



Arab Academy

for Science , Technology and Maritime Transport



The International Maritime Transport
and Logistics Conference

"MARLOG 13"



Towards Smart Green Blue Infrastructure

3-5 March 2024 - Alexandria, Egypt





Francisco Esteban Lefler

President of PIANC – The World Association For Waterborne Transport Infrastructure



Port and Waterway Infrastructure of the future
Challenges and opportunities





PIANC IS

A **worldwide network** of professionals,

Providing **expert advice** on cost-effective and sustainable waterborne infrastructure,

And the **leading partner** for governments and the private sector in the design, development and maintenance of ports, waterways and coastal areas

SINCE 1885!

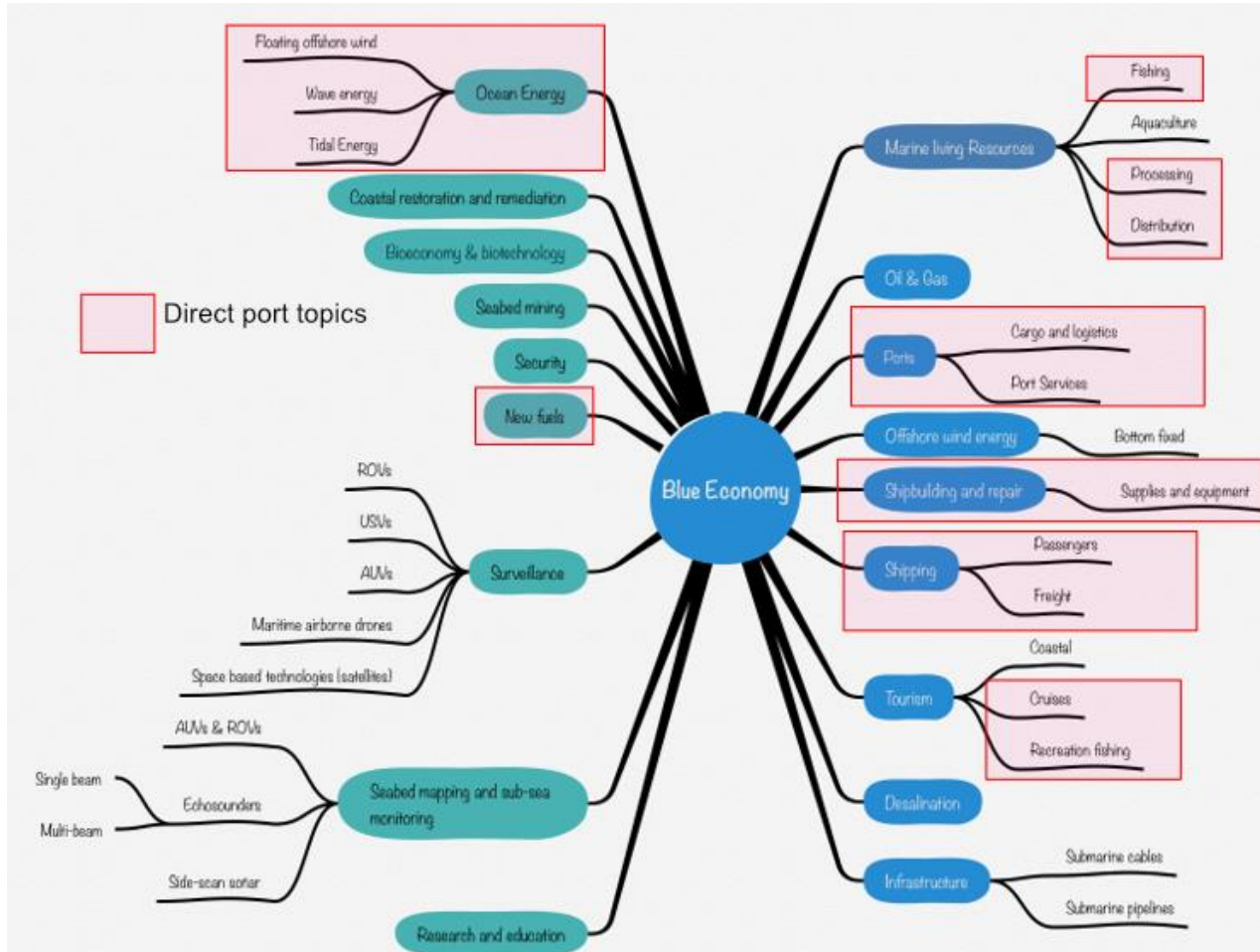




OUR MEMBERSHIP



PORTS AND BLUE ECONOMY



INFRASTRUCTURE

Infrastructure is
neither a
necessary evil
nor an end in
itself



Smart / Green / Blue

INFRASTRUCTURE



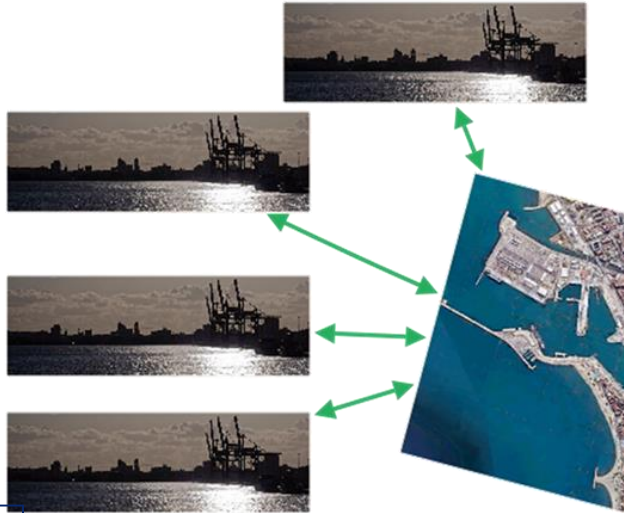
- Physical support
- Limit of capacity
- Time of implementation
 - Adaptative planning
 - Environmental risks
 - New contracting procedures
- Land connectivity
- Bottlenecks
- Dredging: a particular topic
- New design paradigms
- Resilient infrastructure and resilient operation





CONNECTIVITY

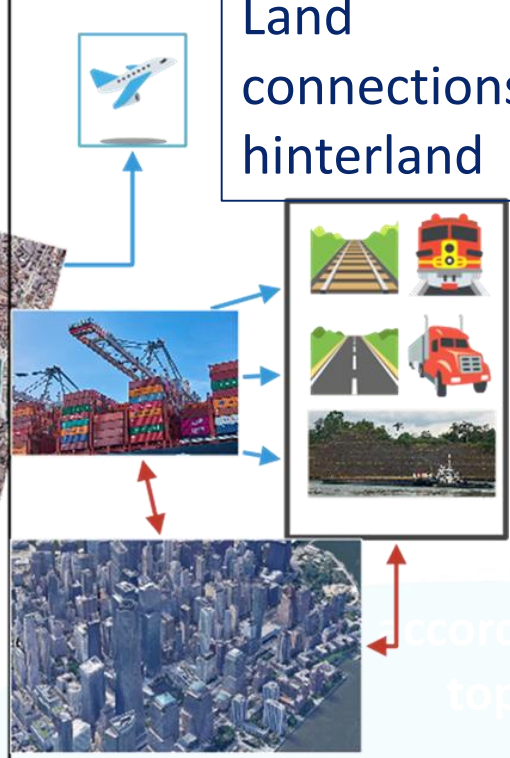
Maritime connections



Connectivity: strength and vulnerability



Land connections: hinterland



Connectivity is not only physical: data & communications



GREEN INFRASTRUCTURE AND GREEN PORT

- Sustainable obtention and operation
- Adapted/adaptable to climate change
- Leading energy transition
- Storage and bunkering of new fuels
- OPS
- Suitable for synchro-mobility
- Suppression of bottlenecks



According to
topics

ENVIRONMENT



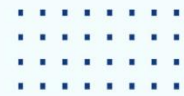
- Vulnerability of natural environment
- Complex interaction with the urban environment
- Stakeholders: The support of Communities
- PIANC Working With Nature



THE PORT AND THE CITY



Port - City Opportunities



PIANC WORKING WITH NATURE

Integrated philosophy:

Achieve project objectives in the context of the ecosystem, overcoming the traditional process: design-impact-correction

STAGES:

1. Needs and objectives of the project
2. Understanding ecosystem and the environment
3. Significant involvement of stakeholders
4. Win-win design proposals



SMART INFRASTRUCTURE AND SMART PORT



Digitalisation: the route to Smart Port

Automated Terminals

Paperless
Procedures

Single
Window

Automated
Procedures

Information
Exchange

Connected
Port
Community

Smart Port
Digital Hub

Digitalisation of infrastructure

Pic here

top



THE SMART PORT



DATA

Collect

Process

Share

SMART PORT TOOLS

Measure
Analyse
Control

IoT

AI

Blockchain

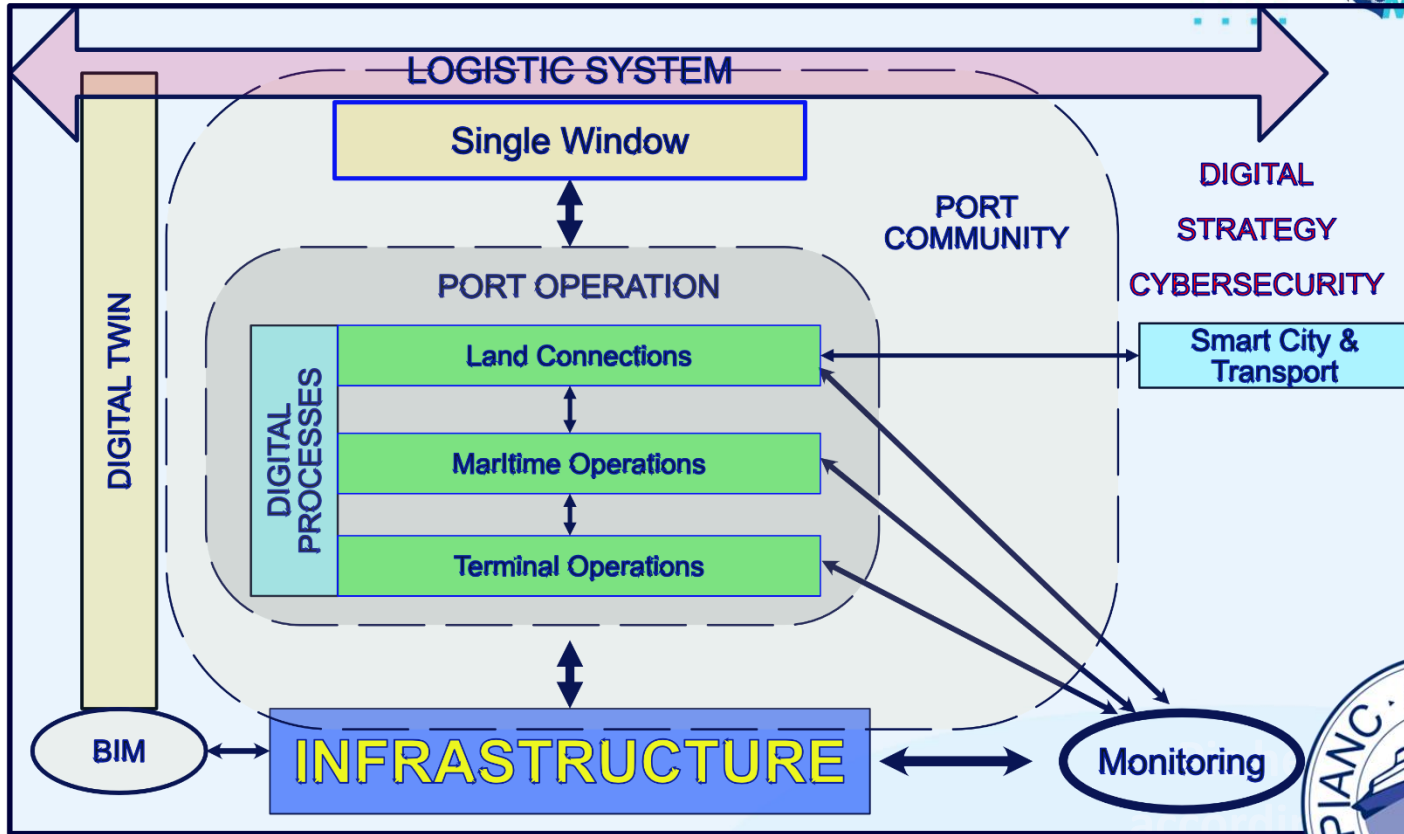
Mobile
technologies
5G

Big
Data

Click here
according to
topics



DIGITAL STRATEGY



topics



ONGOING WORKING GROUPS



WG #	Commission	Title
WwN jury	EnviCom	Commission Cross-Cutting Working with Nature Jury
171	MarCom	Ship Handling Simulation Dedicated to Channel and Harbour Design
174	IAPH EnviCom	Sustainability Reporting for Ports
202	RecCom	Influence of Recreational Navigation Infrastructures (RNI) on Waterfront Projects
216	InCom	Best Practices in Planning Inland Waterways Multimodal Platforms
217	RecCom	The Impacts of Alternative Fuel Propulsion Systems for Recreational Vessels on Marina Design and Management
229	InCom	Guidelines for Air Pollutants and Carbon Emissions Performance Indicators for Inland Waterways
230	EnviCom	How to Attract Green Funding for Nature-Based Navigation Infrastructure”.
236	InCom EnviCom	Sustainable Management of the Navigability of Free Flowing Rivers
237	InCom	Bottlenecks and Best Practices of Transport of Containers on Inland Waterways
238	MarCom	Guidelines for use of BIM in infrastructure for ports and waterways
240	MarCom	Guidance for ports in small island countries
243	MarCom	Design, Maintenance and Sustainability of Container Terminal Pavements
244	RecCom	Climate Change Adaptation Planning for Marinas and Boat Harbours
245	RecCom	Carbon Management for Marinas and Boat Harbours
248	MarCom	Guidelines for Onshore Power Supply (OPS) for Ships
249	InCom	Adaptation of Inland Waterways for Climate Change Impacts



topics



SOME WORKING GROUP REPORTS

(I)



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The World Association for Waterborne
Transport Infrastructure

**ENVIRONMENTAL ASPECTS OF DREDGING,
PORT AND WATERWAY CONSTRUCTION
AROUND COASTAL PLANT HABITATS**



EnviCom Working Group Report N° 157 – 2023



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**Managing Climate Change Uncertainties
in Selecting, Designing and Evaluating Options
for Resilient Navigation Infrastructure**



Permanent Task Group for Climate Change
Technical Note No. 1 - 2022



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The World Association for Waterborne
Transport Infrastructure

**WATERBORNE TRANSPORT, PORTS AND WATERWAYS:
A 2023 UPDATE OF CLIMATE CHANGE DRIVERS
AND IMPACTS**



EnviCom Task Group Report N° 3 – 2023



SOME WORKING GROUP REPORTS

(II)



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EnviCom WG Report
n° 176 - 2018



GUIDE FOR APPLYING WORKING WITH NATURE
TO NAVIGATION INFRASTRUCTURE PROJECTS

The World Association for Waterborne Transport Infrastructure



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The World Association for Waterborne
Transport Infrastructure

GUIDELINES FOR SUSTAINABLE RECREATIONAL
NAVIGATION INFRASTRUCTURE

A Guide for Applying Working with Nature to Recreational Navigation Infrastructure Projects

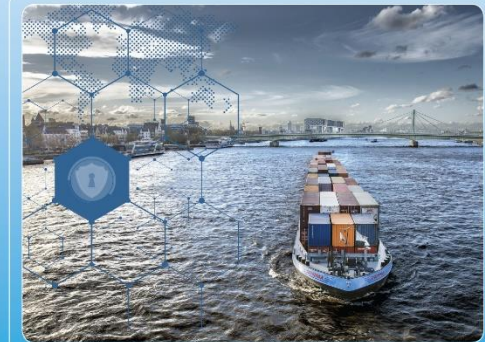


RecCom Working Group Report N° 148 - 2023



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InCom Task Group
n° 204 - 2019



AWARENESS PAPER ON CYBERSECURITY
IN INLAND NAVIGATION

The World Association for Waterborne Transport Infrastructure

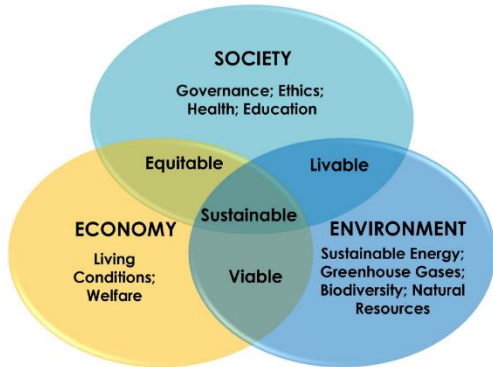
SOME WORKING GROUP REPORTS

(III)



SUSTAINABLE INLAND WATERWAYS

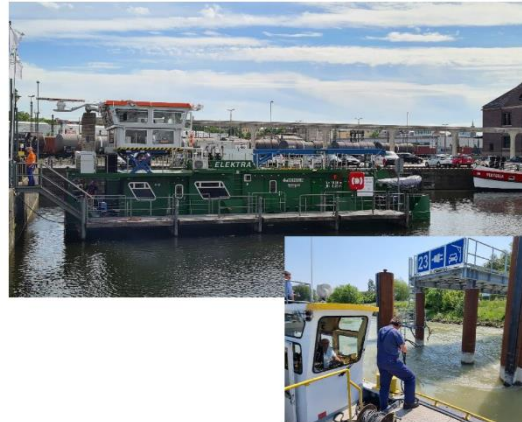
A Guide for Inland Waterway Managers
on Social and Environmental Impacts



InCom Working Group Report N° 203 – 2023



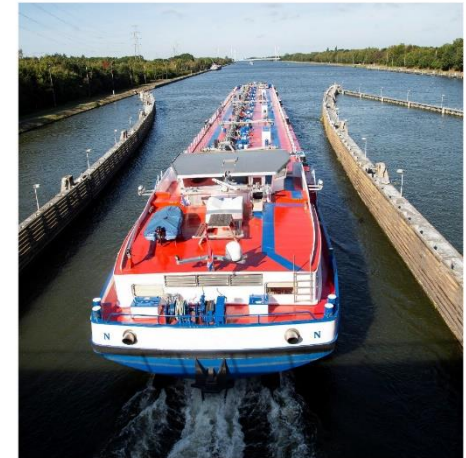
INFRASTRUCTURE FOR THE DECARBONISATION OF INLAND WATERWAY TRANSPORT



InCom Task Group 234 – August 2023



SMART SHIPPING ON INLAND WATERWAYS



InCom Working Group Report N° 210 – 2022

SOME WORKING GROUP REPORTS (IV)



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EnviCom WG Report
n° 175 - 2019



A PRACTICAL GUIDE TO ENVIRONMENTAL
RISK MANAGEMENT (ERM) FOR NAVIGATION
INFRASTRUCTURE PROJECTS

The World Association for Waterborne Transport Infrastructure



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RecCom WG Report
n° 147 - 2020



GUIDELINES FOR MANAGING THE RELATIONSHIP
BETWEEN RECREATIONAL NAVIGATION
AND COMMERCIAL PORTS

The World Association for Waterborne Transport Infrastructure



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MarCom WG Report
n° 159 - 2019



RENEWABLES AND ENERGY
EFFICIENCY FOR MARITIME PORTS

The World Association for Waterborne Transport Infrastructure



35th PIANC WORLD CONGRESS

FUTURE READY WATERBORNE TRANSPORT • UNLOCKING AFRICA

CAPE TOWN, SOUTH AFRICA • 29 APRIL – 03 MAY 2024

...where
according to
topics





Arab Academy

for Science , Technology and Maritime Transport



The International Maritime Transport
and Logistics Conference

"MARLOG 13"

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Thank You

