



Second Open Tender for Innovations

Case Study #2: Mediterranean Ports. Piraeus Port Authority

Supplementary information

Date: 21.11.2023



This project has received funding from the European Union's Horizon 2020 innovation action programme under grant agreement 101037424.

The Case Study “Mediterranean Port” – Piraeus Port Authority

This transboundary case study consists of the ports of Piraeus (Greece), Limassol (Cyprus), and Valencia (Spain).

The port of Piraeus is the largest port in Greece, with a coastline of more than 24 Km and a total area of more than 5M square metres. The geographical location of the port of Piraeus makes it a vital transport, commercial and logistic hub for tourism and communication, connecting the Greek islands with the mainland. It is also an international centre of maritime tourism and transport of goods. The location of the port favours its function both as a commercial and tourist portal of the country and as a transit trade hub for the Balkans and Black Sea countries. The Port of Piraeus is located at the intersection of the sea routes connecting the Mediterranean with northern Europe and thanks to its geographical location allows large ships to access the Far East trade routes without significant deviation.

Piraeus Port Authority operates in the Greek region, regardless of the fact that its customers also include international Companies. PPA S.A. offers all the types of port services such as water supply, marine fuel, solid and liquid sewage treatment, oil residue treatment, electricity, fiber optics and internet, food supplies, repairs, environmental services and is fully connected in all its activities with modern tech systems. The Management of PPA S.A. examines the aforementioned activities at the level of results and makes business decisions based on the internal financial information system it has established. Based on the above and in accordance with the application of the provisions of IFRS 8 (International Financial Reporting Standard), PPA S.A. has identified the following areas:

- ✓ Container Terminal
- ✓ Car Terminals
- ✓ Coastal Shipping
- ✓ Cruise Activity
- ✓ Ship Repair Activity
- ✓ Other sectors (water supply, property management, goods management).

The other sectors include activities that represent less than 10% of the total revenue and profit of all sectors and are therefore not disclosed as separate operating units. In addition, the Company does not have any other commercial or industrial activities other than the provision of services provided exclusively to the Port area and has no significant revenues or assets from external customers (based on the geographical area it operates in).

ARSINOE aims to enhance the resilience of seaports and their surrounding communities in the face of climate change. The project focuses on conducting vulnerability assessments for seaports, identifying priority adaptation actions, and designing customized adaptation pathways. The goal is to translate these findings into transformative interventions that bolster seaport resilience. The case study emphasizes the incorporation of existing mechanisms and tools developed by port authorities, active stakeholder engagement, and the use of financial instruments throughout the process.

The Living Lab “Mediterranean Ports

The Mediterranean Ports CS has adopted ARSINOE Systems Innovation Approach, through a set of three Living Labs Workshops (LLsW) that run across the case studies to enable the development of innovation pathways. More precisely, in the current CS, LLs aimed to assist seaports and adjacent communities to adapt to a changing climate by improving their resilience. The entire process involved a series of LLs workshops that were designed in a consecutive manner bringing together key stakeholders to:

1. map, scope and define challenges in the maritime sector and mainly in ports in terms of climate vulnerabilities,
2. state the problem and create a common vision for the future and finally
3. use backcasting to develop innovation pathways for resilience.

During the first part, each port actively involved its stakeholders in identifying the most susceptible elements of port infrastructure and operations. The discussions were focused on the impact of several climatic variables (e.g., heatwaves) on port operations and infrastructures, and relevant socioeconomic factors. The connections and relationships were analysed and resulted in drafting a single mental map for all three Mediterranean ports, summarising the most eminent hazards and associated susceptibility. During the second stage the results were validated by the stakeholders create a future shared vision for the Mediterranean ports by 2050 to increase resilience against the most critical climate change impacts. Finally, the third living lab enabled to co-design or co-identify tailored adaptation pathways to support seaports transitioning to climate vulnerability.

The Problem Statement by Stakeholders

The identified problem statements by stakeholders as validated by all stakeholders is the following: “Climate Change (Heatwaves, Wind/Waves, Extreme Events) Negative Impacts to the Port Operations, Port Infrastructure and nearby community (Stop operations, increase of accidents, damage in goods, passenger’s health, client complaints, Energy Efficiency issues, Air/Water Pollution).” The need to address these issues is crucial for the port's resilience and effective adaptation to the changing climate conditions.

The Vision of a climate-resilient Future

Joint MedPorts Vision for 2050

By 2050, Mediterranean Ports will be leaders in sustainable and resilient port operations and infrastructure, setting an example for the Mediterranean region and beyond. These ports will prioritize attracting investments and create growth, invest in smart trading solutions, end to end logistics, efficient port management, and sustainable technologies to maximize resilience while remaining competitive and profitable. Mediterranean ports will be Smart, Green, Blue, climate neutral and climate-resilient, with increased efficiency. They will be hubs for business ecosystems, innovation, culture, and education, serving as models for the development of

green ports and fostering a culture of upskilling and reskilling to adapt to changing technological and environmental challenges. These ports will prioritize risk management strategies that enable them to adapt to the effects of climate change and remain operational during adverse weather conditions. They will take the appropriate measures for securing safety and improving the port-city interaction and ensuring the security of the supply chain and the resilience of the entire value chain, including nearby municipalities and communities. By collaborating with stakeholders and partners, Mediterranean ports will achieve operational excellence, serving as examples of sustainability and resilience to other ports around the world.

The Key Challenge for the second Tender for Innovations- Piraeus Port Authority

Air pollution due to Climate Change (Heatwaves, Wind/Waves, Extreme Events) and increased port operations (ships, cruises, ferries, cargo etc.) can have negative impacts to the personnel, passengers, and nearby community. The GHG concentrations affect the air quality and cause health issues to the personnel, passengers and the nearby community. PPA would like to apply an innovative solution that will monitor and forecast increased GHGs emissions that could be harmful for the personnel, the passengers and the citizens that live close to the port. The technical – digital solution will monitor and predict high GHGs emissions based on input - data such as climatic – weather parameters, ship-cruise operations, number of vehicles etc. and will propose adaptation measures to improve air quality and prevent health issues.

Case Study-specific requirements to comply with procurement and contracting procedures

The contracting party has set the following requirements, which are additional to those listed in the general requirements section of the tender:

- The applicant must provide proof of having a minimum annual turnover for the last three years of 300,000€
- The date of registration of the applicant entity should be at least 3 years before the launch date of the second ARSINOE Open Tender for Innovations