



# ARSINOE

## THE ARSINOE LIVING LABS

---

Outcomes  
and lessons learnt



# ARSINOE & the System Innovation Approach (SIA)

The System Innovation Approach (SIA) is an analytic approach toward systemic change based on interconnected sets of innovations, where each one influences the other. Innovations apply both to parts of the system, and to connections themselves. The emphasis is on the functions of the cross-sectoral system “as a whole” and on the variety of actors, instead of just focusing on specific functions or individual/sectoral benefits.

The concept of a system of innovation brings together in a single framework the elements of good practice required to foster innovation in the context of climate adaptation.

SIA is applied in ARSINOE for solving complex, multi-parameter problems, within the framework of Living Labs, which are implemented for each Case Study.



# What are Living Labs ?

Living Labs are a participatory research tool often used in planning, product design, and innovation which brings together a collective of key stakeholders to explore a focal issue. Living Labs act as open innovation spaces which foster co-creation with participants, with a result that is expected to better address stakeholder needs than top-down solutions. Rather than a physical space, a Living Lab consists of a set of tools, a group of participants, and a temporal structure.

Within ARSINOE, the Living Labs take the general form of three workshops, each one meant to address a specific goal:



**Workshop 1: Mapping.** Drawing a mental map of the system, including stakeholders, issues and challenges. A first approach to problem definition. This will serve as the basis for envisioning a future narrative for the region.

**Workshop 2: Envisioning.** Refining the problem statement from Workshop 1. Outlining the desired future state/goal. Defining a timeframe for transformation. The future vision and timeframe are the basis for backcasting the necessary steps and milestones to achieve the desired goal.



**Workshop 3: Backcasting.** Identification of pathways for resilience, adaptation and sustainability, working backward from the Future Vision produced in Workshop 2.

# Living Labs in ARSINOE

Three rounds of workshops focused on specific themes were organised in each location of the nine ARSINOE case studies:



## Case study #1 - Athens, Greece

Mitigating urban heat through nature-based solutions



## Case study #2 - Mediterranean Ports

Impact of climate change on ports infrastructures and operations



## Case study #3 - Main River

Water-Energy-Food nexus



## Case study #4 - Ohrid/Prespa lakes

Impact of water scarcity on water levels



## Case study #5 - Canary Islands

Impact of temperature raise on the Water-Food nexus



## Case study #6 - Black Sea

Integrated water resources management from source to sea



## Case study #7 - Southern Denmark

Emergency preparedness plan in flooding extremes



## Case study #8 - Torbay & Devon County

Cascading effects on infrastructures during flooding



## Case study #9 - Sardinia, Italy

Transforming the food production system based on durum wheat

# Three rounds of workshops

## Workshop 1: Mapping



**243** participants

## Workshop 2: Envisioning

**201** participants



## Workshop 3: Backcasting



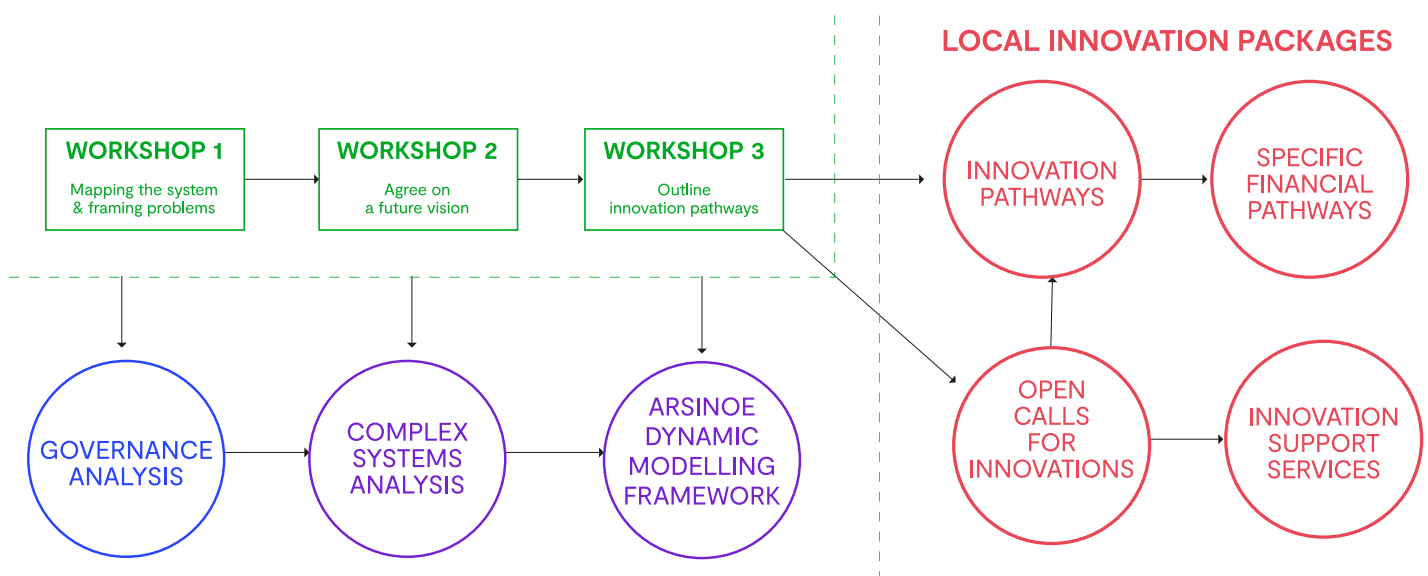
**228** participants



# Results of the Living Labs

The three Living Lab workshops, allowed the ARSINOE team to create one system map, future vision, and pathway for resilience per location (so 15 total). Furthermore, 3 transboundary system maps, future visions, and pathways for resilience for the international Case Studies (CS2, CS4 and CS6) were created.

As the ARSINOE project continues over the next two years, outcomes from the three Living Lab workshops will help frame the next research tasks, such as modeling, governance analysis, and innovation packages, all of which will have a direct impact on stakeholders and communities and may become examples of best practices for other regions, in Europe and beyond.



# Lessons learnt

Sustainability challenges have traditionally been analyzed as technical problems through problem-solving. However, such approaches are unable to respond to the challenges ahead. While traditional problem-solving focuses on isolating aspects of problems to solve them, complexity results from the interconnectedness of interactions between different subsystems. Rather than concentrating on partial solutions at the risk of severing key relations, the challenge is to encompass the whole, its components, and processes.

During the three-workshops program, participants engaged in higher-order learning processes that took them from symptoms and effects to triggers and causes, broadening initial focus to incorporate values, expectations, and desires, and revealing that the main blockers and enablers of sustainability processes may not be the ones that first come to mind.

The mapping exercise allowed for precise identification of the system's main drivers, harnessing situated knowledge from the group as participants acknowledged the interdependency of all factors. The envisioning session provided the space to imagine and agree on desirable future visions, acknowledging and aligning shared values as the process unfolded. The back casting process leveraged outcomes from previous sessions to co-design a roadmap for climate transition and resilience tailored to specific local conditions and assets.



Beyond ARSINOE's lifespan, spontaneous initiatives for collaboration arising from participants themselves act as indicators of transformation processes already underway. Results from the Living Labs not only confirm the value of SIA to support climate transition processes but also reveal their potential as tools to reframe research questions and methodologies, drafting future roles for researchers that depart from traditional views. Within this new, process-oriented framework, researchers are no longer the sole providers of knowledge; instead, they become responsible for creating, taking part in, and maintaining a space for collaboration and joint knowledge production – a change of paradigm that is deeply transforming the way science is produced and assessed.

More about the project on our website: <https://arsinoe-project.eu/>

And follow us on our social media accounts:



@ARSINOE\_EU



@ARSINOE\_EU



@arsinoe eu



@ARSINOE.EU



@arsinoe\_eu

### The ARSINOE consortium

