Second Open Tender for Innovations

Case Study #2: Mediterranean Ports. Port of Valencia

Supplementary information

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The Case Study "Mediterranean Ports. Port of Valencia"

This transboundary CS, consists of the ports of Piraeus (Greece), Limassol (Cyprus), and Valencia (Spain). The Port 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.

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 ultimate 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. Port of Valencia"

The living lab was organised to introduce ARSINOE to the port community of Valencia. However, the mental maps are based on the face-to-face interviews conducted with main tenants, nautical services and authorities of the Valencia Port Community.

The port community demonstrates a clear understanding of the distinction between mitigation and adaptation, with many stakeholders developing their adaptation strategies. However, some parties resist accepting climate change. Various adaptation measures are impacted by the Spanish management system, where authorizations are on a temporary basis. Spanish law also needs to be adapted to the reality imposed by climate change. Before making these adjustments, it is necessary to create a realistic map of vulnerabilities and monitor their evolution.

Stakeholders identified three innovations or solutions, with a particular emphasis on monitoring key climate variables. This entails tracking climate variables in specific terminals or port areas, monitoring the evolution of vulnerabilities, and estimating additional costs resulting from climate change.

The other identified innovations were aimed at finding solutions to contain the consumption of refrigerated containers, considering the expected temperature increase in the coming years, or adapting containers carrying hazardous goods to be more secure against potential events caused by climate change.

The Problem Statement by Stakeholders

The identified problem statements by stakeholders in the Valencia port community, related to climate change adaptation, stem from issues such as the impact of wind and heatwaves on port operations, and the increase in port closures to navigation. These challenges manifest in the form of halted operations, a rise in accidents, damage to goods, and an uptick in client

complaints. 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

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

Key challenge for the second tender for innovations lies in delivering tools to the port authority that can predict the impact of climate change on both operations and port infrastructures. These tools aim to support decision-making processes, facilitating an effective adaptation of the port of Valencia to the long-term consequences of climate change.

That tool must enhance safety, maintain operability, and prevent financial losses by predicting or minimizing climate events. These include port closures due to weather conditions, fog, and waterplanes diverting water for wildfire response. It aims to mitigate port congestion following closures, interruptions in port operations due to wind, an uptick in traffic accidents, increased damage to goods and associated claims, as well as the impact of climate change on specific traffics. The tool also addresses climate change effects on port/terminal roads and access, temperature and sea water temperature impact on the cooling process and must help in the decision-making processes for updating port equipment.