

Digital Transformation, Innovation, Cooperation:

What are the challenges
and opportunities for
Mediterranean ports?

Innovation for sustainable development – the IAPH World Ports Sustainability program

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COLLABORATION OF:



13 Dec 2023

Wednesday

World Ports Sustainability Program



Mission : To integrate the 17 UN SDGs in port governance



WPSP Database of sustainability projects

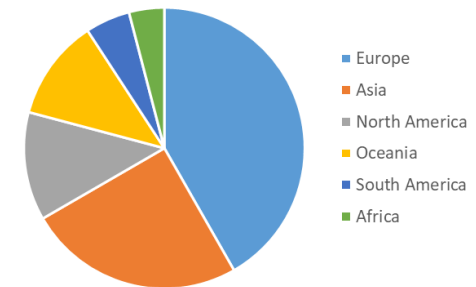


327
PROJECTS

132
PORTS

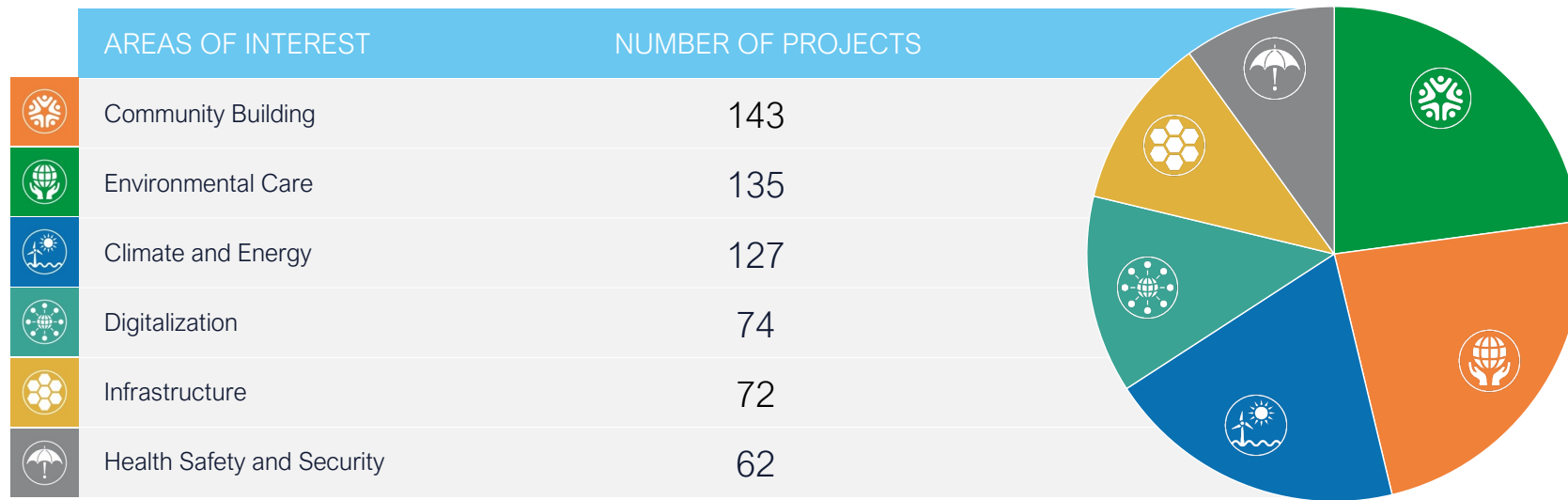
58
COUNTRIES

Number of projects per Continent

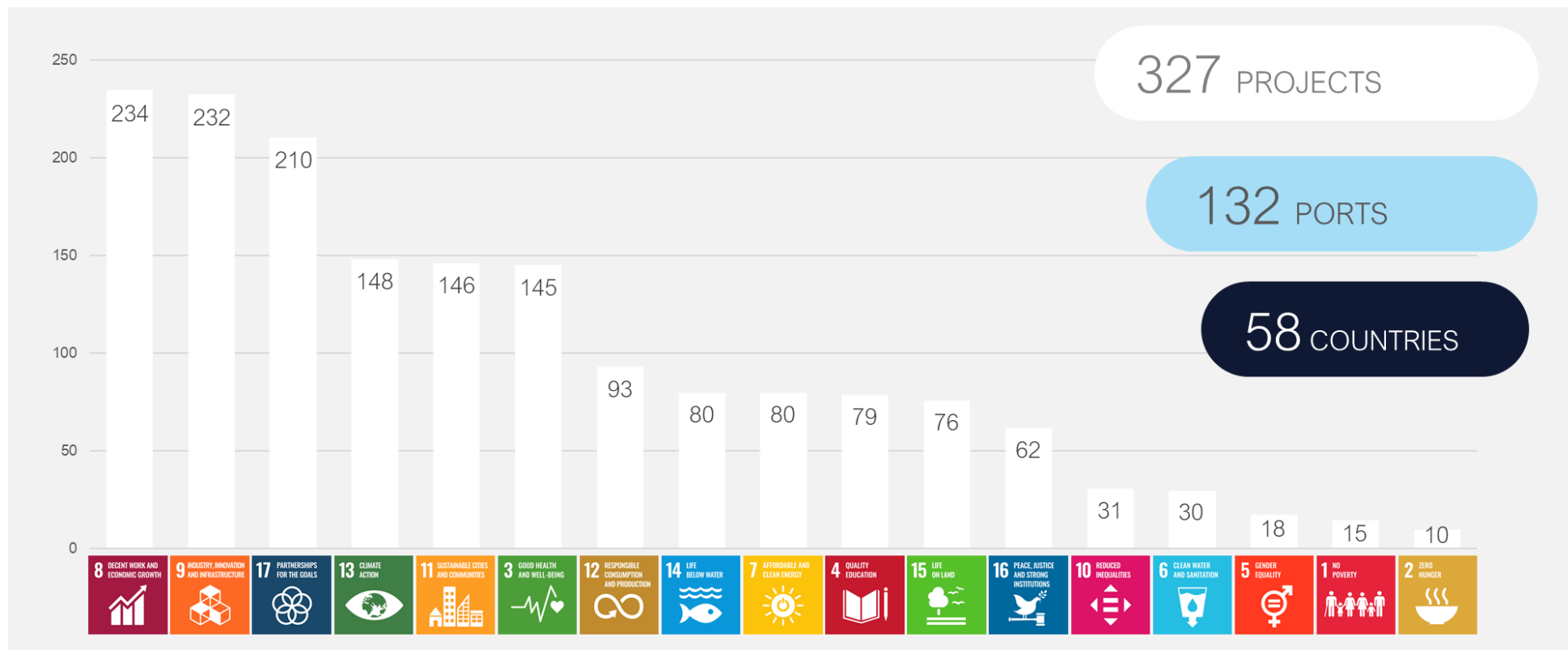


WPSP port projects portfolio (327 projects)

4



Number of projects per SDG



IAPH Sustainability Awards



#IAPH2023 SUSTAINABILITY AWARDS
RUNNER-UP

COMMUNITY BUILDING



Collaborative project

Youth Employment in Ports
of the Mediterranean



#IAPH2023 SUSTAINABILITY AWARDS
RUNNER-UP

DIGITALIZATION



National Ports Agency
of Morocco

Smart port innovation
approach



#IAPH2023 SUSTAINABILITY AWARDS
RUNNER-UP

INFRASTRUCTURE



Port of Barcelona

Your port
opens up again



#IAPH2023 SUSTAINABILITY AWARDS CANDIDATE

COMMUNITY BUILDING



Port of Taranto

Open Port
exhibition center



#IAPH2023 SUSTAINABILITY AWARDS CANDIDATE

COMMUNITY BUILDING



Port of Valencia

Port immersion vocational training (PIVOT)



#IAPH2023 SUSTAINABILITY AWARDS CANDIDATE

DIGITALIZATION



Israel Ports

Digital application process for licensing and enforcement of the export of hazardous waste



#IAPH2023 SUSTAINABILITY AWARDS CANDIDATE

ENVIRONMENTAL CARE



Port of Cartagena

Posidonia Oceanica marine forest



#IAPH2023 SUSTAINABILITY AWARDS CANDIDATE

INFRASTRUCTURE



Collaborative Project

ECCCLIPSE



Birth of Port Endeavor



CUT DOWN ON CARBON & GHG EMISSIONS

The city has developed a vision to achieve carbon neutrality. This implies efforts to reduce landside greenhouse gas (GHG) emissions. The port is a vital part of this project.

However, the seaborne and waterside CO2 emissions from vessels haven't been tackled yet. The port management body is asked to take action and assist in the decarbonization of shipping.

SOLUTIONS

<p>1 Cost: 3 ⭐</p> <p>You partner up with other ports to provide common incentives for more efficient and less polluting vessels who visit the port, based on the Environmental Ship Index (ESI).</p>	<p>2 Cost: 4 ⭐</p> <p>You work together with shipping companies and nautical chain stakeholders on port call optimization. That way, you enable Just-In-Time (JIT) arrival of vessels. As a result you reduce berth waiting time and ultimately reduce gas emissions.</p>
<p>3 Cost: 6 ⭐</p> <p>You work together with bunker suppliers, shipping companies and authorities to ensure the supply and availability of low- and zero-carbon fuels. Meanwhile, you address any legal and infrastructural barriers that might undermine the efficient and safe handling and bunkering of such fuels.</p>	<p>4 Cost: 8 ⭐</p> <p>You invest in the provision of Onshore Power Supply (OPS) from renewable energy sources in all terminals of the port.</p>

PORT ENDEAVOR



Port Endeavor : a port journey to SDGs

- Knowledge base concept was created at a joint UNCTAD-IAPH workshop in Geneva HQ in April 2019
- Development game dynamics and content by IAPH and experts from Port of Antwerp-Bruges
- Real life examples from the WPSP database of 327 projects and best practices from 132 ports from 58 countries
- Offered in partnership with: APEC – Antwerp & Flanders Port Training Centre and UNCTAD TrainForTrade
- Available in English, Spanish and French
- Over a thousand port professionals have already played the game in three languages in 20 countries



The mindset shift towards innovation 
A set of guidance fact sheets for ports

PREFACE

Dr. Patrick Verhoeven,
Managing Director, International Association of Ports and Harbors (IAPH)

Since the world's port community gathered at the IAPH 2022 Conference in Vancouver last May, our technical committees have continued working on their respective programs with the aim of closing the gaps of port competitiveness in terms of both physical and digital infrastructure. Alongside our core themes of climate and energy, data collaboration and risk and resilience, the fourth major conference theme focused on business innovation. Innovations create the boundaries of all our three core IAPH themes and is the key to business improvement. As this white paper explains, innovation is not just about technology. A lot of it is about thinking differently. Different may not always be better, but better is always different.

This white paper The mindset shift towards innovation has been put together with the guidance of our Innovation Group Chair Gadi Benmoshe, [with contributions from our members](#). Many of our contributors are actively participating in the work of the Data Collaboration Committee which is guiding the innovation activities, led by our Chair Pascal Olivier.



Innovation is not just about technology.

I am grateful for their collective work in putting this whitepaper together and look forward to the next set of facts our IAPH Innovation Group will come up with to support our member ports in placing innovation at the forefront of their business strategies.

IAPH Innovation Group

The next step of the industry call to action to accelerate digitalization:
Pascal Olivier,
Chair - Data Collaboration Committee

Last June marked the second anniversary of a joint call to action coordinated by the International Association of Ports and Harbors (IAPH) with other industry partners to accelerate digitalization in the maritime supply chain. Since then, encouraging steps have been taken in providing a digital roadmap for ports, guidelines recognized by the IMO FAO committee on cyber security for

ports and port facilities and other initiatives such as the IAPH World Ports Tracker, Binding agreements, avoiding misconceptions, standardizing and promoting best practices so how port communities can apply emerging technologies in part of that call to action. Succeeding in putting smart ideas into practice not only accelerates digitalization. More importantly, it can shift port executives' mindsets towards innovation. This is the theme of the whitepaper (left) and this Innovation Group facts members have put together for you, as a first step in a series of actions to support innovation in ports.



The IAPH Innovation Journey

Gadi Benmoshe,
Chair - Innovation Group, Data Collaboration Committee

At the beginning of this year, IAPH convened its Innovation Journey by setting up a dedicated Group. We started a number of Innovation experts from ports around the world to take part and received an enthusiastic response. During our first group meetings we focussed on our goals and planned and prioritized activities. We all believe that innovation, when shared, is an important tool that can address varying levels of efficiency and infrastructure quality at different ports.

Our first aim is for port colleagues to get a common understanding about the positive role innovation can play in their organizations. To us, innovation is not about new technology, but about practical examples from ports who have already commenced their own innovation journeys. From this basis we will build with further, concrete activities to support ports on innovation.



We have already seen with the completion of this whitepaper that having different perspectives and expertise can accelerate the group's activities. It would like to encourage other ports to join the IAPH Innovation Group and take part in this exciting journey we have embarked upon where everyone has something to gain.

INTRODUCTION

Ports are now emerging from their classic role of being predominantly landward responsible for offering land connectivity for the transport and handling of ships, cargo and passengers to serving their local economies and communities and forming a network of business hubs for global trade facilities. Ports across the planet are now embracing digitalization, an emerging and exciting innovation to offer a new process. However, in the last few years, ports from around the world have commenced their journey in innovation activities to improve their operational efficiency and

integrate new solutions to generate new revenue streams. One of the goals of IAPH, which gathers member ports from all over the world, is to bridge the gaps between the varying levels of port competitiveness and quality of infrastructure, increasing its own reputation and sharing knowledge to one of the tools for reaching this goal. This whitepaper has been compiled and edited by the experience of many port innovation experts who are members of IAPH Data Collaboration Committee. Divided into easy-to-read sections that can be used as factbooks,

this document gives a snapshot and calls actions for senior port executives who are serious about bringing in a mindset shift towards innovation in their ports.



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Executive SUMMARY in 10 points

- 1 The port sector needs to embrace innovation as part of its own transformation.** Ports face multiple challenges, in a constantly changing economic context, and must adapt to both new international and national regulatory requirements, strong international competition, accelerated digitalization and major climate and environmental challenges. An innovation strategy makes it possible for ports to adapt and reinvent themselves in what has now become a highly competitive and uncertain environment.
- 2 Innovation can be applied to products and services, processes, organizational structures and the business models of ports, with technology enabling innovation rather than being a solution in itself.** The focus has to be on the product, the service, the process or the business model and technology should become a driver for innovation. Not all innovation is technology based.
- 3 For an innovation approach to be fully integrated into the port's organization, the Chief Innovation Officer should report directly to the top management with cross functional access to all other departments.** Other stakeholders of ports have shared this vision. The innovation function should collaborate throughout all levels of the organization. This includes top management and the board to ensure that innovation is aligned with corporate strategy and obtains their funding.
- 4 An innovation ecosystem can only be achieved through a cooperative approach, with coordination mechanisms to facilitate interaction between different agents in the system.** Open innovation furthers the participation, not only of the port itself, but also of the different agents of the port community, as well as of the innovation ecosystem linked to the port. This includes the creation of well-appointed committees or open working groups, both formal and informal, in which all the agents involved in the innovation processes may participate.
- 5 Avoid identifying the innovation tool first and manage expectations.** Port innovation progress that ultimately fail to deliver are those which try to identify the tool for innovation such as hackathons first before figuring out what a port intends to achieve, which organizational and financial models should be put in place, and the ecosystem it should embed in a port community to ensure that innovation progress and realization.
- 6 Selecting the right innovation tool depends on resources available, the ability to translate an innovation idea in a working proof of concept or pilot and committing to full implementation based on achievable success criteria.** This will vary according to the port's resource availability, but may range from a Proof-of-Concept (POC) request to resolve a business problem, a hackathon to attract new talents and early start-ups or well-funded fully developed pilot projects with the correct mentoring and support.
- 7 The role of an innovation hub is to enhance facilities and tools to enable innovation to access and receive adequate support for their open innovation journey.** These can potentially include: (i) research and development and innovation centers to identify, investigate and explore new concepts and emerging technologies (ii) incubators and accelerators to nurture and develop, test and validate innovative (iii) testing facilities to create, prototype, validate and test innovations in real-life contexts (iv) training centers which are required for capacity building.
- 8 Funding is a crucial element for the innovation ecosystem.** Long-term budget planning at an organizational level is needed. Funding sources may be available from government public tender actions, specific national or regional funds such as from the World Bank, the European Union, local innovation agencies, and private investment firms that have funds focused on different stages of start-up growth (seed, scale-up, growth).
- 9 The timing of ports to commit and invest in start-ups is an essential success factor.** Ports often struggle to engage with the best start-ups due to the time constraints, delays and shortage of funds to support start-ups in later rounds of investment. Ports need to establish their innovation process, by meeting and supporting promising start-ups at their earliest stages, ports can improve the quality of startups that they attract.
- 10 Ports should consider establishing Corporate Venture Capital (CVC) arms to support innovation.** Establishing CVC arms in ports in line with the innovation mechanisms that can generate revenue streams in the long term and can also increase the speed of collaborating with the port. It can attract promising early-stage start-ups that are looking for value creation from their investors.

The innovation function should collaborate throughout all levels of the organization.

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and opportunities for
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THANK YOU

for YOUR
attention

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