Strategy for the adaptation of the Spanish port system

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Topics

- Institutional context
- Financial perspective
- Criteria and Methodology
- Observatory
1. Institutional context

**GOVERNANCE (state-owned ports):**

- Depending on the Ministry of Transport, Mobility and Urban Agenda
- Puertos del Estado (Spanish Port Agency):
  - Implementation of Government ports policy (Strategic Framework)
  - Coordination and control of efficiency
  - Participation in the approval of PAs Business Plan
- Port Authorities:
  - Provision of land and infrastructures
  - Regulation of access to port services and commercial activities
1. Institutional context

CC in the Strategic Framework (MITMA)

Adaptation Strategy (formal goals)

BY 2025:
- Adaptation Plans, approved
- CC Observatory, implemented

BY 2030:
- Adaptation Plans, implemented
1. Institutional context
1. Institutional context

- Observation networks
- Key climate variables
- Vulnerability
- KPI
- Integration into planning tools
- Infrastructure design recommendations
- Guidelines and Methodologies
- Impacts on trade
2.- Financial perspective

- **APPLICATIONS**
  - CAPEX
  - OPEX

- **SOURCES**
  - Operational incomes
  - Grants
  - Debt

- **Taxonomy**
  - EU Regulation

- **Transparency**
  - Financial Stability Board Recommendations

- **Risk assessment**
  - Credit rating Agencies

- **Insurance**
  - Insurance companies

PA Financial viability
3. - Criteria and Methodology

- Adaptation Plan (Measures)
- Observatory

Port System Level

National Level

PA Level

Measures (CC National Plan)

Practical Tools for monitoring and decision making

Common methodology
3.- Criteria and Methodology
3.- Criteria and Methodology

- Assessment on the acceptability of risks
- Identification of adaptation choices (pathways)
- Programming adaptation actions using a cost-benefit analysis approach, where applicable

- Climate Hazards: Analysis of non-stationary changes of extreme events (acute hazards) and mean regimes (chronical hazards)
- Exposure: Identification of Key Climate Variables for the analysis: waves, sea level, currents, wind, temperature, etc.
- Vulnerability: Describing impacts and degree of affection from climate hazards, based on exceeding operational and physical thresholds
- Consequences: Describing impacts in terms of Financial, Economical, Social and Environmental costs
3.- Criteria and Methodology

- Global
- Regional
- Coastal
- Port
- Thresholds
- Downstream services
3.- Criteria and Methodology

Setting and Implementing adaptation measures

Investment Plan
Budget
Procurement documents
Concession and License documents
Safety and Security plans
Business Plan

CAPEX / OPEX (PAs)
WORKS
OPERATIONS
FOLLOW-UP
4. - Observatory

- Observation of Key Climate Variables (to be developed from the current observing system)

- Collaboration with stakeholders is essential (building communities to register impacts and consequences)

- Confidentiality vs Transparency

Past/Present

Climate (Observations)

Impacts

Costs

Future

Climate (Scenarios)

Risks

- Outputs from climate models (to be developed from the current prediction system)

- End user applications
- Visualization
- Early warning systems

(to be developed by reference to current systems and applications)
5.- Final considerations

- To increase scientific and technical knowledge and production on climate variability and interactions with port infrastructure and activities, based on continuous collaboration
- To improve observation on both climate and impacts on ports, including AI
- To develop management tools for PAs and end user services
- To build communities to increase resilience to CC

- From an extensive knowledge on climate physics and modelling
- From one of the Europe largest ocean observation networks, including historical data since 1980
- From a large experience on operational oceanography providing climate observation and 72h prediction systems, including at port scale
- From the extensive development of downstream services to PAs and end users in the past 10 years
- From an intense and fruitful collaboration with the technical and scientific communities
Thank you