



# **Navigating a Changing Climate**

## **A Global Climate Action initiative**

Jan Brooke

Navigating a Changing Climate Focal Point

On behalf of the PIANC-led Think Climate coalition



# Navigating a Changing Climate Partners

- The World Association for Waterborne Transport Infrastructure (PIANC)
- International Association of Ports and Harbors (IAPH)
- International Harbour Masters' Association (IHMA)
- International Maritime Pilots' Association (IMPA)
- International Bulk Terminals Association (IBTA)
- Smart Freight Centre (SFC)
- European Dredging Association (EuDA)
- European Sea Ports Organisation (ESPO)
- Institute of Marine Engineering, Science and Technology (IMarEST)
- Inland Waterways International (IWI)



# Navigating a Changing Climate Objectives

- To **improve sector-wide awareness** of climate change; of the challenges waterborne transport infrastructure will face; and of potential solutions or opportunities
- To **create and facilitate knowledge networks**, promoting the sharing of experience and good practice between state and non-state actors at international, regional and national levels
- To develop or facilitate the preparation of **technical good practice guidance**, training opportunities and web-based resources
- To provide a **coordinated, global focal point**: a 'centre of excellence' intended to support the owners, operators and users of waterborne transport infrastructure in building the capacity needed to navigate the changing climate



# Navigating a Changing Climate Action Plan

Four categories of action in line with expectations of Paris Agreement and Sustainable Development Goals

- Expand network of partners and supporters, **raise awareness** of climate-related issues throughout the sector
- Promote actions to reduce (net) greenhouse gas emissions and encourage a shift towards **low carbon** infrastructure and operations
- Improve preparedness, **strengthen resilience** and enable the waterborne transport infrastructure sector to **adapt** to climate change
- Encourage new ways of thinking: Working with Nature, and identifying sustainable and **integrated solutions**



<http://navclimate.pianc.org>



# Navigating a Changing Climate

## Low carbon

Actions include:

- **IAPH World Ports Climate Initiative:** includes carbon footprinting, onshore power supply, environmental ship index
- **Global Logistics Emissions Council** methodology for calculating supply chain logistics emissions; SFC now harmonising methods for ports and terminals
- **ESPO Green Guide** chapter on energy consumption and climate change, EcoPorts tools embed climate change components
- EuDA developing strategy for capture and storage of atmospheric CO<sub>2</sub> '**Blue Carbon**' initiative
- PIANC's Working Group 188 **carbon management** for ports/inland waterways



# Navigating a Changing Climate Adaptation

Maritime and inland navigation may need to adapt to:

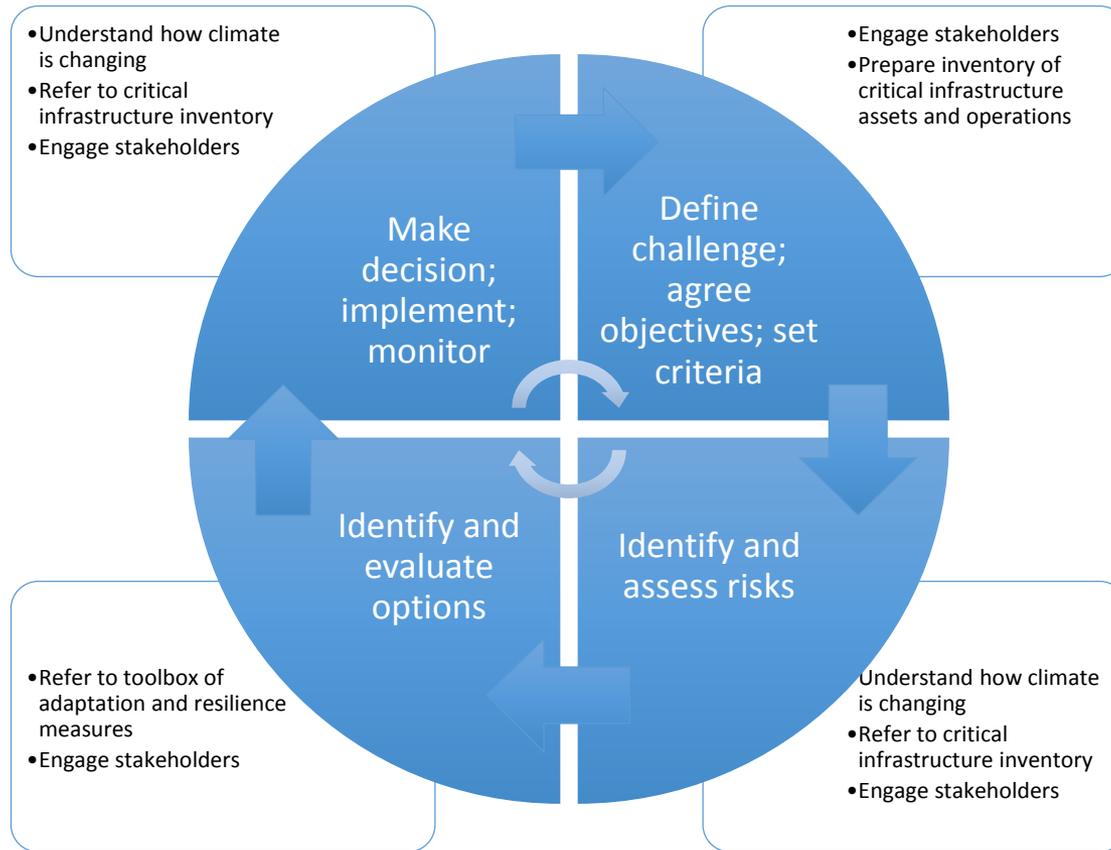
- Increases in **flooding** frequency or severity due to sea level rise or precipitation changes
- Increased frequency of extreme **wind, wave or storm** conditions
- Changes in **sediment transport**, erosion and accretion
- Potential for changes in fog characteristics or other visibility issues
- Air and water **temperature** increases, ocean chemistry change
- Changes in **ice** cover

Why act? Ensure navigational safety, reduce downtime, protect business continuity

Action: publish **sector-specific technical adaptation guidance** for ports and inland waterways: PIANC Working Group 178



# PIANC WG 178



**Table 4.3**

**Indicative combinations of adaptation and resilience measures**

<b><i>Impact</i></b>	<b>Measure 1</b>	<b>Measure 2</b>	<b>Measure 3</b>
<i>Sea level rise leading to increased flooding of certain berths</i>	Modify berthing arrangements or schedules	Monitor asset condition and performance	Depending on residual life of berth, retrofit or replace with elevated structure
<i>Increased frequency of extreme wave and wind conditions exacerbating erosion</i>	Strengthen legal protection for remaining vegetated shorelines	Educate local communities in role of marsh or mangroves	Habitat restoration and re-planting projects; create breakwaters (e.g. using dredged material filled geo-tubes)
<i>Increased storm frequency impacting breakwater integrity</i>	Retrofit asset to maximum affordable protection	Prepare disaster risk reduction plan	Educate workforce, local community about risks and risk reduction plan



# NAVIGATING A CHANGING CLIMATE

Moving towards low carbon and resilient waterborne transport infrastructure



THE climate change conference for ports, harbours and inland waterways

**Brussels, Belgium**  
27<sup>th</sup> – 28<sup>th</sup> March 2017  
**Crowne Plaza – Le Palace**  
Ginestraat 3, 1210 Brussel  
0900 – 1730 each day

## Sponsors



**DEME**

Dredging, Environmental & Marine Engineering



**Jan De Nul**  
GROUP



#NavClimate @NavClimate  
[navclimate.pianc.org](http://navclimate.pianc.org)





# Transport infrastructure adaptation Quick Wins

Adaptation actions for existing infrastructure include:

- Build and embed **institutional capacity** to identify and manage climate-related risks
- Develop real-time **monitoring** and **early warning** systems; prepare and publicise contingency / disaster preparedness plans
- **Monitor** asset condition and prioritise **maintenance** to maximise adaptive capacity
- Develop and deliver programmes for climate-resilient **refurbishment**, retrofitting or renewal, using **nature-based solutions** where relevant



# Transport infrastructure adaptation Quick Wins

Adaptation actions for new infrastructure include:

- Promote **adaptive management** and **flexibility in infrastructure design** through revised design standards, planning processes and evaluation techniques
- Engage all stakeholders including those along the supply chain to exploit opportunities for **integration, interconnectivity** and improved **efficiency**
- Review and refocus business case development **and investment financing criteria** to facilitate delivery of climate-resilient infrastructure
- Facilitate information exchange, share evolving **good practice** and feed back into industry guidelines and standards



# Thanks for listening!



[navclimate.pianc.org](http://navclimate.pianc.org)  
[jan@janbrooke.co.uk](mailto:jan@janbrooke.co.uk)