	AVI -Valencian Innovation Agency	Regional	Yes	FVP
Corporate Social Responsibility	Association	Aportem	Local	Yes	FVP
Ports	Government/ Policy Maker	ESPO (European Seaports Organization)	UE	Yes	FVP
Ports	Association	IAPH (International Association of Ports and Harbors)	International	Yes	FVP
Ports	Association	Medcruise	International	Yes	FVP
Waterborme transport	European Technology Platform	Waterborme Technology Platform	UE	Yes	FVP
Technology Logistics	European Technology Platform	Alice Technology Platform	UE	Yes	FVP
marina	Business/Industry	La Marina de Valencia	Local	Yes	FVP
Yacht club	Business/Industry	Club Náutico de Valencia	Local	Yes	FVP
Energy	Association	AVAESEN	Local	Yes	FVP
Energy	Association	Aeh2 (Spanish Hydrogen Association)	National	Yes	FVP

Press	Business/Industry	Valencia Plaza	Local	Yes	FVP
Press	Business/Industry	Grupo Diario	Local	Yes	FVP
Economy Logistics	Business/Industry	Propeller Club Valencia (association of logistics managers and entrepreneurs)	Local	Yes	FVP
Environment	Association	Ecologistas en Acción (Ecologist in Action)	Local	Yes	FVP
Environment	Citizen Platform	El litorial per al poble (coastline for the people)	Local	Yes	FVP
Technology	Research/Academia	ITI (Technological Institute of Informatics)	Local	Yes	FVP
Technology Energy	Research/Academia	ITE (Technological Institute of Energy)	Local	Yes	FVP
Maritime Ports	Association	Asociación Naviera Española Valenciana - Spanish Shipping Association	National	Yes	FVP
Maritime Ports	Association	Asociación Naviera Valenciana- Valencian Shipping Association	Local	Yes	FVP
Maritime Transport	Association	FETEIA - Association of Freight Forwarders, International Freight Forwarders and Similar of Spain	National	Yes	FVP
Maritime Transport	Association	ATEIA - Association of Freight Forwarders, International Freight Forwarders and Similar of Valencia	Local	Yes	FVP
Environment	NGO	Ecoembes (Recycling)	National	Yes	FVP
Innovation Economy	Research/Academia	IVACE - Valencian Institute for Business Competitiveness	Regional	Yes	FVP
Ports	Association	ANESCO (National Association of Stevedoring Companies	National	Yes	FVP

		and Port Employment Centres)			
Ports Logistics Transport	Business/Industry	VPI Logística (Logistic Intermodal Platform)	Local	Yes	FVP
Economy	Association	Cámara de Comercio de Valencia (Valencia Chamber Of Commerce)	Local	Yes	FVP
Innovation	Public entity	Las Naves -centre for social and urban innovation of the city of Valencia.	Local	Yes	FVP
Energy Environment	Public foundation	Valencia clima y energía (Valencia Climate and energy)	Local	Yes	FVP

Case Study#3: Main River

	Stakeholders			
Sector *[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]*	**Category** *[Business/Industry, Government/Policy Makers, Research/Academia, Local Citizen, NGO/Association]*	**Name of Stakeholder or organization**	**Scale** *[Local, National, Regional, International]*	**Existing Contact** *[Yes/No]*
Energy, Water, Mobility	Public utilities	N-ERGIE Aktiengesellschaft	local	Yes
Energy, Water, Mobility, Telecommunication, Public Pools	Public utilities	Stadtwerke Bamberg Energie- und Wasserversorgung GmbH	local	Yes
Energy, Water, Mobility, Public Pools	Public utilities	Erlanger Stadtwerke AG	local	Yes
Energy, Water, Mobility, Public Pools	Public utilities	Stadtwerke Bayreuth	local	Yes
Energy, Water, Mobility, Public Pools, Waste Management, Harbor	Public utilities	Würzburger Versorgungs- und Verkehrs-GmbH	local	Yes
Energy, Water, Sewage, Public Pools	Public utilities	Stadtwerke Kulmbach	local	Yes
Energy, Water, Mobility	Public utilities	Stadtwerke Lichtenfels	local	Yes
Energy, Water, Mobility, Telecommunication, Public Pools	Public utilities	Statdwerke Schweinfurt GmbH	local	Yes
Energy	Public utilities	Energieversorgung Main-Spessart GmbH	local	Yes
Energy, Water, Mobility, Public Pools, Waste Management, Municipal Cleaning	Public utilities	Stadtwerke Aschaffenburg	local	Yes

Energy, Water, Public Pools	Public utilities	Stadtwerk Haßfurt GmbH	local	Yes
Water	Public utilities	Zweckverband Fernwasserversorgung Mittelmain (FWM)	local	Yes
Waste Management, Mobility, Health	Public utilities	Kommunalunternehmen des Landkreises Würzburg	local	Yes
Energy, Water, Harbor	Public utilities	Stadtwerke Zeil a. Main	local	Yes
Energy, Water, Mobility, Public Pools	Public utilities	EMB Energieversorgung Miltenberg-Bürgstadt GmbH & Co. KG	local	Yes
Energy, Telecommunication, Mobility	Public utilities	EZV GmbH & Co. KG Untermain	local	Yes
Energy, Water, Sewage, Mobility	Public utilities	Gemeindewerke Kahl Versorgungsgesellschaft mbH	local	Yes
Energy	NGO/Association	Bayerische Energieagenturen e.V.	regional	Yes
N/A	NGO/Association	Bayerischer Gemeindetag	regional	Yes
N/A	NGO/Association	Bayerischer Städtetag	regional	Yes
N/A	NGO/Association	Bayerischer Landkreistag	regional	Yes
Industry	NGO/Association	Industrie- und Handelskammer Würzburg-Schweinfurt	regional	No
Energy	NGO/Association	Bundesverband WindEnergie e.V - LG Bayern	regional	Yes
Industry	NGO/Association	VDE Nordbayern	regional	Yes
Energy	NGO/Association	Bundesverband Erneuerbare Energie e.V. (BEE)	national	No
civil protection	NGO/Association	Technisches Hilfswerk	national	No
Agriculture	NGO/Association	Bayerischer Bauernverband e. V.	regional	Yes
Agriculture	NGO/Association	Landesvereinigung für den ökologischen Landbau in Bayern e.V. (LÖV)	regional	No
Agriculture	NGO/Association	Naturland e.V.	regional	Yes

Agriculture	NGO/Association	Bioland e.V.	regional	No
Agriculture	NGO/Association	Demeter e.V.	regional	No
Agriculture	NGO/Association	Biokreis Erzeugerring Bayern e.V.	regional	No
Environment	NGO/Association	NABU Bayern	regional	No
Environment	NGO/Association	Landesbund für Vogelschutz Bayern (LBV)	regional	Yes
Environment	NGO/Association	Bund Naturschutz Bayern	regional	Yes
Environment	NGO/Association	Umweltinstitut München e.V.	regional	No
Environment	NGO/Association	Bundesdeutscher Arbeitskreis für umweltbewusstes Management e.V. (B.A.U.M.)	national	No
Digitisation in all sectors	NGO/Association	Netzwerk digitaler bayerischer Main/Donau	regional	No
Environment	NGO/Association	Kompetenzzentrum Umwelt e. V. (KUMAS)	regional	No
N/A	Government/Administration	Bayern Innovativ	regional	Yes
Water	NGO/Association	Wasserwerksnachbarschaften e.V.	regional	Yes
Water	NGO/Association	Wasser-Info-Team e.V.	regional	Yes
Water	NGO/Association	Arbeitsgemeinschaften Wasser/Abwasser in Bayern (ARGE)	regional	Yes
N/A	Government/Administration	Bayerisches Staatsministerium für Umwelt und Verbraucherschutz	regional	Yes
N/A	Government/Administration	Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten	regional	Yes
N/A	Government/Administration	Bayerisches Staatsministerium für Wirtschaft, Landesentwicklung und Energie	regional	Yes
N/A	Government/Administration	Bayerische Landesanstalt für Wald und Forstwirtschaft	regional	No

N/A	Government/Administration	Bayerische Landesanstalt für Weinbau und Gartenbau	regional	No
N/A	Government/Administration	Landesamt für Gesundheit und Lebensmittelsicherheit	regional	No
N/A	Government/Administration	Landesamt für Digitalisierung, Breitband und Vermessung	regional	Yes
N/A	Government/Administration	Bayerisches Landesamt für Umwelt	regional	Yes
N/A	Government/Administration	Landesagentur für Energie und Klimaschutz (LENK)	regional	Yes
N/A	Government/Administration	Ressourceneffizienzzentrum (REZ)	regional	No
N/A	Government/Administration	Koordinierungsstelle Zukunftsstrategie Wasserwirtschaft Nordbayern	regional	Yes
N/A	Government/Administration	Wasserstraßen- und Schiffartsamt Main	regional	No
N/A	Government/Administration	untere Landesbehörden: Landratsämter, WWA	regional	No
N/A	Government/Administration	Gemeindeverwaltungen	local	No

Case Study #4: Ohrid-Prespa Lakes

	Country	Sector	Category	Name of Stakeholder or Organisation	Scale	Existing Contact
		[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]	*[Business/Industry, Government/Policy Makers, Research/Academia, Local Citizen, NGO/Association*		*[Local, National, Regional, International]*	*[Yes/No]*
	AL	Environmental sector	Government/ Policy makers	Ministry of environmental and tourism	National	yes
	AL	Environmental sector	Government/ Policy makers	Agency of protected areas	National	yes
	AL	Energy sector	Government/ Policy makers	Ministry of energy and infrastructure	National	yes
	AL	Environmental sector	Government	National Territorial Planning agency	National	yes
	AL	Agriculture sector	Government/ Policy makers	Ministry of agriculture and rural development	National	yes
	AL	Health sector	Government/ Policy makers	Ministry of Health and Social Protection	National	yes
	AL	Education sector	Government/ Policy makers	Ministry of Education and sports	National	yes
	AL	Cultural sector	Government/ Policy makers	Ministry of Culture	National	yes
	AL	Financial sector	Government/ Policy makers	Ministry of Finance and Economy	National	yes
	AL	Financial sector	Government/ Policy makers	Ministry of State for Entrepreneurship Protection	National	yes

	AL	Education sector	Government/ Policy makers	Ministry of State for Youth and Children	National	yes
	AL	Environmental sector	Government/ Policy makers	National Agency of Natural Resources (AKBN)	National	yes
	AL	Environmental sector	Government	National Geology services	National	yes
	AL	Energy sector	Government	Energy Efficiency Agency (AEE)	National	Yes
	AL	Financial sector	Government	National road authority	National	Yes
	AL	Environmental sector	Government	Institute of Transport	National	yes
	AL	Environmental sector	Government	Transmission System Operator	National	yes
	AL	Energy sector	Government	KESH sh.a	Local	yes
	AL	Environmental sector	Government	Municipality of Korca	Local	yes
	AL	Environmental sector	Government	Municipality of Pogradec	Local	yes
	AL	Environmental sector	NGO/Association	Prespa Ohrid Nature Trust in Albania	Local	Yes
	AL	Environmental sector	NGO/Association	Institute of Environmental policy Ohrid lake	Local	yes
	AL	Environmental sector	NGO/Association	The Resource Environmental Center, Albania Ohrid/prespa lake	National/local	yes
	AL	Administration /Water Sector	Government/Policy Makers	Municipality of Korca	Local	Yes
	AL	Administration /Water Sector	Government/Policy Makers	Municipality of Pogradec	Local	Yes
	AL	Environmental sector	NGO/Association	UNDP	National	yes

	AL	Environmental sector	NGO/Association	GIZ	National	yes
	AL	Environmental /Water sector	NGO/ Association	Global water partnership	National	yes
	GR	Environmental sector	NGO/Association	Society for the Protection of Prespa	Local	Yes
	GR	Agriculture sector	NGO/Association	Prespes Local Organisation for Land Improvements (TOEV Prespon)	Local	Yes
	GR	Agriculture sector	Business/Industry	Agricultural Cooperative of Bean Producers of the National Park of Prespa "Pelekanos"	Local	Yes
	GR	Agriculture sector	Business/Industry	Prespa Top	Local	Yes
	GR	Administration /Water Sector	Government/ Policy Makers	Municipality of Prespes	Local	Yes
	GR	Fishery Sector	NGO/ Association	Fishing Association of Prespes (Psarades)	Local	Yes
	GR	Fishery Sector	NGO/ Association	Fishing Association of Prespes "Kyprinos" (Mikrolimni)	Local	Yes
	GR	Education Sector	Local Citizen	Agios Germanos Elementary School	Local	Yes
	GR	Education Sector	Local Citizen	Laimos High School	Local	Yes
	GR	Tourism sector	NGO/Association	Association of Touristic and Related Activities in Prespes Municipality	Local	Yes
	GR	Tourism sector	Business/ Industry	Ecotourismo	Local	Yes
	GR	Tourism sector	Business/ Industry	Prespa Lakes/Wildlife and Culture	Local	Yes
	GR	Water Sector	Government/ Policy Makers	Decentralized Administration of Epirus and Western	Regional	No

				Macedonia - Water Directorate of Western Macedonia		
	GR	Environmental /Water Sector	Government/ Policy Makers	Region of Western Macedonia, Directorate of Environment and Spatial Planning, Department of Environment and Hydroeconomics – Florina Regional Unit	Regional	No
	GR	Engineering sector	Government/ Policy Makers	Region of Western Macedonia, Directorate of Civil Engineering– Florina Regional Unit	Regional	No
	GR	Agriculture sector	Government/ Policy Makers	Region of Western Macedonia, Department of Crop and Animal Production - Florina Regional Unit	Regional	No
	GR	Energy Sector	Government/ Policy Makers	Region of Western Macedonia, Directorate of Industry, Energy and Natural Resources	Regional	No
	GR	Health Sector	Government/ Policy Makers	Region of Western Macedonia, Directorate of Public Health and Social Care, Department of Environmental Hygiene and Sanitary Control	Regional	No
	GR	Fishery sector	Government/ Policy Makers	Region of Western Macedonia, Department of Fisheries - Florina Regional Unit	Regional	Yes
	GR	Agriculture sector	Research/ Academia	University of West Macedonia – School of Agriculture	Regional	No
	GR	Environmental Sector	Research/ Academia	Environmental Center of Western Macedonia	Regional	No

	GR	Commercial Sector	Business / Industry	Chamber of Florina	Regional	No
	GR	Development Sector	Business/ Industry	Developing Company of Florina	Regional	No
	GR	Engineering sector	Business/ Industry	Technical Chamber of Greece - Department of Western Macedonia	Regional	No
	GR	Environmental sector	Research/ Academia	Greek Biotope/Wetland Centre (EKBY)	National	Yes
	GR	Water Sector	Government/ Policy Makers	Ministry of Environment and Energy – General Directorate of Water	National	No
	GR	Environmental Sector	Government/ Policy Makers	Ministry of Environment and Energy - General Directorate of Environmental Policy	National	Yes
	GR	Energy Sector	Government/ Policy Makers	Ministry of Environment and Energy – General Directorate of Energy	National	No
	GR	Agriculture sector	Government/ Policy Makers	Ministry of Rural Development and Food - Directorate of Environment, Land Planning and Climate Change	National	Yes
	GR	Financial Sector	Business/ Industry	Pireaus Bank – Sector of Green Enterpreneurship – Environment Unit	National	No
	GR	Financial Sector	Business / Industry	National Bank of Greece – Directorate of Ecological Solutions	National	No
	GR	Energy Sector	Business/ Industry	Public Power Corporation S.A. (DEI) - Sustainability Department	National	No

	GR	Agriculture /Engineering sector	Research/ Academia	Hellenic Agricultural Organization Dimitra - Directorate for Development of Research and Technological Activities	National	No
	GR	Environmental Sector	Government/ Policy Makers	Ministry of Environment and Energy - Directorate of Management of Natural Environment and Biodiversity	National	Yes
	GR	Agriculture/Engineering sector	Business / Industry	Association of Manufacturers of Agricultural Machinery of Greece	National	No
	MK	Environmental /Water Sector	Government/Policy Makers	Ministry of Environment and Spatial Planning/ Department of Water	National	Yes
	MK	Environmental /Water	Government/Policy Makers	Ministry of Agriculture, Forestry and Water Economy/ Department of Water Economy	National	Yes
	MK	Energy Sector	Government/ Policy Makers	Power Plants of North Macedonia	National	Yes
	MK	Health Sector	Government/ Policy Makers	Institute of Public health of North Macedonia	National	Yes
	MK	Tourism Sector	Government/ Policy Makers	Ministry of Economy, Agency of Support and Promotion of Tourism	National	Yes
	MK	Development Sector	Government /Policy Makers	Ministry of Economy/ Sector of economic development	National	Yes
	MK	Agriculture/ Financial Sector	Government/ Policy Makers	Agency for financial support for agriculture and rural development	National	Yes
	MK	Financial Sector	Business	Komercijalna Bank AD Skopje/ Sector for green investments	National	Yes

	MK	Financial Sector	Business	Stopanska Bank Skopje/ Sector for green investments	National	No
	MK	Development Sector	Government /Policy Makers	Ministry for Local Self Government	National	Yes
	MK	Environmental /Climate Sector	Government/ Policy Makers	National Hydro meteorological Service of N.Macedonia	National	Yes
	MK	Research Sector	Research /Academia	Macedonian Academy of Sciences and Arts	National	Yes
	MK	Education Sector	Research /Academia	Faculty of Natural Sciences and Mathematics/ Institute of Biology	National	Yes
	MK	Health Sector	Government/ Policy Makers	Hydro biological Institute	National	Yes
	MK	Environmental Sector	NGO/Associations	Milieukontakt	National	Yes
	MK	Environmental /Water Sector	NGO/Association	Razbistri se/Institute for communication	National	Yes
	MK	Energy Sector	Business/industry	Chamber for SME in North Macedonia	National	Yes
	MK	Agricultural Sector	NGO/Associations	National Federation of Farmers	National	Yes
	MK	Water Sector	Government/ Policy Makers	Ministry of Environment, Crn Drim Basin Unit	Regional	Yes
	MK	Energy Sector	Government/ Policy Makers	Power Plants of N.Macedonia Hydropower company-Globocica Struga	Regional	Yes
	MK	Development Sector	Business/Industry	Center for Development of the South West Planning Region	Regional	Yes
	MK	Development Sector	Business/Industry	Center for Development of Pelagonia Planning Region	Regional	Yes

	MK	Environmental Sector	Government/Policy Makers	National Park Galicica	Regional	Yes
	MK	Environmental Sector	NGO/Association	PONT-Pont Prespa Ohrid Nature Trust in North Macedonia	Regional	Yes
	MK	Environmental Sector	Local Government/Policy Makers	Municipality of Ohrid	Local	Yes
	MK	Environmental Sector	Local Government/Policy Makers	Municipality of Resen	Local	Yes
	MK	Environmental Sector	Local Government/Policy Makers	Municipality of Struga	Local	Yes
	MK	Water Sector	Local Government/Policy Makers	Water supply and sewage- Ohrid	Local	Yes
	MK	Water Sector	Local Government/Policy Makers	Water supply and sewage- Resen	Local	Yes
	MK	Health Sector	Local Government/Policy Makers	Public health center Ohrid	Local	Yes
	MK	Environmental /Water Sector	NGO/Association	UNDP -Restoration of the Prespa Lake Ecosystemin North Macedonia	Local	Yes
	MK	Environmental Sector	NGO/Association	Local Development Agency	Local	Yes
	MK	Fishery Sector	NGO/Association	Fishing Association – Civil organisation Jadranski sliv	Local	Yes
	MK	Education Sector	Citizen	High school St. Kliment Ohriski, Ohrid	Local	Yes
	MK	Education Sector	Citizen	High school Car Samoil, Resen	Local	Yes
	MK	Education Sector	Citizen	Primary school Hristo Uzunov, Ohrid	Local	No
	MK	Education Sector	Citizen	Primary school Braka Miladinovci, Resen	Local	No

Case Study #5: Canary Islands

Sector	Subsector	Category	Name of Stakeholder	Scale
Water	Water manag.	Policy Makers	Tenerife Island Council (Cabildo)	Regional
		Policy Makers	La Palma Island Council (Cabildo)	Regional
		Policy Makers	El Hierro Island Council (Cabildo)	Regional
		Policy Makers	La Gomera Island Council (Cabildo)	Regional
		Policy Makers	Fuerteventura Island Council (Cabildo)	Regional
		Policy Makers	Gran Canaria Island Council	Regional
		Policy Makers	Lanzarote Island Council (Cabildo)	Regional
	Water distribution and wastewater management	Policy Makers	La Palma Island Water Council	Regional
		Policy Makers	EL Hierro Island Water Council	Regional
		Policy Makers	La Gomera Island Water Council	Regional
		Policy Makers	Tenerife Island Water Council	Regional
		Policy Makers	Gran Canaria Island Water Council	Regional
		Policy Makers	Fuerteventura Island Water Council	Regional
		Policy Makers	Lanzarote Island Water Council	Regional
	Desalination, Water distribution, Sanitation	Business	Canaragua	Local
		Business	Elmasa	Local
		Business	Emmasa	Local
		Business	Tagua	Local
		Business	Teidagua	Local
Climate change	General	Policy Makers	City Council of La Laguna	Local
		Policy Makers	Ministry of Ecological Transition	Regional
		Policy Makers	Spanish office for climate change (OECC)	National
		Business	Green Offices of the Canary Islands	Regional
		NGO	Ecologists in Action	National
Environment	Urban Planning	Business	Gesplan	Regional
Waste manag.	Waste planning	NGO	Canary Islands Recycling Foundation	Regional
Local TV		Press	RTVC	Regional
Forestry	CO_2 capture	NGO	Foresta Foundation	Regional
		Academia	University of Las Palmas de Gran Canaria	Regional
Energy	Renew. Energy project	Business	Gorona del Viento	Local
		Association	La Palma Renovable	Local
	Supply company	Business	Endesa	National
		Business	Iberdrola	National
		Business	Grupo DISA	Regional
Science	Institute	Association	National Geographic Institute	National
		Business	Canary Islands Technological Institute (ITC)	Regional
	Communication	Business	La Palma Research	Local
	Radio	Press	El Laboratorio	Local
	Macaronesia Res.	Association	Macaronight	Regional
Tourism	Data	Policy Makers	Directorate General for Tourism Management and Promotion	Regional

		Association	Ashotel	Regional
		Policy Makers	Ministry of Industry, Trade and Tourism	National
	Designation of Origin	Association	Canary Islands Hub	Regional
		Association	Canary Wine	Regional
Coast	Marine sector	Policy Makers	Coastal Demarcation of the Canary Islands	National
		Business	Ports of Tenerife	Local
		Association	Canary Ports	Regional
		Business	Fred Olsen S.A.	Regional
	Scientific Hub	Business	Plocan	Local
Statistics	Data	Business	ISTAC	Regional
Agriculture	Foundation	Business	GMR Canarias	Regional
	Company	Association	Coplaca	Regional
	Research Inst.	Business	ICIA	Regional
	Company	Business	Bonny S.L.	Local
Banking		Business	Cajasiete	Regional
		Business	La Caixa	National
Insurance	Foundation	Business	Mapfre Guanarteme	Regional

Case Study#6: Black Sea

Stakeholders					
Sector	***Category***	***Name of Stakeholder or Organization***	***Scale***	***Existing Contact***	***Completed by***
[e.g. Water sector, Energy sector, Construction sector, Tourism sector, Agriculture sector, Maritime sector etc.]	*[Business/Industry, Government/Policy Makers, Research/Academia, Local Citizen, NGO/Association]*	*[e.g. National Ministry of Water Resources]*	*[Local, National, Regional, International]*	*[Yes/ No]*	*Partner*
	Public Organisation	European Commission, DG Mare	International	Yes	BSEC/AUTh
	Regional Organisation	Black Sea Commission	International	Yes	BSEC
Government	Public Organisation	Ministry of Environment and Water of Bulgaria	National	Yes	BSEC
Government	Public Organisation	Ministry of Regional Developent of Bulgaria	National	Yes	BSEC
Government	Public Organisation	Ministry of Transport, Communications and Information Technologies of Bulgaria	National	Yes	BSEC

Government	Public Organisation	Ministry of Tourism of Bulgaria	National	Yes	BSEC
Government	Public Organisation	Ministry of Agriculture, Forestry and Food of Bulgaria	National	Yes	BSEC
Government	Public Organisation	Ministry of Energy of Bulgaria	National	Yes	BSEC
Maritime	Public Organisation	Executive agency "Maritime Administration" (Bulgaria)	National	Yes	BSEC
Maritime	Public Organisation	Bulgarian Ports Infrastructure Company	National	Yes	BSEC
Fisheries	Public Organisation	Executive Agency of Fisheries and Aquaculture (Bulgaria)	National	Yes	BSEC
Environmental Sector	Public Organisation	National Center for Territorial Development (Bulgaria)	National	Yes	BSEC
Research	Public Organisation	Bulgaria National Science Fund (BNSF)	National	Yes	BSEC
Government	Public Organisation	Bulgarian Diplomatic Institute	National	Yes	BSEC

Policy	Public Organisation	Municipality of Varna (Bulgaria)	Local	Yes	BSEC
Policy	Public Organisation	Municipal Council of Burgas (Bulgaria)	Local	Yes	BSEC
Policy	Public Organisation	Byala Municipality (Bulgaria)	Local	Yes	BSEC
Policy	Public Organisation	Dobrich Municipality (Bulgaria)	Local	Yes	BSEC
Policy	Public Organisation	Association of the Bulgarian Black Sea Municipalities	Regional	Yes	BSEC
Government	Public Organisation	Regional Administration of Burgas (Bulgaria)	Regional	Yes	BSEC
Government	Public Organisation	Regional Administration of Varna (Bulgaria)	Regional	Yes	BSEC
Government	Public Organisation	Regional Inspection of Environment and Water Burgas (Bulgaria)	Local	Yes	BSEC
Policy	Public Organisation	Shumen Municipality	Local	Yes	BSEC

Policy	Public Organisation	Stara Zagora Regional Development Agency	Local	Yes	BSEC
Policy	Public Organisation	Burgas District Administration	Regional	Yes	BSEC
Government	Regional Public Organisation	Black Sea Basin Directorate	Regional	Yes	BSEC
Academia	University	Plovdiv University	National	Yes	BSEC
Academia	University	Assen Zlatarov University	National	Yes	BSEC
Academia	University	Burgas Free University	National	Yes	BSEC
Academia	University	Sofia University "St.Kliment Ohridski" - Faculty of Geology and Geography	National	Yes	BSEC
Academia	University	Technical University of Varna	National	Yes	BSEC
Academia	University	Todor Kableshkov Higher School of Transport	National	Yes	BSEC

Academia	University	University of Economics - Varna	National	Yes	BSEC
Academia	University	University of Architecture, Civil Engineering and Geodecy (UACEG)	National	Yes	BSEC
Research	Academia	Center for Underwater Archaeology	National	Yes	BSEC
Academia	Academia	Naval Academy (Bulgaria)	National	Yes	BSEC
Academia	**Academia**	**Bulgarian Academy of Innovative Technologies Foundation (BAIT)**	**National**	**Yes**	BSEC
Academia	Academia	International Management Institute Dobrich (Bulgaria)	International	Yes	BSEC
Research	Academia	Joint Innovation Centre of Bulgarian Academy of Sciences	National	Yes	BSEC
Academia	Academia	N.Y. Vaptsarov Naval Academy	National	Yes	BSEC
Research	Academia	National Institute of Geophysics, Geodesy and Geography - Bulgarian Academy of Sciences	National	Yes	BSEC

Research	Research Foundation	Center for Coastal and Marine Studies (CCMS)	National	Yes	BSEC
Academia	Academia	Black Institute (Burgas)	National	Yes	BSEC
Academia	Private Sector Organization	Bulgarian National Association of Shipbuilding and Shiprepair	National	Yes	BSEC
	Private Sector Organization	Bulgarian Maritime Chamber	National	Yes	BSEC
	Private Sector Organization	Black Sea Economic Zone Cluster (BSEZC)	National	Yes	BSEC
	Private Sector Organization	Cluster Sofia Knowledge City	National	Yes	BSEC
	Private Sector Organization	Regional Cluster North East	Regional	Yes	BSEC
	Private Sector Organization	SEAFARERS Professional Development Cluster	National	Yes	BSEC
Maritime	Private Sector Organization	Bulgarian Chamber of Shipping	National	Yes	BSEC

	Private Sector Organization	Association of Architects	National	Yes	BSEC
	Private Sector Organization	Association of Women Entrepreneurs in Bulgaria	National	Yes	BSEC
	Private Sector Organization	Black Sea Association for Regional Development	Regional	Yes	BSEC
	Private Sector Organization	Bulgarian Chamber of Transport	National	Yes	BSEC
	Private Sector Organization	Bulgarian Cycling Association	National	Yes	BSEC
	Private Sector Organization	Bulgarian Industrial Association	National	Yes	BSEC
Water	Private Sector Organization	Bulgarian Water Association	National	Yes	BSEC
	Private Sector Organization	Chamber of Commerce and Industry Dobrich	National	Yes	BSEC
	Private Sector Organization	Chamber of Commerce and Industry Stara Zagora	National	Yes	BSEC

	Private Sector Organization	Confederation of Employers and Industrialists in Bulgaria	National	Yes	BSEC
	Private Sector Organization	Federation of Transport Trade Unions of Bulgaria	National	Yes	BSEC
	Private Sector Organization	Foundation for Sustainable Municipal and Regional Development	National	Yes	BSEC
	Private Sector Organization	Hunting and Fishing Association Varna	National	Yes	BSEC
Maritime	Private Sector Organization	Bulgarian Shipowners Association	National	Yes	BSEC
	Private Sector Organization	Bulgarian Association of Ship Brokers and Agents (BASBA)	National	Yes	BSEC
	Private Sector Organization	Plovdiv Chamber of Commerce and Industry	Local	Yes	BSEC
Tourism	Private Sector Organization	Tourist Association Kavarna	National	Yes	BSEC
	Private Sector Organization	Varna Chamber of Commerce and Industry	Local	Yes	BSEC

	Private Sector Organization	Black Sea Energy Cluster	National	Yes	BSEC
Maritime	Private Sector Organization	Port of Burgas	Local	Yes	BSEC
	Private Sector Organization	Innovation Academy - Starterbox	National	Yes	BSEC
	Private Sector Organization	Innovative Systems Burgas Ltd	National	Yes	BSEC
Research	Private Sector Organization	Institute for Ecological Modernisation	National	Yes	BSEC
Maritime	Private Sector Organization	Port of Varna	Local	Yes	BSEC
	Private Sector Organization	Black Sea Association for Development Burgas	Regional	Yes	BSEC
Tourism	Private Sector Organization	Burgas Regional Tourism Association	Regional	Yes	BSEC
	NGO	Bulgarian Biodiversity Foundation - Kaliakra Branch (BBF)	Regional	Yes	BSEC

	NGO	Bulgarian Centre for Sustainable Local Development and Ecopedagogy	National	Yes	BSEC
	NGO	Bulgarian Register of Shipping	National	Yes	BSEC
	NGO	Varna Economic Development Agency	Local	Yes	BSEC
	NGO	European Institute for Cultural Tourism "EUREKA"	International	Yes	BSEC
	NGO	Regional Agency for Entrepreneurhsip and Innovations - Varna (RAPIV)	Regional	Yes	BSEC
	NGO	Regional Development Agency	Regional	Yes	BSEC
	NGO	Regional Development Foundation	Regional	Yes	BSEC
	NGO	Regional Information Center Burgas	Regional	Yes	BSEC
	NGO	Association for Ecology and Sustainable Development "GETTA PONTICA"	National	Yes	BSEC

	NGO	Association of Natural Safety Organisations, Hunting - Fishin companies and Sporting Fishing Clubs in Burgas (APOLRDKSR)	National	Yes	BSEC
	NGO	FLAG Varna, Asparuhovo area - Beloslav - Aksakovo	National	Yes	BSEC
	NGO	FLAG Shabla-Kavarna-Balchik	National	Yes	BSEC
	NGO	Balkan Heritage Association	National	Yes	BSEC
	NGO	Black Sea- Danube Association of Research and Development (BDCA)	International	Yes	BSEC
	NGO	Black Sea Centre of Excellence	Regional	Yes	BSEC
	NGO	Black Sea Institute Association	Regional	Yes	BSEC
	NGO	Black Sea NGO Network	Regional	Yes	BSEC
	NGO	Black Sea Research Programme	Regional	Yes	BSEC
	NGO	Black Sea Sunrise Fisherise Association	Regional	Yes	BSEC
	NGO	Bulgarian Association for Transfer of Technology and Innovation	National	Yes	BSEC
	NGO	Bulgarian Business Forums	National	Yes	BSEC
	NGO	Europeean Association Fishermen in the black Sea	International	Yes	BSEC
	NGO	Foundation Via Pontica	National	Yes	BSEC

	NGO	Innovations and Quality in Tourism	National	Yes	BSEC
	NGO	International Center for Development of Education and Training	International	Yes	BSEC
	NGO	KLADARA Foundation	National	Yes	BSEC
	NGO	WWF Bulgaria	National	Yes	BSEC
	NGO	Branch Terittorial Directorate Burgas (Bulgaria)	National	Yes	BSEC
	NGO	Fresh Thoughts Consulting GmbH	National	Yes	BSEC
Government	Public Organisation	Ministry of Environment, Waters and Forests (Romania)	National	Yes	BSEC/AUTh
Government	Public Organisation	Ministry of Foreign Affairs (Romania)		Yes	BSEC
Government	Public Organisation	Ministry of Public Works, Development and Administration (Romania)		Yes	BSEC
Government	Public Organisation	Managing Authority-Black Sea Basin Joint Operational Programme (Romania)		Yes	BSEC
Government	Public Organisation	Ministry of Transport and Infrastructure (Romania)		Yes	BSEC
Research	Public Organisation	INHGA - National Institute of Hydrology and Water Management		Yes	BSEC

Environmental Sector	Public Organisation	National Agency for Protected Natural Areas		Yes	BSEC
Government	Public Organisation	General Inspectorate for Emergency Situtations (Romania)		Yes	BSEC
Environmental Sector	Public Organisation	National Meteorological Administration (Romania)		Yes	BSEC
Research	Public Organisation	URBAN-INCERC - National Institute for Research-Development in Constructions, Urbanism and Sustainable Territorial Development		Yes	BSEC
Government	Public Organisation	ANRSC - National Romanian Regulator for Public Services		Yes	BSEC
Education	Public Organisation	CERONAV - Romanian Center for Training and Development of Naval Transport Personnel		Yes	BSEC
	Public Organisation	South East Regional Development Agency		Yes	BSEC
	Private Sector Organization	CCIR - The Chamber of Commerce and Industry of Romania		Yes	BSEC
	Private Sector Organization	AmCham Romania - American Chamber of Commerce in Romania		Yes	BSEC

	Private Sector Organization	Black Sea Euroregion Cooperation Association		Yes	BSEC
	Private Sector Organization	ARA - Romanian Water Association		Yes	BSEC
	Private Sector Organization	Romanian Architects Union		Yes	BSEC
	Private Sector Organization	Ramboll		Yes	BSEC
	NGO	Mare Nostrum		Yes	BSEC
	NGO	World Wide Fund for Nature - Romania (WWF Romania)		Yes	BSEC
	NGO	Association for Sustainable Development Prut-Danube Galati		Yes	BSEC
	NGO	CNDD - National Center for Sustainable Development		Yes	BSEC
	NGO	OCEANIC-CLUB NGO: Society of Oceanographic Explorations and Protection of the Marine Environment		Yes	BSEC
	NGO	FOND - Federation of Non-Governmental Organizations for Development in Romania		Yes	BSEC

	NGO	Association for the Protection of Human Being and Environment for a Sustainable Development in the world		Yes	BSEC
	NGO	Centrul de Dezvoltare SMART		Yes	BSEC
	NGO	Coalitia Natura		Yes	BSEC
	NGO	Romanian Environmental Protection Association		Yes	BSEC
	NGO	Ecopolis		Yes	BSEC
	NGO	Let's do it Romania		Yes	BSEC
	NGO	Asociatia Mai Mult Verde		Yes	BSEC
	NGO	Green Peace		Yes	BSEC
	NGO	Terra Mileniul III		Yes	BSEC
	NGO	Green Report Romania		Yes	BSEC
	NGO	Agent Green		Yes	BSEC
	NGO	Galati Foundation for the Promotion of Small and Medium Sized Private Enterprises		Yes	BSEC
	Academia	Faculty of Geography Bucharest		Yes	BSEC
Academia	Academia	The Technical University of Civil Engineering of Bucharest		Yes	BSEC
Academia	Academia	"Ovidius" University of Constanța		Yes	BSEC

Academia	Academia	Dunarea de Jos University of Galati		Yes	BSEC
	Academia	Ecological Faculty		Yes	BSEC
Policy	Municipalities Association	AMR - Romanian Municipalities Association		Yes	BSEC
Policy	Municipality	Constanța Municipality		Yes	BSEC
Policy	Municipality	Galați		Yes	BSEC
Policy	Locality	Eforie		Yes	BSEC
Policy	Locality	Costinești		Yes	BSEC
Policy	Locality	Tulcea		Yes	BSEC
Policy	Locality	Corbu		Yes	BSEC
Policy	Locality	Cernavodă		Yes	BSEC
Policy	Locality	Mangalia		Yes	BSEC
Government	Public Organisation	Ministry of Environment and Urbanisation (MoEU)	National	Yes	BSEC
Government	Public Organisation	Ministry of Environment and Urbanisation (MoEU) DG Environmental Management, Marine and Coastal Management Department Ankara	National	Yes	BSEC
Government	Public Organisation	Ministry of Environment and Urbanisation (MoEU) DG Environmental Impact Assessment, Permit and Inspection	National	Yes	BSEC
Government	Public Organisation	Ministry of Agriculture and Forestry (MoAF)	National	Yes	BSEC

Government	SRIA contact point	Institute of Marine Sciences of Middle East Technical University	National	Yes	BSEC
Government	Local Government	Sariyer Municipality (Istanbul)	National	Yes	BSEC
Government	University	Turkish Foundation for Combating Soil Erosion	National	Yes	BSEC
Academia	University	Black Sea Technical University	National	Yes	BSEC
Academia	University	Istanbul University	National	Yes	BSEC
Academia	University	9 Eylul University	National	Yes	BSEC
Academia	University	Ankara University	National	Yes	BSEC
Academia	University	Istanbul Bigli University, Law Faculty	National	Yes	BSEC
Research	University	ÇAMBURNU TRABZON, Faculty of Marine Science	National	Yes	BSEC
Research	University	Sinop University, Faculty of Fisheries, Department of Marine Biology	National	Yes	BSEC
Environmental Sector	NGO	Regional Environmental Center Turkey	National	Yes	BSEC
Environmental Sector	NGO	WWF Turkey	National	Yes	BSEC
	Public Organisation	UNDP	International	Yes	BSEC
Environmental Sector	NGO	Environmental Foundation of Turkey	National	Yes	BSEC
Financial Sector	Financial Sector	Turkish Development and Investment Bank	National	Yes	BSEC

Financial Sector	Financial Sector	Industrial Development Bank of Turkey (TSKB)	National	Yes	BSEC
Financial Sector	Financial Sector	Ilbank (Public bank subordinated to MoEU)	National	Yes	BSEC
	Regional Development Agency	Middle Black Sea Development Agency	National	Yes	BSEC
	Financial Sector	Istanbul Development Agency (TSKB)	National	Yes	BSEC
	NGO	Turmepa – Turkey Marine Environment Protection Association	nATIONAL	Yes	BSEC
	NGO	Doga Dernegi – Nature Foundation	nATIONAL	Yes	BSEC
	NGO	CEKUL - Foundation for the Protection and Promotion of the Environment and Cultural Heritage	nATIONAL	Yes	BSEC
	NGO	CEVKO – Environment Protection and Packaging Waste Valorization Foundation	National	Yes	BSEC
	NGO	Turkiye Tabiatini Koruma Dernegi – Turkey Nature Protection Foundation	National	Yes	BSEC
	NGO	Türkiye Çevre Koruma Vakfı-Tüçev	National	Yes	BSEC
	NGO	SAD Su Altı Araştırma Derneği	National	Yes	BSEC

	NGO	TBB- Türkiye Belediyeler Birliği	National	Yes	BSEC
	Public Organisation	Karadeniz SUMAE	National	Yes	BSEC
	Public Organisation	European Commission	International	Yes	BSEC
	Public Organisation	EU Delegation Turkey	International	Yes	BSEC
	Business/Private Sector	Black Sea Assistance Mechanism (BSAM)	International	Yes	BSEC
	Business/Private Sector	BSAM	International	Yes	BSEC
	Public Organisation	Minstry of Agriculture and Forestry (Tarım ve Orman Bakanlığı) DG Nature Conservation and National Parks (Doğa Koruma ve Milli Parklar Genel Müdürlüğü)	National	Yes	BSEC
	Public Organisation	Minstry of Agriculture and Forestry (Tarım ve Orman Bakanlığı) DG Water Management (Su Yönetimi Genel Müdürlüğü)	National	Yes	BSEC
	Public Organisation	Minstry of Agriculture and Forestry (Tarım ve Orman Bakanlığı) DG Fisheries and Aquaculture (Balıkçılık ve Su Ürünleri Genel Müdürlüğü)	National	Yes	BSEC

	Public Organisation	Ministry of Energy and Natural Resources (Enerji ve Tabii Kaynaklar Bakanlığı) Energy Efficiency and Environment Department (Enerji Verimliliği ve Çevre Dairesi Başkanlığı)	National	Yes	BSEC
	Public Organisation	Ministry of Internal Affairs (İçişleri Bakanlığı) Turkish Coast Guard Command (Sahil Güvenlik Komutanlığı)	National	Yes	BSEC
	Public Organisation	TURKSTAT Türkiye İstatistik Kurumu	National	Yes	BSEC
	Public Organisation	DG Spatial Planning (Mekânsal Planlama Genel Müdürlüğü)	National	Yes	BSEC
	Public Organisation	DG for Protection of Natural Assests (Tabiat Varlıklarını Koruma Genel Müdürlüğü)	National	Yes	BSEC
	Public Organisation	Office of Legal Counsellor (Hukuk Hizmetleri Genel Müdürlüğü)	National	Yes	BSEC

	Public Organisation	DG of Environmental Impact Assessment, Permit and Inspection (Çevresel Etki Değerlendirmesi, İzin ve Denetim Genel Müdürlüğü)	National	Yes	BSEC
	Public Organisation	DG European Union and Foreign Relations (Avrupa Birliği ve Dış İlişkiler Genel Müdürlüğü)	National	Yes	BSEC
	Public Organisation	DG Environmental Management (Çevre Yönetimi Genel Müdürlüğü)	National	Yes	BSEC
	International Organisation	Gıda ve Tarım Örgütü Türkiye Temsilciliği FAO Turkey Office	International	Yes	BSEC
	Public Organisation	Ministry of Foreign Affairs of Ukraine	International	Yes	BSEC
	Public Organisation	Fisheries and Maritime Affairs Mission of Ukraine to the European Union	International	Yes	BSEC
	Public Organisation	Institute of Marine Ecology of the NAS of Ukraine	International	Yes	BSEC
	Public Organisation	Ukrainian Association of Investment Business	International	Yes	BSEC
	Public Organisation	State Finance Institution for Innovation	International	Yes	BSEC

	Public Organisation	State Scientific Institution "Center of Problems Marine Geology, Geoecology and Sedimentary Ore Formation of the National Academy of Sciences of Ukraine "	International	Yes	BSEC
	Research institution	Center of the Ecological Monitoring and Ecological Studies of the I. Mechnikov Odesa National University	International	Yes	BSEC
	Research institution	Institute of marine biology of the National Academy of Science	International	Yes	BSEC
	Research institution	Odesa Ecological University	International	Yes	BSEC
	Public Organisation	State Fisheries Agency	International	Yes	BSEC
	Public Organisation	Ministry of infrastructure of Ukraine	International	Yes	BSEC
	Public Organisation	Sea Port Authority	International	Yes	BSEC
	NGO	NGO «Ukraine's fishing industry cluster of innovations»	International	Yes	BSEC
	Public Organisation	State Fisheries Agency	International	Yes	BSEC
	NGO	NGO «Ukraine's fishing industry cluster of innovations»	International	Yes	BSEC
	Public Organisation	Ministry of Economic Development of Ukraine	International	Yes	BSEC

	Research Institution	National Academy of Science of Ukraine	International	Yes	BSEC/AUTh
	NGO	Let's make Ukraine clean again	International	Yes	BSEC
	NGO	Ecoclub Rivne	International	Yes	BSEC
	NGO	Ecodiya	International	Yes	BSEC
	NGO	Ecoclub	International	Yes	BSEC
	NGO	Green Dossier	International	Yes	BSEC
	NGO	WWF Ukraine	International	Yes	BSEC
	NGO	Environment People Law	International	Yes	BSEC
	NGO	International Environmental Safety	International	Yes	BSEC
	NGO	Green Pack Project	International	Yes	BSEC
	NGO	Greencubator	International	Yes	BSEC
	Private sector	Environmental Institute (Emblas+)	International	Yes	BSEC
	Public Organisation	UNDP Ukraine (Emblas+)	International	Yes	BSEC
		World Bank	International	Yes	BSEC
	GEF Operational Focal Point	Ministry of Environment and Natural Resources	International	Yes	BSEC
	Public Organisation	National Environment Agency of Georgia	International	Yes	BSEC
	Public Organisation	Ministry of Environment Protection and Agriculture	International	Yes	BSEC
	Public Organisation	Ministry of Economy and Sustainable Development	International	Yes	BSEC
	NGO	CAUCASUS Environmental NGO Network	International	Yes	BSEC
	NGO	CIVITAS Georgica	International	Yes	BSEC

	NGO	Georgia Tourism Institute	International	Yes	BSEC
	NGO	Global Business Development Center	International	Yes	BSEC
	NGO	International Association Tip	International	Yes	BSEC
	NGO	The Regional Environmental Centre for the Caucasus	International	Yes	BSEC
	Research Institute	Centre for Ecostrategic Studies	International	Yes	BSEC
	Research Institute	Engineering Research Institute Geomap LLC	International	Yes	BSEC
	Research Institute	Georgian Institute for Public Affairs	International	Yes	BSEC
	Research Institute	Georgian Research and Educational Network	International	Yes	BSEC
	Research Institute	Georgian Water Management Institute	International	Yes	BSEC
	Research Institute	Regional Development Institute of Georgia	International	Yes	BSEC
	Research Institute	Science and Anargetics	International	Yes	BSEC
	Research Institute	The Black Sea Flora and Fauna Educational Scientific-Research Centre Ltd "BATUMI DOLPHINARIUM"	International	Yes	BSEC
	University	Akaki Tsereteli University	International	Yes	BSEC
	University	Batumi High Maritime Engineering School ANRI, LLC	International	Yes	BSEC

	University	BATUMI Navigation Teaching University	International	Yes	BSEC
	University	BATUMI SHOTA RUSTAVELI State University	International	Yes	BSEC
	University	BATUMI STATE Maritime Academy (BSMA)	International	Yes	BSEC
	University	Georgian Technical University	International	Yes	BSEC
	University	ILIA State University	International	Yes	BSEC
	University	IVAN JAVAKHISHVILI Tbilisi State University	International	Yes	BSEC
	University	TELAVI State University	International	Yes	BSEC
	University	University Ialeka	International	Yes	BSEC
	Public Organisation	Association Flora & Fauna	International	Yes	BSEC
	Public Organisation	Civil Development Agency	International	Yes	BSEC
	Public Organisation	Committee on Agricultural and Environment Protection Issues of the Supreme Council of the Autonomous Republic of Ajara	International	Yes	BSEC
	Public Organisation	KOLKHETI National Park Administration - Agency of Protected Areas	International	Yes	BSEC
	Public Organisation	Ministry of Education, Science and Sport Organisation	International	Yes	BSEC

	Public Organisation	Ministry of Environmental Protection and Agriculture (MEPA)	International	Yes	BSEC
	Public Organisation	Energy Greforms and International Relations Department (MoESD)	International	Yes	BSEC
	Public Organisation	Georgian Energy Development Fund (MoESD)	International	Yes	BSEC
	Public Organisation	Ministry of Agriculture of Adjara (MoA)	International	Yes	BSEC
	Public Organisation	Division of Environmental Protection and Natural Resources (MoA)	International	Yes	BSEC
	Public Organisation	Adjara Forest Agency (MoA)	International	Yes	BSEC
	Regional Administration	Guria (Government) Administration of State Representative	International	Yes	BSEC
	Regional Administration	Samegrelo-Zemo Svaneti (Government) Administration of State Representative	International	Yes	BSEC
	Local Administration	Khelvatchauri Municipality	International	Yes	BSEC
	Local Administration	Kobuleti Municipality	International	Yes	BSEC
	Local Administration	Ozurgeti Municipality	International	Yes	BSEC
	Local Administration	Lanchkhuti Municipality	International	Yes	BSEC
	Local Administration	Poti Municipality	International	Yes	BSEC
	Local Administration	Khobi Municipality	International	Yes	BSEC

	Local Administration	Zugdidi Municipality	International	Yes	BSEC
	Private Sector	Energy Efficiency Centre (EEC)	International	Yes	BSEC
	Public Organisation	UNDP - EU4 Climate Initiative	International	Yes	BSEC
	Public Organisation	UNDP - Strengthening the Climate Adaptation Capacities in Georgia	International	Yes	BSEC
	NGO	Greens Movement of Georgia / Friends of the Earth, Georgia	International	Yes	BSEC
	Public Organisation	World Bank Group	International	Yes	BSEC
	Private Sector	BBSEA	International	Yes	BSEC
	Private Sector	Supsa Oil Terminal	International	Yes	BSEC
	Private Sector	APM Terminals Poti	International	Yes	BSEC
	Private Sector	Batumi Oil Terminal	International	Yes	BSEC
	Private Sector	Batumi International Container Terminal LLC	International	Yes	BSEC
	Private Sector	Black Sea Terminal LLC	International	Yes	BSEC
	Private Sector	Batumi Sea Port	International	Yes	BSEC
	Private Sector	Poseidon's World	International	Yes	BSEC
	Private sector	Poti Free Economic Zone	International	Yes	BSEC
	NGO	CaucasusGEORGIA	International	Yes	BSEC
	NGO	Fauna & Flora International	International	Yes	BSEC
	Research organisation	EU Black Sea Connect Project	International	Yes	BSEC
	Private sector	GIS and RS Consulting Center GeoGraphic	International	Yes	BSEC

	Public Organisation	International Relations Division, Department of Investment and SME Development of Krasnodar Region	International	Yes	BSEC
	Public Organisation	Labour Productivity Centre of Krasnodar Region	International	Yes	BSEC
	Public Organisation	Territorial Development Strategy Unit, Ministry of Economy of the Krasnodar Region	International	Yes	BSEC
	Public Organisation	Ministry of Economy of the Krasnodar Region	International	Yes	BSEC
	Academia	Institute for Earth Sciences of Southern Federal University	International	Yes	BSEC
	Public Organisation	Ministry of Economic Development of Rostov Region	International	Yes	BSEC
	Public Organisation	Ministry of Natural Resources of the Krasnodar Region	International	Yes	BSEC
	Research	Shirshov Institute of Oceanology of Russian Academy of Sciences	International	Yes	BSEC
	Research	Marine Pollution Monitoring Lab. of the N.N. Zubov State Oceanographic Insitute	International	Yes	BSEC

	Public Organisation	Department of International Cooperation and Climate Change of the Ministry of Natural Resources and Environment of the Russian Federation	International	Yes	BSEC
	Research	Institute of Oceanology of Russian Academy of Sciences	International	Yes	BSEC
	Research	Institute for National Marine Policy Integrated Study RTU-MIREA	International	Yes	BSEC
	Research	Scientific and Research Institute of Maritime Spatial Planning «Ermak NorthWest»	International	Yes	BSEC
	Public Organisation	Deparment for Multilateral Economic Cooperation and Special Projects of the Ministry of Economic Development of the Russian Federation	International	Yes	BSEC

	Public Organisation	Division of International Organisations and Conventions, Department of International Cooperation and Climate Change of the Ministry of Natural Resources and Environment of the Russian Federation	International	Yes	BSEC
	Public Organisation	Department of Federal Service for Supervision of Natural Resources (Rosprirodnadzor) across Southern Federal District	International	Yes	BSEC
	Public Organisation	Ministry of Agriculture, Regional Development and Environment	International	Yes	BSEC
	Public Organisation	Ministry of Economy and Infrastructure	International	Yes	BSEC
	Public Organisation	Ministry of Foreign Affairs and European Integration	International	Yes	BSEC
	NGO	Eco-Tiras	International	Yes	BSEC
	NGO	EcoContact	International	Yes	BSEC
	Public Organisation	National Environmental Center	International	Yes	BSEC
		The Ecological Movement of Moldova	International	Yes	BSEC
		Biotica	International	Yes	BSEC
		Rec Moldova	International	Yes	BSEC

		"Apele Moldovei" Agency	International	Yes	BSEC
	Public Organisation	Regional Development Agencies (North, South Center, ATU Gagauzia)	International	Yes	BSEC
	Public Organisation	Environmental agency	International	Yes	BSEC
	Public Organisation	State Ecological Inspectorate	International	Yes	BSEC
	Research	Academy of Science of Moldova	International	Yes	BSEC
	Academia	Technical University of Moldova	International	Yes	BSEC
	Academia	Tiraspol State University	International	Yes	BSEC
	Public Organisation	State Hydrometeorological Service	International	Yes	BSEC
	Public Organisation	Tourism Agency of the Republic of Moldova	International	Yes	BSEC
	Public Organisation	Naval Agency (Moldova)	International	Yes	BSEC
	NGO	CEE Cahul - Ecological Counceling Center	International	Yes	BSEC
	NGO	AO Cutezatorul	International	Yes	BSEC
		EU4 Environment Moldova	International	Yes	BSEC
		Black Sea Connect Project, Young Ambassadors	International	Yes	BSEC
	NGO	BIOS	International	Yes	BSEC
		Ecological Movement of Stefan Voda	International	Yes	BSEC
		Regional Environmental Centre (Moldova)	International	Yes	BSEC
		UNDP	International	Yes	BSEC

Government	Government	Burgas Regional Administration	Regional	No	CTBG
Government	Government, Policy Maker	Ministry of Environment and Water	International	Yes	CTBG/BSEC
Government	Government	Regional Inspectorate of Environment and Water, Burgas	Regional	No	CTBG
Government	Government	Executive Forest Agency, Regional Directorate of Forests - Burgas	Regional	No	CTBG
Government	Government	Municipality of Burgas	International	Yes	CTBG/BSEC
Government	Government	Municipality of Sozopol	International	Yes	CTBG/BSEC
Government	Government	Municipality of Primorsko	Local	No	CTBG
Government	Government	Black Sea Basin Directorate - Varna	International	Yes	CTBG/BSEC
Water Sector	Business	Water Supply and Sewerage - Burgas EAD	Regional	No	CTBG
Government	Government	Regional Directorate of the Ministry of Interior - Burgas	Regional	No	CTBG
Government	Government	General Directorate “Fire Safety and Civil Protection” at the Ministry of Interior (GDFSCP-MoI), Regional Office	Regional	No	CTBG
Water sector	Academia	University “Prof. d-r Asen Zlatarov” - Burgas	Regional	Yes	CTBG

Forest Sector	Business	Companies in the field of forestry	Local	No	CTBG
Biodiversity	NGO	WWF - Bulgaria	International	Yes	CTBG
Biodiversity	NGO	Bulgarian Society for the Protection of Birds	National	No	CTBG
Biodiversity	NGO	Green Balkans	International	No	CTBG/BSEC
Biodiversity	NGO	Balkans	National	No	CTBG
Biodiversity	NGO	Bulgarian Biodiversity Foundation	International	No	CTBG/BSEC
Tourism	Business	Tourist companies	Regional	No	CTBG
Water Sector	Local Citizen	Natural persons living in the settlements falling within the scope of potential measures and results	Local	No	CTBG
Forest Sector	Local Citizen	Private forest owners	Local	No	CTBG
Maritime	Research/Academia	The National Institute for Marine Research and Development "Grigore Antipa" Constanta	International	Yes	BSUN/BSEC/INCDSB/METU
River Sea	Research/Academia	National Research Institute for Biological Sciences	National	Yes	BSUN
Education	Research/Academia	Maritime University of Constanta	International	Yes	BSUN/BSEC
Education	Research/Academia	„Mircea cel Bătran" Naval Academy	International	Yes	BSUN/BSEC/INCDSB

Energy	NGO/Associaton	Association Cluster MEDGreen for Promoting Businesses Specialized in Ecotechnologies and Alternative Energy Sources – MEDGreen	Regional	Yes	BSUN
Education	International Organisation	Black Sea Universities Network	International	Yes	BSUN
Water Sector	Business/Industry	Water Administration S.A	National	Yes	BSUN
Sustainable Development	NGO/Association	Constanta Metropolitan Area	Regional	Yes	BSUN
Environmental & Sustainable Development	Government/Policy Makers	National Council for Environment and Sustainable Development	National	Yes	BSUN
Commercial, Industrial, and Agricultural Sector	Business/Industry	The Chamber of Commerce, Industry and Agriculture of Calarasi	Regional	Yes	BSUN
Commercial, Industrial, and Agricultural Sector	Business/Industry	The Chamber of Commerce, Industry, Navigation and Agriculture of Constanta	Regional	Yes	BSUN
Fishing/Aquaculture	Government/Policy Makers	National Agency for Fishing and Aquaculture	National	Yes	BSUN
Education	Research/Academia	„Dunărea de Jos" University of Galaţi	Local	Yes	BSUN
Business	Business/Industry	Industrial Park of Galați	Local	Yes	BSUN
Natural and Cultural Heritage	Research/Academia	„Gavrilă Simion" Eco-Museum Research Institute Tulcea	Regional	Yes	BSUN

Natural Heritage Administration	Government/Policy Makers	Danube Delta Biosphere Authority	International	Yes	BSUN/BSEC
Tourism	NGO/Association	Ivan Patzaichin— Mila 23 Association	Local	Yes	BSUN
Maritime	Business/Industry	Oceanic Club	Regional	Yes	BSUN
Fishing/Aquaculture	NGO/Association	DOBROGEA NORD Local Group Association (FLAG Dobrogea Nord	Local	Yes	BSUN
Energy	Research/Academia	National Research and Development Institute for Cryogenic and Isotopic Technologies (ICSI Rm. Valcea)	National	Yes	BSUN
Fishing/Aquaculture	NGO/Association	RO-PESCADOR Association	National	Yes	BSUN
	Local Citizen Government/Policy makers	Murighiol City Hall	International	Yes	INCDSB/BSUN
	Business/Industry	BEIA CONSULT INTERNATIONAL	International	Yes	INCDSB/BSUN
Water Sector	Government/Policy Makers	National Administration of Romanian Waters	International	No	INCDSB/BSEC
Water Sector	Government/Policy Makers	ABA Dobrogea-Litoral	International	No	INCDSB/BSEC
Water Sector	Research/Academia	Romanian Academy	National	No	INCDSB
Water Sector	NGO/Association	3D-BS Cluster (sustainable development of the coastal area and neighboring regions)	International	No	INCDSB/BSUN

Water Sector/ Ecological and Environmental Protection	Research/Academia	National Research and Development Institute “Danube Delta”	International	Yes	INCDSB/BSUN
Water Sector	Research/Academia	National Institute for Research and Development of Marine Geology and Geoecology – GeoEcoMar	International	Yes	INCDSB/BSUN/METU
Water Sector	Research/Academia	„Danubius” University	International	Yes	INCDSB/BSUN
Energy	NGO/Association	Romanian Association of Biomass and Biogas	National		INCDSB
Energy	NGO/Association	European Biogas Association	International		INCDSB
Energy	NGO/Association	Biogasinno Sustainable Energy Cluster	National		INCDSB
Energy	Research/Academia	Institute for Studies and Power Engineering	National		INCDSB
Agriculture sector	Government/Policy Makers	Romanian Ministry of Agriculture, Forests and Rural Development	International		INCDSB/BSEC
Agriculture sector	NGO/Association	Romanian Farmers Club for Performance Agriculture	National		INCDSB
Agriculture sector	NGO/Association	IND-AGRO-POL competitiveness pole	International	Yes	INCDSB/BSUN
Environmental sector/ Biological Research Sector	Research/Academia	Institute of Biological Research Cluj Napoca	International	Yes	INCDSB/BSUN

Environmental sector	Research/Academia	National Research and Development Institute for Environmental Protection	National	Yes	INCDSB
Environmental sector	Research/Academia	National Institute for Research and Development for Industrial Ecology	National	Yes	INCDSB
Environmental sector	Research/Academia	National Research and Development Institute for Soil Science, Agro-chemistry and Environment	National	Yes	INCDSB
Environmental sector	Research/Academia	Institute of Ecology and Geography of the Academy of Sciences of the Republic of Moldova	International		INCDSB/BSEC
Fisheries	Government	Central Fisheries Research Institute (SUMAE)	National	Yes	METU
	Government	Republic of Turkey Turkish Naval Forces Command Office of Navigation, Hydrography and Oceanography	International	Yes	METU/BSEC
Energy	Government	Republic of Turkey General Directorate of Mineral Research and Exploration	National	Yes	METU
	Government	Republic of Turkey Ministry of Environment, Urbanisation and Climate Change	National	Yes	METU

Tourism	Government	Republic of Turkey Ministry of Culture and Tourism	International	Yes	METU/BSEC
EU Affairs	Government	Republic of Turkey Ministry of Foreign Affairs - Directorate for EU Affairs	National	Yes	METU
Industry	Government	Republic of Turkey Ministry of Industry and Technology	National	Yes	METU
Maritime Transport	Government	Republic of Turkey Ministry of Transport and Infrastructure	International	Yes	METU/BSEC
	Business	Western Black Sea Development Agency	National	Yes	METU
	Business	Eastern Black Sea Development Agency	International	Yes	METU/BSEC
Maritime	Business	IMEAK Chamber of Shipping	National	Yes	METU
	Business	The Economic Policy Research Foundation of Turkey	National	Yes	METU
	Business	The Union of Chambers and Commodity Exchanges of Turkey (TOBB)	International	Yes	METU/BSEC
	Association	Union of Municipalities of Marmara	National	Yes	METU
Research	Government	TUBITAK - The Scientific and Technological Research Council of Turkey	International	Yes	METU/BSEC
Research	Government	TUBITAK Marmara Research Center	National	Yes	METU

Research	NGO	Turkish Marine Research Foundation: TUDAV	International	Yes	METU/BSEC
Research	Academia	Istanbul University (Institute of Marine Sciences and Management)	National	Yes	METU
Research	Academia	Recep Tayyip Erdogan University (Faculty of Fisheries)	National	Yes	METU
Research	Academia	Ege University (Faculty of Fisheries)	National	Yes	METU
Research	Academia	Ordu University (Faculty of Marine Sciences Fatsa)	National	Yes	METU
Research	Academia	Piri Reis University the Maritime Faculty	National	Yes	METU
Research	Academia	Sinop University	National	Yes	METU
Research	Academia	Ankara University	National	Yes	METU
Research	Academia	Middle East Technical University (Center for Black Sea and Central Asia)	National	Yes	METU
Research	Academia	Middle East Technical University (Department of Environmental Engineering)	National	Yes	METU
Research	Academia	Middle East Technical University (Department of Mechanical Engineering)	National	Yes	METU
Research	Academia	Karadeniz Technical University	National	Yes	METU
Research	Academia	Koç University	National	Yes	METU

Research	Academia	Dokuz Eylul University (Maritime Faculty)	National	Yes	METU
Policy	Government	Black Sea Economic Cooperation (BSEC)	Regional	Yes	METU
Policy	Government	Black Sea Commission (BSC)	International	Yes	METU/BSEC
Banking	Business	Black Sea Trade and Development Bank	International	Yes	METU/BSEC
Policy	Government	Conference of Peripheral Maritime Regions (CPMR)	Regional	Yes	METU
Policy	Government	General Fisheries Commission for the Mediterranean - GFCM	Regional	Yes	METU
Policy	Non-profit / thinktank	International Center for Black Sea Studies (ICBSS)	Regional	Yes	METU
Policy	Non-profit	Black Sea Assistance Mechanism (BSAM)	Regional	Yes	METU
Research	Academia	IO-BAS - Bulgarian Academy of Sciences Institute of Oceanology, Bulgaria	International	Yes	METU/BSEC
Research	Academia	IBER-BAS - Institute of Biodiversity and Ecosystem Research - Bulgarian Academy of Sciences, Bulgaria	International	Yes	METU/BSEC
Research	Academia	UkrSCES - Ukrainian scientific Centre of Ecology of Sea, Ukraine	International	Yes	METU/BSEC

Research	Academia	TSU - Ivane Javakhishvili Tbilisi State University, Georgia	National	Yes	METU
Research	Academia	SIO-RAS - P.P. Shirshov Institute of Oceanology of Russian Academy of Sciences, Russia	National	Yes	METU
Research	Academia	HCMR - Hellenic Centre for Marine Research, Greece	International	Yes	METU/BSEC/AUTh
Research	Academia	RTU MIREA - Russian Technological University MIREA, Russia	National	Yes	METU
Research	Academia	IFREMER - Institut Français De Recherche pour l'Exploitation de la Mer, France	International	Yes	METU
Research	Academia	Helmholtz Zentrum Hereon, Germany	International	Yes	METU
Maritime	Business	Marine Cluster Bulgaria	International	Yes	METU/BSEC
Education	Association	European Marine Science Educators Association	International	Yes	METU
Policy	Association	European Marine Board Ivzw	International	Yes	METU
Research	Non-profit	JPI Oceans	International	Yes	METU
Research	Public Organisation	National Statistical Institute (Bulgaria)	National	Yes	AUTh

Government	Public Organisation	General Secretary of Legal and Parliamentary Issues (Greece)	National	Yes	AUTh
Government	Public Organisation	Department of Sustainable Development (Government of Romania)	National	Yes	AUTh
	Government/Policy Makers	Regional Cooperation Council	Regional	Yes	AUTh
	Research	EC - Joint Research Centre	International	Yes	AUTh
	Research/Policy Makers	European Environment Agency (EEA)	International	No	AUTh
	Association	UN SDSN Black Sea	International	Yes	AUTh
	Association	UN SDSN Europe	International	Yes	AUTh
Maritime	Research	Hellenic Marine Environment Protection Association (HELMEPA)	National	Yes	AUTh
Maritime	NGO	Thalassa Foundation	National	Yes	AUTh
Research	Research	Fagaras Research Institute (Romania)	National	Yes	AUTh

Case Study#7: Southern Denmark/ Wadden Sea Region

Stakeholders				
Sector	**Category**	**Name of Stakeholder or Organisation**	**Scale**	**Existing Contact**
Planning	Government/Policy Makers	Esbjerg municipality: Departments: • Urban development & Economy, • Operation & Plant and • Environment & Construction Authority.	Local	Yes (partner)
Planning	Government/Policy Makers	Fanø municipality: Departments: • Planning & Construction Authority	Local	Yes (partner)
Planning	Government/Policy Makers	Varde municipality: : Departments • Works & Environment • Planning & GIS.	Local	Yes (partner)
Planning	Government/Policy Makers	Tønder municipality: Departments: • Nature & Streams • Planning & Construction Authority	Local	Yes (partner)
Coastal protection	Government/Policy Makers	Danish Coastal Authority (DCA)	National	Yes (partner)
Multiple	Forum	RUV (see above)	Local/regional	Yes
Water	Public Utility Company	Local water utility companies in Esbjerg, Fanø, Varde and Tønder	Local	Yes
Tourism	Business	Visit Denmark, local tourism organisations	National/local	Yes
Tourism	Academic	Museum Sønderjylland	Local	Yes
Tourism/Nature	Government	Nationalpark Vadehavet	Local/regional	Yes
Environment	NGO/Association	Danmarks Naturfredningsforening, DN Fanø …	National/Local	Yes
Environment	NGO/Association	Danmarks Sportsfiskerforbund	National/Local	Yes

Energy	Industry	E.g. Siemens, Ørsted …	National	Yes
Private	Business/Industry	Business Esbjerg, and similar for Fanø, Varde and Tønder.	Local	Yes
Environment	Government/Policy Makers	Miljøministeriet (Ministry of Environment of Denmark)	National	Yes
Environment	Government/Policy Makers	Naturstyrelsen (The Danish Nature Agency)	National	Yes
Agriculture	Business/Association	Landbrug & Fødevarer	National	Yes
Research	Academic	SDU, KU, AU, DTU, etc.	Local	Yes
Consulting/Engineering	Business	NIRAS, Rambøll, SEGES, etc	Local	Yes
Citizens	Local Citizen	Lokalråd	Local	Yes
Built environments	Local Citizen	Grundejerforeninger	Local	Yes
Private sector	Business/Industry	Enterprises	Local	Yes
Planning	Government/Policy Makers	Upstream municipalities	Local	Yes
Investments	Financial/Insurance	Banker, realkreditinstitutter, pensionskasser	Local	No
Insurance	Financial/Insurance	Forsikringsselskaber / Forsikring og Pension	National	Yes

Case Study#8: Torbay and Devon County

Sector	Category	Name of Stakeholder or Organisation	Scale	Existing Contact
Water and Coastal	Local Government	Torbay Council Lead Local Flood Authority	Local	Yes
Local Planning	Local Government	Torbay Council Emergency Planning	Local	Yes
Highway sector	Local Government	Torbay Council Highway Authority	Local	Yes
Local Planning	Local Government	Torbay Council Strategic Planning	Local	Yes
Maritime	Local Government	Torbay Harbour Authority	Local	Yes
Climate Change	Local Government	Torbay Council Climate Emergency Officer	Local	Yes
Water sector	Public Utility Company	South West Water	Regional	Yes
Energy sector	Public Utility Company	Western Power	Regional	Yes
Energy sector	Public Utility Company	Wales & West (Gas)	Regional	Yes
Communications	Public Utility Company	British Telecom	National	Yes
Travel	Railway Infrastructure	Network Rail	National	Yes
Travel	Buses	Stagecoach	Regional	No
Communications	Public Utility Company	Virgin Media	National	Yes
Environment	Government Body	Environment Agency	National	Yes
Maritime		Plymouth Coastal Observatory	Regional	Yes
Local Authority	Local Government	Teignbridge Council	Local	Yes
County Council	Local Government	Devon County Council Lead Local Flood Authority	Regional	Yes

Highways	Local Government	Devon County Council Highway Authority	Regional	Yes
Highways	Road infrastructure	Highways England	National	Yes
Water and coastal	Government Body	South West Reginal Flood and Coastal Committee	Regional	Yes
Coastal	Government Body	South West Coastal Group	Regional	Yes
Health sector	National Health Service	NHS	National	Yes
Land management	Local association	Torbay Coast & Countryside Trust	Local	Yes
Tourism	Local tourism	English Riviera Tourist Board	Local	No
business	Chamber of Commerce	Torquay Chamber of Commerce	Local	No
		Paignton Chamber of Commerce	Local	No
		Brixham Chamber of Commerce	Local	No
		Devon & Plymouth Chamber of Commerce	Regional	No
Community	Community group	Torbay Climate Action group	Local	No
Community	Community group	Ocean Rebellion South Devon and Torbay	Local	No
Community	Community group	Cool Climate	Local	No
Community	Community group	Torbay Cleaner Coasts Initiative	Local	No
Community	Community group	Plastic Free Torbay	Local	No
Community	Community group	Riviera Station	Local	No
Community	Community group	Torbay Community Development Trust	Local	No

Community	Community group	Torbay Community Builders	Local	No
Community	Community group	Ageing Well Torbay	Local	No
Community	Community group	YMCA South Devon	Local	No
Community	Community group	Devon Climate Assembly	Local	No
Insurance	Insurance industry for flood insurance	To be confirmed	National	No

Case Study#9: Sardinia

Sector	*Category*	*Name*	*Scale*	*Existing contact*
AGR	Research	CIMMYT - International Maize and Wheat Genetic Improvement Center	International	Yes
AGR	Policy Makers	European Commission - Agriculture and Rural Development	International	Yes
AGR	Policy Makers	FAO - Food and Agriculture Organization of the United Nations	International	Yes
ENE	Industry	Fluorsid	International	Yes
AGR	Research	ICARDA - International Center for Agricultural Research in the Dry Areas	International	Yes
ENV	Government	Chamber of Deputies	National	Yes
Agri-Food	Business	F.lli Cellino Group	National	Yes
AGR	Government	Ministry of Agriculture - MIPAAF	National	No
ENV	Government	Ministry of Environment - MITE	National	No
ENV	Research	CMCC - Euro-Mediterranean Center on Climate Changes	National	Yes
AGR-ENV	Research	CNR - Istituto per la Bioeconomia	National	Yes
AGR	Association	Coldiretti	National	Yes
AGR	Association	Confagricoltura - Confederazione Generale dell'Agricoltura Italiana	National	Yes
AGR	Association	Confederazione Italiana Agricoltori - CIA	National	Yes
AGR	Association	Confederazione Produttori Agricoli - Copagri	National	Yes
AGR	Research	CREA - Agriculture and Environment	National	Yes
AGR	Research	CREA - Cereals and Industrial crops	National	Yes
AGR	Research	CREA - Plant protection and Certification	National	Yes
ENV	Research	ENEA - Environment and Climate Division	National	Yes
ENV	Research	ENEA - Lab for AgriFood Sustainability, Quality and Safety	National	Yes
Media	Business	Identità Golose	National	Yes
ENV	Research	Istituto Enrst Mach	National	Yes
AGR	RES-BUS	SIS - Società Italiana Sementi	National	Yes
WAT	Business	Xylem Italia	National	No
WAT	Policy Makers	ABBANOA	Regional	Yes

ENV	Policy Makers	ARPAS	Regional	No
AGR	Government	Assessorato Agricoltura - Servizio sostenibilità e qualità delle produzioni agricole e alimentari	Regional	Yes
AGR	Government	Assessorato Agricoltura - Servizio sviluppo delle filiere alimentari	Regional	Yes
AGR	Government	Assessorato Agricoltura - Servizio territorio rurale e agro-ambiente	Regional	Yes
ENV	Government	Assessorato Ambiente - Servizio Sostenibilità Ambientale	Regional	Yes
Financial	Government	Assessorato alla programmazione economica	Regional	Yes
Economy	Business	Banco di Sardegna	Regional	Yes
Agri-Food	Association	Comitato Promotore Coccoi DOP	Regional	Yes
AGR	Association	Cooperativa S'Atra Sardigna	Regional	Yes
Handicraft	Association	CNA Sardegna - Confederazione Nazionale Artigianato e piccola e media impresa	Regional	Yes
AGR	Industry	Concimi Biologici S.R.L.	Regional	Yes
WAT	Policy Makers	Direzione Generale Agenzia regionale del distretto idrografico della Sardegna	Regional	Yes
WAT	Policy Makers	ENAS - Ente Acque della Sardegna	Regional	Yes
CON-ENE-WAT	Association	Federazione degli Ordini degli Ingegneri della Sardegna	Regional	Yes
AGR	Association	Federazione Regionale degli Ordini dei Dottori Agronomi e Forestali	Regional	Yes
AGR	Policy Makers	LAORE - Servizio Sviluppo Rurale	Regional	Yes
AGR	Policy Makers	LAORE - Servizio Sviluppo e Sostenibilità delle Attività Agricole	Regional	Yes
ENV	Government	Protezione Civile Sardegna	Regional	Yes
AGR	Policy Makers	Regione Autonoma della Sardegna - Commissione Agricoltura	Regional	Yes
ENV	Policy Makers	Regione Autonoma della Sardegna - Commissione Ambiente	Regional	Yes
ECO	Policy Makers	Regione Autonoma della Sardegna - Commissione Bilancio	Regional	Yes
Food	Association	Unione Cuochi Sardegna	Regional	Yes
Technology	Business	Abinsula	Local	Yes
AEMTW	Administration	Area Metropolitana di Cagliari - Metropolitan Area of Cagliari	Local	Yes
Agri-Food	Association	Associazione Panificatori Provincia di Cagliari	Local	Yes
Agri-Food	Association	Associazione Panificatori Provincia di Nuoro	Local	Yes
AGR-CUL-TOU	Association	BioDistretto Sud Sardegna	Local	Yes

ENE	Industry	CACIP - Consorzio Industriale Provinciale di Cagliari	Local	Yes
AGR-TOU	Business	Camera di Commercio di Cagliari-Oristano	Local	Yes
WAT	Policy Makers	CBO - Consorzio di Bonifica dell'Oristanese	Local	Yes
WAT	Policy Makers	CBSM - Consorzio di Bonifica della Sardegna Meridionale	Local	Yes
AGR	Business	Cooperativa Madonna d'Itria	Local	Yes
AGR-TOU	Business	CSI - Centro Servizi per le Imprese Azienda Speciale CC Cagliari	Local	Yes
ENV	Research	Department of Chemistry and Geology - University of Cagliari	Local	Yes
Social	Association	Fondazione Carlo Enrico Giulini	Local	Yes
Agri-Food	Business	Lavoro Insieme S.r.l. Impresa Sociale	Local	Yes
Agri-Food	Business	Molino Secci	Local	Yes
Agri-Food	Business	Mulino Su Mori	Local	Yes
WAT	Business	Oppo S.r.l.	Local	No
Technology	Business	Primo Principio	Local	Yes
Social	Association	Slow Food Cagliari	Local	Yes
AGR	Business	S. Nicolò Gerrei - Società Cooperativa Agricola	Local	Yes
AGR-TOU-WAT	Government	Union of Municipalities - Arcipelago del Sulcis	Local	Yes
AGR-TOU-WAT	Government	Union of Municipalities - Gerrei	Local	Yes
AGR-TOU-WAT	Government	Union of Municipalities - Marmilla	Local	Yes
AGR-TOU-WAT	Government	Union of Municipalities - Parteolla e Basso Campidano	Local	Yes
AGR-TOU-WAT	Government	Union of Municipalities - Trexenta	Local	Yes
Legend				
AEMTW - Agriculture-Energy-Maritime-Tourism-Water				
AGR - Agriculture				
BUS - Business				
CON - Construction				
CUL - Culture				

ENE - Energy				
ENV - Environment				
RES - Research				
TOU - Tourism				
WAT - Water				

Systems Innovation Approach (SIA) addresses the growing complexity, interdependencies and interconnectedness of modern societies and economies, focusing on the functions of the cross-sectoral system as a whole and on the variety of actors. The Climate Innovation Window (CIW) is the EU reference innovations marketplace for climate adaptation technologies. ARSINOE shapes the pathways to resilience by bringing together SIA and CIW, to build an ecosystem for climate change adaptation solutions. Within the ARSINOE ecosystem, pathways to solutions are co-created and co-designed by stakeholders, who can then select either existing CIW technologies, or technologies by new providers (or a combination) to form an innovation package. This package may be designed for implementation to a specific region, but its building blocks are transferable and re-usable; they can be re-adapted and updated. In this way, the user (region) gets an innovation package consisting of validated technologies (expanding the market for CIW); new technologies implemented in the specific local innovation package get the opportunity to be validated and become CIW members, while the society (citizens, stakeholders) benefits as a whole. ARSINOE applies a three-tier, approach: (a) using SIA it integrates multi-faceted technological, digital, business, governance and environmental aspects with social innovation for the development of adaptation pathways to climate change for specific regions; (b) it links with CIW to form innovation packages by matching innovators with end-users/regions; (c) it fosters the ecosystem sustainability and growth with cross-fertilization and replication across regions and scales, at European level and beyond, using specific business models, exploitation and outreach actions. The ARSINOE approach is show-cased in nine widely varied demonstrators, as a proof-of-concept with regards to its applicability, replicability, potential and efficacy.

ARSINOE

CLIMATE RESILIENT-REGIONS THROUGH SYSTEMIC SOLUTIONS AND INNOVATIONS

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