

SUPAIR
SUSTAINABLE PORTS
IN THE ADRIATIC-IONIAN REGION

Report on Mutual Learning Workshop

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WPT2

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Summary

The report describes the implementation of the SUPAIR Mutual Learning Workshop held in Trieste (Italy) on November 13th, 2019. The Workshop, attended by about 40 people, aimed at presenting to the public and relevant stakeholders the activities carried out and the results obtained by the Interreg ADRION project SUPAIR.

SMART IDEAS FOR SUSTAINABLE & LOW-CARBON PORTS

WEDNESDAY, NOVEMBER 13, 2019 - MARITIME STATION, TRIESTE - ITALY



Figure 1 – Workshop's infographic promoted through various communication means

Objectives of the Workshop

How does a sustainable port look like? This is the question the SUPAIR project partners tried to answer during the Mutual Learning Workshop entitled “*Smart ideas for sustainable and low-carbon ports*” which was organized on November 13th, 2019 at the Maritime Station of Trieste (Italy).

The event had the overall goal of presenting the almost-finalized **achievements of the SUPAIR project partners’ and sharing results and lessons learnt among participants**. In particular, the Workshop aimed at:

- describing the SUPAIR methodology and approach;
- presenting the Action Plans for a Sustainable Low-Carbon Port developed by the 7 port authorities involved in the project, thus to get valuable insights into the Adriatic-Ionian ports performances in terms of sustainability and learn more about the strategies they are adopting to reduce their impact on the environment;
- announcing the creation of the Transnational Cooperative Network of Adriatic-Ionian Sustainable and Low-Carbon Ports;
- presenting the Transnational Strategy for low-carbon transport systems in the Adriatic – Ionian basin setting long-term goals that the members of the network will work on achieving;
- sharing achievements and lessons learnt and exchange experiences with other Adriatic-Ionian ports invited to attend the event.

Organization of the Workshop

Coordinated by Area Science Park, the Workshop was organized with the help of the partners CERTH and VIU, who assisted the task leader in: setting up the agenda of the event and promoting the participation of a number of key note speakers and guests from other port authorities in the Adriatic-Ionian region to foster exchange of experiences and strategies in the field of port sustainability, thus ensuring a remarkable success of the workshop.

Furthermore, all project partners have been involved in the promotion of the workshop exploiting their contacts and communication channels and networks.

The location

The organization of the Workshop started during summer 2019.

As suggested by the Port network Authority of the Eastern Adriatic Sea (TPA - partner of the SUPAIR project), the project coordinator and task leader, AREA Science Park, contacted the ASITA Association¹ to explore the possibility to **organize the Workshop together with the XXIII edition of the ASITA Conference**, a major GIS EXPO organized every year by such Association, to be held in Trieste (Italy) on November 12-14, 2019. The ASITA Conference is a relevant meeting for researchers, teachers, professionals, public and private users, organizations and companies operating in the sectors of surveying, management and representation of spatial and environmental data. The reason to include the SUPAIR Workshop in the program of the Conference was indeed the opportunity to showcase and disseminate the project results to a wider spectrum of stakeholders.



Fig 2 – ASITA logo

¹ Italian Association of Science on Geographic and Environmental Information Systems

Having received the green-light from the ASITA Association, it was decided to organize the SUPAIR Workshop as a special parallel session during the [#ASITA2019 Conference](#) on November 13th, 2019 from 2.30pm to 6.30pm at the premises of the Maritime Station in Trieste.



Figure 3 – Trieste Maritime Station

The program of the event

Considering the time available for the Workshop (half a day), the SUPAIR partnership agreed on having the agenda of the event scheduled in the following way:

- Introduction by the project coordinator
- 2 invited keynote speakers
- Presentation of the Action plans produced by each port
- Announcement of the creation of the Transnational Cooperative Network of Adriatic-Ionian Sustainable and Low-Carbon Ports and presentation of the Transnational Strategy for low-carbon transport systems in the Adriatic-Ionian region
- Interactive session with other port authorities of the Adriatic-Ionian Region invited to attend the Workshop

The partner CERTH oversaw the **keynote speakers' invitation process** and, based on the best practice ports already selected at the time of the SUPAIR study visits, checked the availability of the following ports: Port of Rotterdam, Gothenburg, Barcelona and Bremen. Unfortunately, none of them were available to attend the Workshop. Therefore, with the assistance of the other partners TPA and VIU, the following speakers were invited and accepted the invitation:

- Mr. Guido Vettorel from the Central Adriatic Ports Authority, who could not attend in person, but through videoconference;
- Mr. Domenico Guidotti and Cap. Centonza Primiano from Guidotti Ships, the anti-pollution services operator in the Port of Termoli, Civitanova Marche and Porto San Giorgio.

The figure below presents the **final agenda** of the Workshop:

Programme

TIME	TALK TITLE	SPEAKER
14:00	Participants registration	
14:30	The SUPAIR project	Fabio Tomasi – Area Science Park
14:45	Sustainability: a key element for port development	Guido Vettorel – Port of Ancona
	Port anti-pollution base <i>Prevention and management of natural disasters in the Adriatic Sea</i>	Domenico Guidotti and Centonza Primiano – Guidotti Ships
15:30	Strategies for environmental protection <i>How to improve energy efficiency in the Port of Venice</i>	Erika Rizzo - North Adriatic Sea Port Authority
15:45	Our Journey on the Waves of Sustainability <i>SUPAIR project: moving forward to drive and align the Port of Trieste' efforts with international and European legislative frameworks</i>	Elisabetta Scala - Port Network Authority of the Eastern Adriatic Sea
16:00	Development of Sustainability in the Port of Koper <i>Achievements and plans</i>	Franka Cepak - Luka Koper
16:15	Green port transformation <i>Improvement of port's efficiency and environmental performance</i>	Rade Stanisic - Port of Bar Holding Company
16:30	Designing a Sustainable Eco- Friendly Port <i>SUPAIR project: an approaching guide to regenerate the port-city link through a sustainable action plan</i>	Serena Kovači - Durres Port Authority
16:45	Strengthening the environmental and energy management of a port under development <i>What SUPAIR-ADRION project offered to the Port of Thessaloniki</i>	Alkiviadis Tromaras, on behalf of Eva Vafaki - Thessaloniki Port Authority SA
17:00	Transforming the Port of Piraeus into a next generation port with advanced environmental measures	Chryssanthi Kontogiorgi - Piraeus Port Authority SA
17:30	The Transnational Cooperation Network of Adriatic-Ionian sustainable and low-carbon Ports	Lefteris Sdoukopoulos - Centre for Research and Technology Hellas
18:10	Final debate	
18:30	End of the Workshop	Marco Mazzarino – IUAV

Networking cocktail together with the ASITA Conference

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Figure 4 – Workshop's agenda

Invited port authorities

In order to foster the durability and transferability of the project methodology and outputs as well as enriching the event and learning from other experiences, the project foresaw to invite at the Workshop other 8 port authorities of the Adriatic-Ionian region (not already involved in the SUPAIR project) interested in replicating the SUPAIR approach and in being part of the Transnational Cooperative Network of Adriatic-Ionian Sustainable and Low-Carbon Ports.

The partner in charge of organizing the Workshop, AREA, also bared the reimbursement of the port representatives' travel expenses.

To decide which port authorities to invite to the Workshop, the SUPAIR partners were asked to check the availability of their already existing contacts and spread the news regarding the setting up of the Network. How to attend the Workshop was posted on the project webpage in order to offer the opportunity of attending to all the port of the Adriatic-Ionian area.

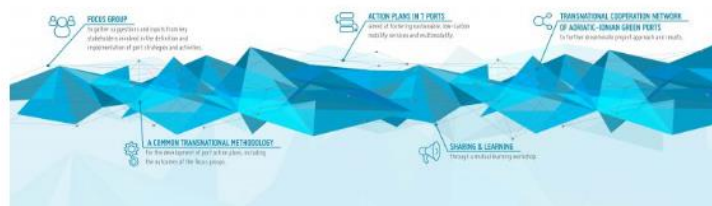
Join the SUPAIR Network of Adriatic-Ionian Sustainable and Low-Carbon Ports

October 1st, 2019 | News

The **Transnational Cooperative Network of Adriatic-Ionian Sustainable and Low-Carbon Ports** is about to be officially founded by the SUPAIR project. Initially composed by 3 business and research organizations and 7 ports of the Adriatic-Ionian region, the Network **aims at promoting sustainable low carbon port practices among its members**, strengthening the cooperation in the field of sustainable port development, environmental and energy management and low carbon solutions.

Specifically, the focus of the Network is the promotion of exchange of expertise on the following topics:

- implementing low-carbon port action plans during and beyond the SUPAIR project's duration;
- environmentally friendly transport systems solutions related to port activities;
- improving transnational relationships between the signatory ports and stakeholders of the Adriatic-Ionian Region;
- increasing sustainability integration in the community and benefit socio-economically the contracted entities;
- stakeholder engagement on environmental issues.



The establishment of such Network will be formally sealed during the Mutual Learning Workshop *"Smart ideas for sustainable and low-carbon ports"* to be held in Trieste (Italy) on November 13th, 2019.

The **Network is open to new interested ports**, placed also outside the Adriatic-Ionian region, willing to embrace and replicate the SUPAIR approach and methodology. For further information on how to join the Network of Adriatic-Ionian Sustainable and Low-Carbon Ports and participate at the Mutual Learning Workshop please send an email to supair@areasciencepark.it

Figure 5 – News on the project webpage

The table below represents the list of port authorities that have been officially invited to attend the Workshop, with indication of those who accepted or declined and their interest in being part of the Network:

Name of port authority	Country	Workshop attendance (Y/N)	Network
Port of Rijeka	Croatia	Yes	Yes - signed
Port of Split		No	Yes - signed
Port of Rovinj		No	No
Port of Zadar		Yes	Yes - signed
Port of Sibenik		No	No
Port of Ploče		No	Interested
Port of Ancona	Italy	Yes	Interested
Port of Bari		No	Interested
Port of Augusta		No	No
Azienda Speciale per i porti di Ortona e Vasto - ASPO		No	Interested
Port of Igoumenitsa	Greece	No	No
Port of Patras		No	Yes - signed
Port of Corfù		Yes	Yes - signed
Port of Volos		Yes	Yes - signed
Port of Vlore	Albania	Yes	Yes - signed

Table 1 – List of invited port authorities

Report on Workshop implementation

The SUPAIR Workshop on “Smart ideas for sustainable and low-carbon ports” started at 2.30pm with a presentation of the project manager, Mr. Fabio Tomasi (AREA), who welcomed the participants and briefly presented the SUPAIR project objectives, activities and main outputs and the agenda of the Workshop.



Figure 6 – Workshop's introduction

The moderator, Prof. Marco Mazzarino (IUAV), before giving the floor to the invited speakers, outlined how definitely straightforward the timing – and location - of the workshop was, given the negative concurrent consequences of sea level rise, particularly in the North-East Italy - Venice most of all - and in other cities as well during the period. Moreover, the IEA (International Energy Association) Annual Report 2019 was just released, showing a constant globally increase of CO2 emissions along with a peaking in oil demand.

He then briefly underlined how the partners of the project SUPAIR have followed a [common methodological approach](#)² – developed by Venice International University (VIU) – when developing and implementing their action plans, thus ensuring comparability of results and replicability of the port sustainability model in other port regions. The common framework is summarized below.

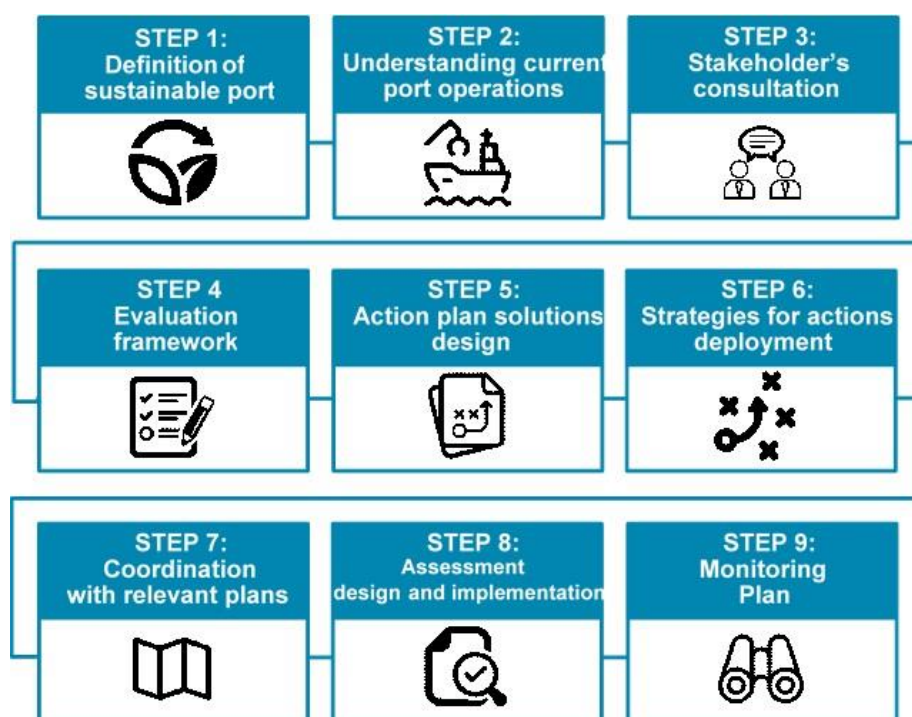


Figure 7 - The methodological framework

Moreover, a common picture – again, developed by VIU as additional guideline to support port project partners- including an extensive number of good/best practices in Europe was presented as well.

The scheme classifies relevant EU experiences on the basis of major port sustainability topics and issues (e.g., air quality, energy consumption, noise, etc.), indicators employed to assess the effectiveness of action plans (e.g., emissions, emission standards, CO2 footprint, water consumption, etc.) and a number of strategies implemented in the port environment (e.g., clean energy investments, cleaning tools and equipments, onshore power supply, etc.). The scheme was brought to the attention of the workshop participants to hopefully promote a comparison of the general picture EU-wide with the concrete actions taken in the specific Adriatic-Ionian region. Eventually, such an exercise should indicate the specific “sustainability sensitivity” of involved ports with respect to overall sustainability issues/topics, indicators and strategies.

² “Guidelines for Sustainable and Low-carbon Ports”, M. Mazzarino and L. Rubini - July 2018.

SUSTAINABILITY ISSUES/GOALS	INDICATORS	STRATEGIES/ ACTION PLANS
Air quality	<ul style="list-style-type: none"> ➤ emissions (SOx, NOx, CO₂, particulates, dust) <p>Clean shipping:</p> <ul style="list-style-type: none"> ➤ emission standards/ESI ➤ emission-reducing technologies ➤ fuel used ➤ type of engine 	<p>Tools:</p> <ul style="list-style-type: none"> ➤ We-nose/E-nose ➤ discounts on port dues/incentive programs
Energy consumption	<ul style="list-style-type: none"> ➤ CO₂ footprint ➤ energy efficiency (CO₂/output) 	<ul style="list-style-type: none"> ➤ clean energy investments (renewable, LNG, methanol, wind) ➤ decarbonisation strategies
Noise	<ul style="list-style-type: none"> ➤ emissions (surveys, maps) 	<ul style="list-style-type: none"> ➤ differentiated port charging systems ➤ onshore power supply
Water quality and management	<ul style="list-style-type: none"> ➤ ships 'waste: water ballast, oil & oily water, chemical waste, sewage, garbage ➤ cargo spillage ➤ dredging sediment contamination ➤ oxygen conditions ➤ salinity ➤ nutrients levels ➤ chemical conditions ➤ emissions of metals and polyaromatic hydrocarbons ➤ water consumption 	<ul style="list-style-type: none"> ➤ alternative ways to use dredging sediments ➤ ship waste management plans ➤ cleaning tools and equipment
Waste management	<ul style="list-style-type: none"> ➤ clean shipping (ships 'waste) ➤ dock litter (empty cans, plastic, wood, etc.) 	<ul style="list-style-type: none"> ➤ port waste management plans (collection, transport, processing) based on the "polluter pays" principle ➤ specialized barge systems
People: society, employment & safety	<ul style="list-style-type: none"> ➤ perceptions (surveys) ➤ job market: skills, career development paths ➤ incidents, inspections 	<ul style="list-style-type: none"> ➤ "open port" initiatives ➤ events ➤ EDU & training programs ➤ cooperation strategies among in charge organizations (police, fire

			department, customs, etc.)
Innovation and R&D	<ul style="list-style-type: none">➤ innovative companies (numbers and allocated spaces)➤ R&D investments	<ul style="list-style-type: none">➤ development programs fostering innovation (e.g. allocating port spaces to innovative companies), also in cooperation with the city	
Economic development and the circular economy	<ul style="list-style-type: none">➤ employment➤ added value➤ profitability➤ productivity➤ GDP contribution➤ recycled waste (quantity)	<ul style="list-style-type: none">➤ developing recycling and reuse processes and activities	
The natural environment	<ul style="list-style-type: none">➤ Cleanliness index➤ biodiversity➤ hectares of conservation areas➤ habitats and ecosystems	<ul style="list-style-type: none">➤ ecological networks➤ creating conservation areas	
Soil	<ul style="list-style-type: none">➤ soil contamination (surveys on soil pollution)➤ contaminated land	<ul style="list-style-type: none">➤ actions minimizing impacts	
Supply chain responsibility and stakeholder engagement	<ul style="list-style-type: none">➤ meetings with stakeholders and customers	<ul style="list-style-type: none">➤ promoting regular meetings	
Accessibility and mobility	<ul style="list-style-type: none">➤ modal shift➤ information provision to port users➤ commuting trips	<ul style="list-style-type: none">➤ technological tools providing information to port users and stakeholders➤ EDI systems and platforms involving port users and stakeholders➤ promoting modal shift, also for commuting trips➤ infrastructures upgrades	

Table 2 - desk research and international good practice outcomes

According to the workshop agenda, a number of good/best practices were presented by two keynote speakers, in particular:

- the remarkable experience of the Central Adriatic Ports Authority, represented by Mr. Guido Vettorel, Head of unit development, promotion, statistics, communication and EU projects. The speech entitled “*Sustainability, a key element for port development*” aimed at presenting the Port sustainability strategy, the actions and projects that are implemented to improve the efficiency of port operations;
- the anti-pollution tools in the port marine environment presented by Guidotti Ships company.

The 7 Action Plans for sustainable and low-carbon port

Subsequently, the 7 port authorities involved in the SUPAIR project presented their Action Plans for a Sustainable Low-Carbon Port developed in the framework of the project, describing the current state of art in terms of port sustainability and the strategies that will be developed to implement more efficient and greener transport policies and reduce their impact on the environment.

In particular, each port focused on specific areas of interest, thus replying to the initial question “*How does a sustainable port look like?*” By summing up the goals and actions foreseen by each port, the following infographic has been created to represent the ideal sustainable and low-carbon port:

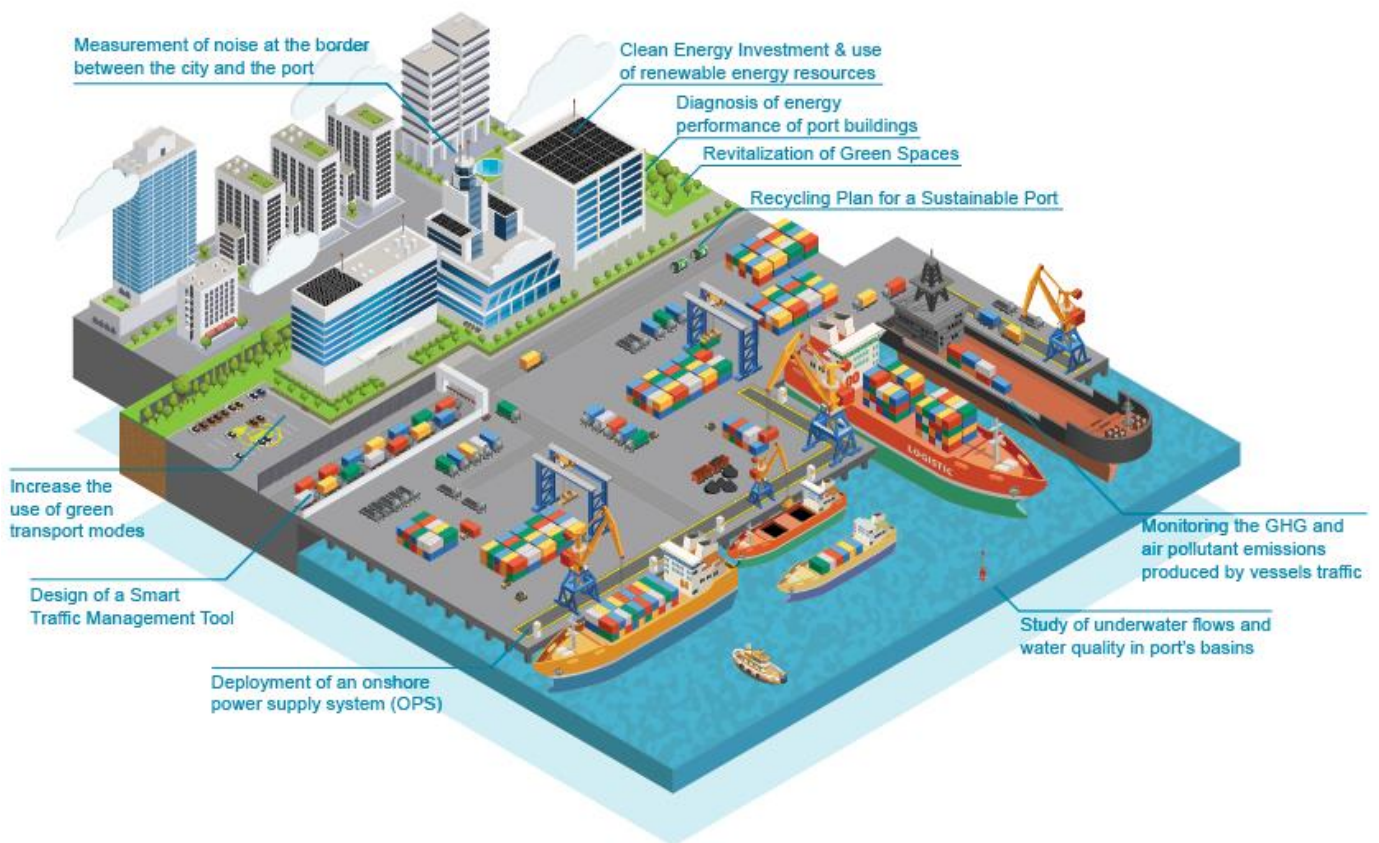


Figure 8 – SUPAIR port infographic

Strategies for environmental protection: how to improve energy efficiency in the Port of Venice, Ms. Erika Rizzo - North Adriatic Sea Port Authority.

Within SUPAIR project, North Adriatic Sea Port Authority has implemented several actions paving the way towards a low carbon model port. In particular:

- Design and implementation of a Smart Traffic Management Tool to improve the port performances landside, explicitly addressing the reduction of queues and waiting, transit, loading and unloading times of goods and passengers, reduction of consumption and emissions of pollutants
- Creation of a DATAMART and a Road Access Report Form in the Port Community System called LOGIS
- Analysis of energy consumption of buildings and port facilities



Figure 9 – Port of Venice

Our Journey on the Waves of Sustainability, Ms. Elisabetta Scala – Port Network Authority of the Eastern Adriatic Sea

As the Port of Trieste confirms its leading position at national level in 2018, achieving +1.2% growth in the total throughput and in railway traffic with +12%, it is also working hard on enhancing its sustainability framework. Thanks to the analysis undertaken within SUPAIR project, the Port presents the important step forward in line with the main national, EU/international applicable standards and guidelines. In particular the main actions addressing sustainability in which the port has focused its attention are:



Figure 10 – Port of Trieste

- Buildings refurbishment to save energy, such as: installation of a natural gas-powered boiler for the heating system, installation of insulating windows and installation of a PV plant.
- Retrofitting of the external lighting plant with the replacement of all high pressure sodium lamps with LED lamps with at least 160 lm/W.
- Retrofitting of the vehicle fleet/substitution with e-vehicles.
- Onshore Supply Power (OPS) for RoRo vessels.

Development of Sustainability in the Port of Koper, Mr. Roberto Richter – Luka Koper

Over the years, the enlargement of the operational area dedicated to the port, as well as the ever-increasing volumes of goods transported through the port area, have raised issues that had not aroused interest until a few years ago. Today, the development of technologies, EU legislation and the awareness of the various logistic operators, have ensured that the environment and the local population are also kept in strict consideration during the creation of port development plans. Luka Koper has been implementing control and monitoring measures for the surrounding environment for years, in order to prevent and verify as far as possible the parameters of the environment within the port and in its immediate vicinity - those on which the port may have a direct influence. Measurements and analyzes carried out through the activities of the SUPAIR project have allowed Luka Koper, d.d. to improve monitoring of the influences of the port in the surrounding area, maintaining a high level of operation, respecting the surrounding environment.



Figure 11 – Port of Koper

Green port transformation, Mr. Rade Stanisic – Port of Bar Holding Company

The overall objective of the “Action Plan for Sustainable and Low-Carbon Port of Bar” is to show Port of Bar ways for a more efficient use of energy in port operations in order to reduce costs, improve the port’s overall efficiency and increase its environmental performance. To achieve this goal, the Plan will comprise detailed information on how to reduce the negative environmental impacts of port operation in a cost-efficient manner.

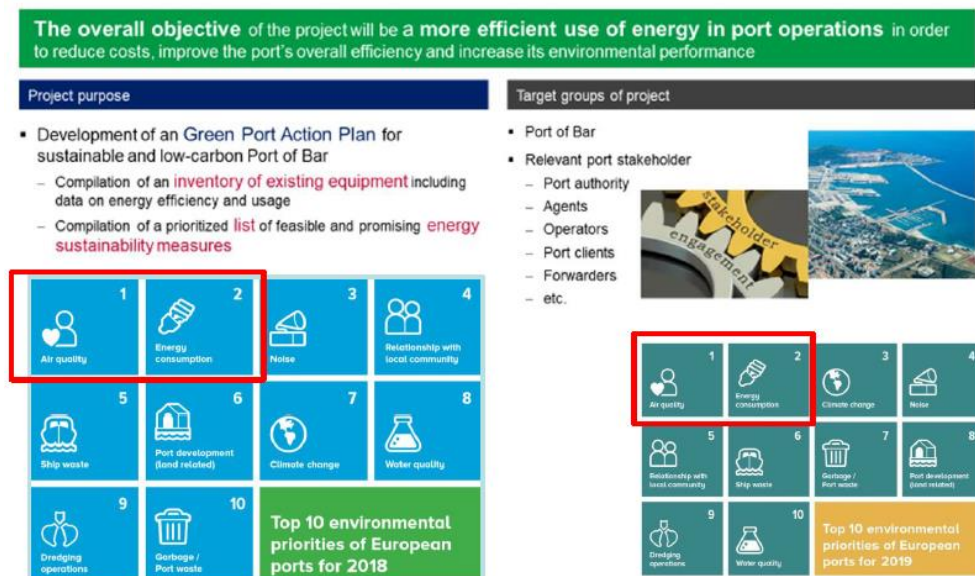


Figure 12 - Objective, purpose & target groups of Bar Action Plan

Designing a Sustainable Eco- Friendly Port, Ms. Serena Kovaci – Durres Port Authority

The Action Plan for a sustainable and low-carbon Port of Durres focuses on 3 main sustainability goals:

- Improving the port environment and surrounding areas through the revitalization of green spaces and the implementation of a recycling plan for a sustainable port;
- Enhance the green mobility shifting to low carbon transport mode;
- Reduce the port energy consumption promoting the use of renewable resources.



Figure 13 – Port of Durres

Strengthening the environmental and energy management of a port under development, Mr. Alkiviadis Tromaras (CERTH) on behalf of Eva Vafaki – Thessaloniki Port Authority SA



Figure 14 – Port of Thessaloniki

The presentation described the main characteristic of the Action Plan elaborated by the Port of Thessaloniki, in particular focusing on the benefits obtained by the installation and functioning of an environmental/energy management database, the results and targets set by the ThPA Energy Management Plan and the outcomes of the transportation study regarding the truck flow management inside the port facility.

Transforming the Port of Piraeus into a next generation port with advanced environmental measures, Ms. Chryssanthi Kontogiorgi – Piraeus Port Authority SA

The Port of Piraeus (PPA), as one of the largest developing companies on a European level is considered a pioneer in the application of new technologies and the identification of new operational practices always in respect to environmental sustainability and social coherence. As such, PPA is in a continuous process of identifying environmental aspects and necessities related to its port activities and pursuing continuous improvement of its environmental performance according to European and international standards. Based on its identified environmental priorities, the port presently focuses on implementing a carbon footprint and energy management plan, evaluating and designing measures in balance to the operational, technical, financial and business development prospects.



Figure 15 – Port of Piraeus

At the end of the presentations, it was underlined by the Workshop moderator, how Action Plans produced by project partners differ in the levels of maturity, since some ports focus on already on-going initiatives (e.g., Koper), while others are developing actions to be deployed in the short-term (e.g., Trieste, Durres, Thessaloniki). Additionally, some project partners are envisaging more long-term strategic actions (e.g., Bar, Piraeus, etc.).

The Transnational Cooperative Network of Adriatic-Ionian Sustainable and Low-Carbon Ports



Figure 16 – CERTH presentations

Mr. Alkiviadis Tromaras (CERTH) officially announced the creation of the [Transnational Cooperative Network of Adriatic-Ionian Sustainable and Low-Carbon Ports](#). Initially composed by 3 business and research organizations (AREA, VIU and CERTH) and 7 ports of the Adriatic-Ionian region already partners of the SUPAIR project, the Network aims at promoting sustainable low carbon port practices among its members, strengthening the cooperation in the field of sustainable port development, environmental and energy management and low carbon solutions.

Specifically, the focus of the Network is the promotion of exchange of expertise on the following topics:

- implementing low-carbon port action plans during and beyond the SUPAIR project's duration;
- developing environmentally friendly transport systems solutions related to port activities;
- improving transnational relationships between the signatory ports and stakeholders of the Adriatic-Ionian Region;
- increasing sustainability integration in the community and benefit socio-economically the contracted entities;
- stakeholder engagement on environmental issues.

Several are also the areas of cooperation, including: port environmental and energy aspects; mobility issues; freight and logistics issues; training and skills of employees; economic, social and trading relationship establishment between port authorities as well as the port's locality, etc.

The Network is open to new interested ports and other entities (such as public authorities, research organizations, etc.), placed also outside the Adriatic-Ionian region, willing to embrace and replicate the SUPAIR approach and methodology.

To sum up the **current Network members are:**

- The SUPAIR project partners
- Additional new members: Port of Vlorë (Albania), Port of Corfu, Volos and Patras (Greece), Port of Rijeka and Zadar (Croatia).

Finally, Mr. Lefteris Sdoukopoulos (CERTH) presented the **Transnational Strategy for low-carbon transport systems in the Adriatic-Ionian basin** that is currently being developed to be attached to the Memorandum of Understanding that is setting up the Network. The document sets the vision and strategic objectives to be

achieved by ports for shifting from a highly emitting transportation system to a more sustainable one, building upon current relevant policies set at European, national and local level. The Strategy aims to serve as a living document integrating any new policies introduced as well as additional ones from countries of new port members entering the network.

Final debate among participants and conclusions

When wrapping-up results and achievements, and before opening the debate, the workshop moderator highlighted how all project partners developed a straightforward common strategy to deal with port sustainability, in which *SUPAIR Guidelines for Sustainable and Low-carbon Ports* were usefully employed, thus ensuring comparability. Importantly, by looking at the main port sustainability topics addressed by project partners, the sensitivity of the SUPAIR ports focuses towards issues such as: 1) energy consumption, which received the top score of relative “importance” by partners, 2) port accessibility, 3) noise, 4) the natural environment (e.g., green spaces, etc.), 5) the circular economy (e.g., recycling processes, etc.), 6) water quality and 7) pollutants emissions. Conversely, it was remarked that other issues, included in the overall definition of port sustainability and considered by ports EU-wide, addressed in the SUPAIR project seem to get relatively less attention by ports in the area, namely the topics related to “people” (job career paths, EDU & training programs, etc.), Innovation & Research (e.g., innovative companies in the port environment, etc.) and economic development (strategies promoting regional economic growth, etc.). In fact, on top of addressing sustainability issues aiming at increasing efficiency in the port environment and reducing overall resource consumption and emissions, ports should also promote actions and policies fostering regional development. Moreover, while implementing sustainability actions, the role of ports should be considered with relationship to the overall global supply chains they belong to and not as an independent node. Such remarks were discussed during the final debate, in which particularly the potential role of ports as “innovation hubs” to promote sustainability policies was emphasized. Such a role could be considered in follow-up initiatives by project partners.

In conclusion, it seems that two major key words could summarize future potential efforts by partners in project proposals in the field of sustainability:

- the role of ports to promote regional *development*;
- the *integration* of ports within overall supply chain and the territory.

Highlights from final debate

To foster synergies among projects funded by the same funding program (Interreg ADRION), representatives from PoWER and SHIPmEnTT projects, who were attending the Workshop, briefly summarized their project objectives and outputs.

In particular:

- Mr. Roberto Malvezzi (CNR), presented the [PoWER project](#), highlighting possible connections with the SUPAIR project. In particular, the idea of PoWER as an “open innovation process” was described; starting from the innovation needs expressed by ADRION ports with main reference to energy-oriented issues, it aims to generate “innovation supply chains” involving actors from Business, School, Research and Public realms. The project will deliver fruitful proposals for addressing those needs both in terms of viable solutions to be exploited and innovative ideas to be capitalized. This will lead

to the activation, in partner ports, of new and integrated "Innovation Hubs" where the open innovation process tested in PoWER could become systemic and permanent, so to address in future other themes than the energy-related issues directly tackled by PoWER. An "Innovation Hubs Network" will also be activated, aimed to cluster needs, ideas and solutions at the ADRION scale, and thus to foster cross-border cooperation and strategic co-design among ports and stakeholders. Finally, the invitation to join the Innovation Hubs Network by the SUPAIR partners was launched.

- Ms. Costanza Galbardi (Area Science Park), provided a brief introduction to [SHIPmEnTT project](#), which is devoted to strengthening competitiveness and increasing growth of SMES active in green sea mobility through IP protection and exploitation and access-to-finance tools. Synergy with other projects (like SUPAIR) dealing with sustainability both at sea and in nearby towns/ports in the Adriatic area is sought.

Ms. Maria Poulou, from Municipality of Piraeus, highlighted how crucial it is the cooperation between the port and the city, which should not be conceived as two separate entities, but should work together in order to create plans which are synergic and shared to improve the people quality of life.

Mr. Carlo Kraskovic, from Maritime Technology Cluster FVG, reported that, in terms of priorities for ports at Adriatic-Ionian level, it has been important to understand, through the SUPAIR workshop, what is the current state of the art in diversified ports in the targeted sea basin. In this sense it is relevant to acknowledge the importance of research and innovation, as this topic represent for the Cluster a key issue since they are striving to guide innovative features and competences of innovative SMEs towards concrete needs of ports and port related players.

Mr. Stambuk Djoni, from Port of Zadar, one of the invited port authorities, stated that it was very interesting to hear that ports placed in such a large territory share common topics and strategies when it comes to the environmental sustainability. Also, the Port of Zadar is developing a study on how to implement alternative fuels in the Zadar area.

Mr. Marco Slavich, from AREA, highlighted that, based on the presentations done, the port of Durres is the only one that plans to introduce some green areas within the port. Vegetation has not only an aesthetic function but can serve as a carbon sink as well. Usually it's not easy to find some space that is not used for harbor activities inside a port. In some cases this space is found on the boundary between the harbor and its surrounding in the form of a sort of transitional space or buffer zone, but often the ports are one part of the city, like a neighborhood. Green roofs could be a solution and they could bring many benefits as well. Many ports plan to enhance the energetic performance of some buildings and green roofs can help reducing the energy needed for summer cooling: this could be very useful for refrigerated warehouses where perishable goods are stored, but for office buildings as well. A green roof lowers the surface temperature as well, allowing photovoltaic panels to produce more energy. Other positive effects of green roofs consist in their ability to retain rainwater, especially during heavy rains, and provide a habitat for plants and animals, working as stepping stones and increasing biodiversity in port areas. Nowadays, vegetation can be placed on vertical surfaces as well. Using vertical planters, green walls and green barriers can be built. Green walls can contribute to sun shading and so reducing energy needs for cooling in summer. Green barriers could be placed on the boundaries of ports, where there is not enough space to create a buffer zone and they could contribute to absorb or reflect the noise produced by harbor activities. The air quality could be positively affected if the most suitable species of plants are chosen together with experts in order to filter the air, cleaning it from pollutants and retaining dust and particulate matter.



Figure 17 – The Workshop speakers

ANNEXES

[Annex I - Workshop agenda](#)

[Annex II - SUPAIR project factsheets](#)