

European territorial cooperation for green and smart ports: the CLEAN BERTH, PROMARES, SUSPORT and DIGSEA projects

*Green and smart ports in the Adriatic Ionian Region.
The contribution of the European territorial cooperation between Italy, Croatia and Slovenia.*

Trieste, June 8th 2022

Decarbonisation – territorial challenges

- ✓ Maritime transport is the most sustainable way of transporting goods
- ✓ Ports as an important catalyst for economic growth



- ✗ Impact of port operations on air quality and CO₂ emissions
- ✗ Pollution and GHGs do not stop at borders
- ✗ Absence of coordinated mitigation measures



Need to reduce environmental impact of port operations by:

- ✓ Strengthening institutional capacity
- ✓ Coordinating a cross-border governance
- ✓ Developing a common model of environmental planning and energy efficiency
- ✓ Implementing concrete actions

Digitalisation – territorial challenges

- ✓ In terms of maritime transport, Italy, Slovenia and Croatia are among the leading regions at European level, hosting a large number of ports, some of them important hubs for goods and passenger transportation



Yet, the maritime sectors of Italy, Slovenia and Croatia face similar challenges, hindering the development of efficient maritime and multimodal freight transport and logistics chains :

- ✗ Port and railway connections – infrastructures and services
- ✗ Need to coordinate with several stakeholders from the public (EU, national ministries, customs) and private sector (terminal operators, logistic companies)
- ✗ Need to streamline inbound and outbound traffic flows, ports as gateways



- ✓ Need to focus on soft measures (ICT) to improve the ports' competitiveness and coordination

Four EU projects

Decarbonisation:

- ✓ **CLEAN BERTH**
 - ✓ Interreg Italy-Slovenia
 - ✓ 03/2020-08/2022
- ✓ **SUSPORT**
 - ✓ Interreg Italy-Croatia
 - ✓ 07/2020-06/2023

Total budget: 8.023.842,06 €
ERDF: 6.820.265,75 €

Digitalisation:

- ✓ **PROMARES**
 - ✓ Interreg Italy-Croatia
 - ✓ 01/2019-06/2022
- ✓ **DIGSEA**
 - ✓ Interreg Italy-Croatia
 - ✓ 04/2022-06/2023

Total budget: 11.401.472,06 €
ERDF: 9.691.251,25 €

Total budget: 3.377.630,00 €
ERDF: 2.870.985,50 €

Several good partners



- ✓ Most ports of Italy, Slovenia and Croatia, from Bari to Dubrovnik
- ✓ Universities and research centres
- ✓ Chambers of Commerce
- ✓ Regional administration



Wide geographical and institutional coverage in a «sea of intimacy»
(Pregrad Matvejević,
Mediterranski brevijar)

Decarbonisation - analysis

- ✓ AS-IS analysis → cross-border carbon footprint
- ✓ TO-BE scenario → action plans + cross-border strategies



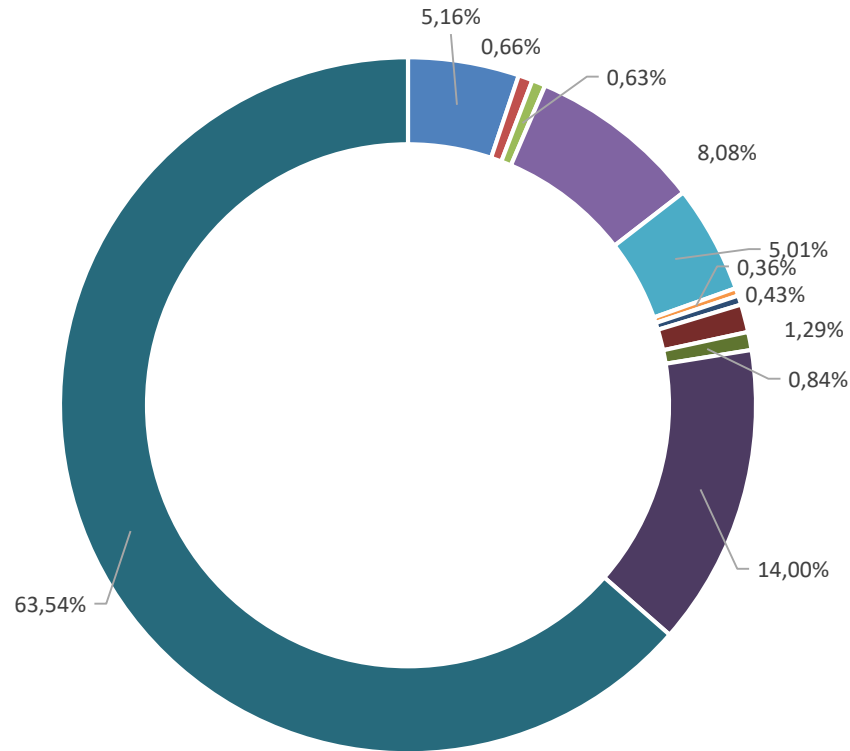
Applying the same methodologies in different regions over the same period of time allowed project partners to:

- ✓ reach a deeper understanding of common issues
 - ✓ compare strategies and results

in a wider context, among ports of three countries

Decarbonisation - analysis

CO₂eq emissions in ports of Italy, Slovenia and Croatia (2019)



- Electric energy
- Heating
- Service vehicles
- Operational port vehicles
- Heavy vehicles
- Railway tractors
- Other
- Naval port service
- Anchored ships
- Ships manoeuvring
- Moored ships

Decarbonisation - planning

Given the source of CO₂eq emissions, ports have jointly identified the following measures:

1. Onshore power supply
2. Alternative fuels facilities
3. Retrofit of operational port vehicles / service vehicles / railway tractors (LNG, H₂)
4. Installation of sensors for air quality
5. Renovation of buildings for energy saving
6. Replacement of lighting systems
7. e-mobility

Decarbonisation - testing

Project partners have implemented pilot actions generating concrete positive impacts in the short and medium term and ensuring mutual learning, e.g.:

1. pre-investment studies for on-shore power supply
2. replacement of the existing lightning system with LED light bulbs
3. installation of photovoltaic and solar thermal systems
4. implementation of e-mobility measures – purchase of EVs and installation of charging stations
5. improvement of the environmental performance of port buildings
6. installation of sensors and stations to monitor noise, air and water quality

Digitalisation – analysis

- ✓ AS-IS analysis → territorial needs assessments and cross-border assessment
- ✓ TO-BE scenario → cross-border action plan and strategy



in this case, the same methodologies were applied to the COMODALCE project (Enhancing COordination on multiMODAL freight transport in CE), co-financed by the Interreg Central Europe Programme, enabling cross-checks, comparisons, benchmarking with ports and inland terminals from the Adriatic Sea to the Baltic Sea

Digitalisation – analysis

Ports decided to focus on IT applications, because:

Physically connected

- ✓ Considerable financial investments
- ✓ Medium and long-term time frame
- ✓ Necessary to accommodate increasing transport demand

ICT integrated

- ✓ Relatively low financial investments
- ✓ Short and medium-term time frame
- ✓ Optimisation of existing assets and infrastructures

Create a wide port community

Enhance port competitiveness

Increase attractiveness for potential investors

Improve environmental performance

Digitalisation – planning

Main innovations to be tested by ports in the coming years include:

- ✓ Interoperability with IT systems of RUs to further support modal shift
- ✓ Slot booking for road transport
- ✓ Digital twins
- ✓ experimental use of (real) blockchain

Digitalisation – testing

Project partners have implemented pilot actions streamlining traffic flows in/out the ports/inland terminals through ICT, e.g.

1. Installation of a rail OCR gate connected to the monitoring systems and IT platform;
2. Development of new PCS modules devoted to managing road traffic flows to/from the port and between the port and external buffer areas
3. Enhancement of the railway telematics system for shunting operations and its integration with PCS and IT systems of other multimodal transport operators
4. Improvement of control systems at port gates, allowing supervision and optimisation of road traffic and multimodal operations
5. Enhancement of the PCS and its security-related features

Some remarks

- ✓ Decarbonisation and digitalisation are the backbone of the EU Commission's 2021-2027 strategic plans and multi-annual financial framework
- ✓ Territorial cooperation plays a pivotal role in
 - increasing competences
 - mutual learning
 - joint medium and long-term planning
- ✓ and is the key for concretely applying macroregional strategies \leftrightarrow PROMARES and SUSPORT have been labelled by EUSAIR TSG2 given the coherence with the EUSAIR flagship project "Adriatic-Ionian green/smart port hubs concept"
- ✓ What topics for the future?
 - ✓ How to generate more renewable energy, for decarbonisation and geopolitical reasons (energy security)?
 - ✓ More interoperability between different IT systems entails greater risks: how to enhance cybersecurity and cyber resilience of critical transport infrastructure and supply chains?

Thank you for your kind attention!

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