Second Open Tender for Innovations

Case Study #2: Mediterranean Ports. Port of Limassol

Supplementary information

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The Case Study "Mediterranean Ports"

This transboundary case study consists of the ports of Piraeus (Greece), Limassol (Cyprus), and Valencia (Spain). The seaport of Piraeus is the second maritime cluster globally and could become a resilient maritime hub and a catalyst for rapid changes. The seaport of Limassol is the main seaport of Cyprus and handles 90% of the export and import volume of the island and a lively Cyprus passenger traffic, including cruise ships and ferry connections with Greece, Israel, Egypt, and Lebanon. 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.

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, LLsW 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- Limassol Port

In response to the significant threats posed by climate change to port activities, infrastructure, and the safety of surrounding communities—such as disruptions in port operations, increased accidents, damage to goods, compromised health, client complaints, energy inefficiencies, and air/water pollution—we are inviting innovative proposals for an Early Warning System. It should involve the implementation of advanced sensors capable of real-time data collection for climate-related parameters, including temperature, humidity, wind intensity, fog and air quality and effectively monitor and analyze climate-related events. The innovation must not only meet the current specified parameters but also demonstrate adaptability for unforeseen requirements in the future. The innovation must utilize advanced analytics and machine learning to process collected data and predict climate-related events, providing timely alerts tailored to the severity of the situation, seamlessly integrate with existing port management systems, ensuring coordinated responses during extreme weather events. To mitigate negative impacts, the proposed innovation needs to develop protocols for port operations, regular maintenance of sensors and early warning systems, enhanced preparedness measures, and compliance with ISO standards for reporting and monitoring. Additionally, it must incorporate AI-assisted prediction, with sensors strategically placed in at

least 10 locations and have a mobile interface operational in both Android and Ios. Ensuring compliance with CE marking and establishing adjustable acceptable limits for warnings are essential. Additionally, to enable seamless integration of new sensors. We value collaborative partnerships and encourage proposals demonstrating a proactive approach to addressing future challenges, ensuring the long-term resilience of our ports and the well-being of all stakeholders involved.

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

In order to ensure a stringent selection process, we have established specific financial and maturity cut-off criteria for organizations applying to this tender. Prospective applicants must meet the following requirements to be considered eligible:

- Applicants are required to demonstrate a robust financial standing. They should provide proof of an annual turnover of at least 100,000 EUR for the last year, showcasing their financial continuity and capacity to handle substantial projects.
- Applicant organizations must be established legal entities with a proven track record. The date of registration should be at least three years before the launch date of this open tender, highlighting their experience and commitment to their services.
- Applicants must be awarded an ISO certification(9001), indicating compliance with the European Union's quality and safety standards. This certification underscores the organization's commitment to delivering products and services of the highest quality.
- Applicants are required to have an existing service and maintenance facility operating within the European Union. This presence ensures that they are well-equipped to handle the installation, operation, and maintenance aspects of the Early Warning System effectively.
- Successful applicants must be willing to commit to handling the installation and maintenance of the Early Warning System for a minimum period of two years. This commitment is essential to ensuring the continued functionality and reliability of the system.
- Eligible organizations, if selected, are required to register through e-procurement platforms. Additionally, applicants must complete the registration process on the official Cyprus government e-procurement portal: https://www.eprocurement.gov.cy/epps/home.do. Proper registration is mandatory for participation in this tender and the procedure is under the Coordination of Procedures on the Public Procurement and on Related Matters Law of 2016 (Law 73(I)/2016), as amended in each case, and the General Regulations of 2007 (KDP 242/2012) on the Coordination of procedures for the Award of Public Works Contracts, Public Supply Contracts and Public Service Contracts including any amendments thereto.