



European Research for Maritime Eco(nomic) clusters governance Strategy - ERMES

Targeted Analysis

Synthesis report

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This **targeted analysis** activity is conducted within the framework of the ESPON 2020 Cooperation Programme.

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The final version of the report will be published as soon as approved.

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Introduction

Urban-maritime regions face a broad range of challenges, from the transition to more sustainable practices to the increasing demand for digitalisation. To tackle these challenges, stakeholders in urban-maritime regions need a shared and integrated strategy that can best be developed with the help of an eco-cluster. That is the main outcome of the ESPON ERMES Targeted Analysis (European Research for Maritime Eco(nomic) clusters governance Strategy – ERMES).

The aim of ERMES is to analyse the **urban-maritime interfaces and cluster development potential** in four regions: The Province of Liguria (Italy), Crete (Greece), Malta and the Province of East Flanders (Belgium).. To do this the project team developed extensive descriptions of the stakeholder regions in terms of their economic activities, governance structure and overall cluster potential. Per region, the project team also established development scenarios towards 2030. Different types of developments and actions are needed in the urban-maritime regions to realise these potential scenarios. A next step was to assess to what extent the current urban-maritime interface of each region would enable the realisation of the established scenario. Challenges were identified for the regions which might hinder their progress. Finally, the project team developed recommendations on how to deal with these challenges, in particular related to cluster development.

It became clear from our study that the four urban-maritime regions face many similar challenges in the upcoming ten years. The transition to more sustainable practices and the use of alternative fuels are trends that apply to all regions. The trends of increasing demand for digitalisation, innovation and more efficient modes of operation are similarly overarching. The need for efficient and sustainable transport to/from the ports' hinterlands remains an important challenge. We can even go so far to suggest that these trends coexist and that for all ports the adequate and simultaneous development in these fields is a prerequisite for a successful future.

1.1 Research questions

The study centres around a set of four research questions, some of which encapsulate more detailed questions which have been formulated at a lower level.

1. **Considering the actions undertaken within cooperation networks among city ports, what are the territorial benefits that cluster collaboration can bring in the stakeholders' territories?**
2. **To what extent and how could clusters contribute to the development of urban-maritime regions?**
 - How can they benefit insular areas that combine a high number of territorial disparities such as described in Article 174? ¹

¹ Of the Treaty on the Functioning of the European Union. Article 174 states the following: *'In order to promote its overall harmonious development, the Union shall develop and pursue its actions leading to*

- What kind of actions/policies are needed to ensure the sustainable and integrated management of economic clusters in coastal regions and island territories?
- 3. Are economic clusters able to support local business development in urban-maritime regions?**
- What are the main economic sectors affected?
 - Which schemes can be used to investigate how the agglomeration of firms and related actors has an impact on the regional maritime economy (jobs/business creation and sustainable growth)?
- 4. How can framework conditions be created in stakeholders' coastal regions for strengthening the relationship between existing industrial-services assets and strategical infrastructure development?**
- Do economic clusters contribute to the improvement of networking and cooperation of urban-maritime regions?
 - Which opportunities do citizens benefit from in the implementation of cluster policies?

1.2 Research goals

The following research goals were defined for the ERMES project:

1. To define regional-specific urban-maritime spatial planning scenarios, involving triple helix actors, policy-makers and city-port authorities;
2. To provide policy recommendations for the elaboration of strategies for urban-maritime regions;
3. To contribute to the production of an Atlas/Roadmap on future polycentric urban-maritime port regions in Europe.

the strengthening of its economic, social and territorial cohesion. In particular, the Union shall aim at reducing disparities between the levels of development of the various regions and the backwardness of the least favoured regions. Among the regions concerned, particular attention shall be paid to rural areas, areas affected by industrial transition, and regions which suffer from severe and permanent natural or demographic handicaps such as the northernmost regions with very low population density and island, cross-border and mountain regions.'

2 Urban-maritime regions in Europe

Europe's coastal regions show many differences and similarities. Coastal areas in the northwest of Europe are home to some of the biggest ports in the world in terms of processed cargo. Ports in the Mediterranean region are generally smaller in size, but play an important role in passenger transport. Some ports focus on bunkering services, whereas others specialise in container transshipment or cruises. Ports on mainland Europe service a large hinterland and island ports often cater for the local market.

2.1 Imports and exports of European major ports

This map provides an overview of the imports and exports of major European ports. The ports along the North Sea focus primarily on the transport of goods. The largest of European seaports are located between Le Havre and Hamburg. These seaports are the main suppliers for the European continent. In particular, the Dutch, Belgian and German ports are large, each focusing on specific commodities.

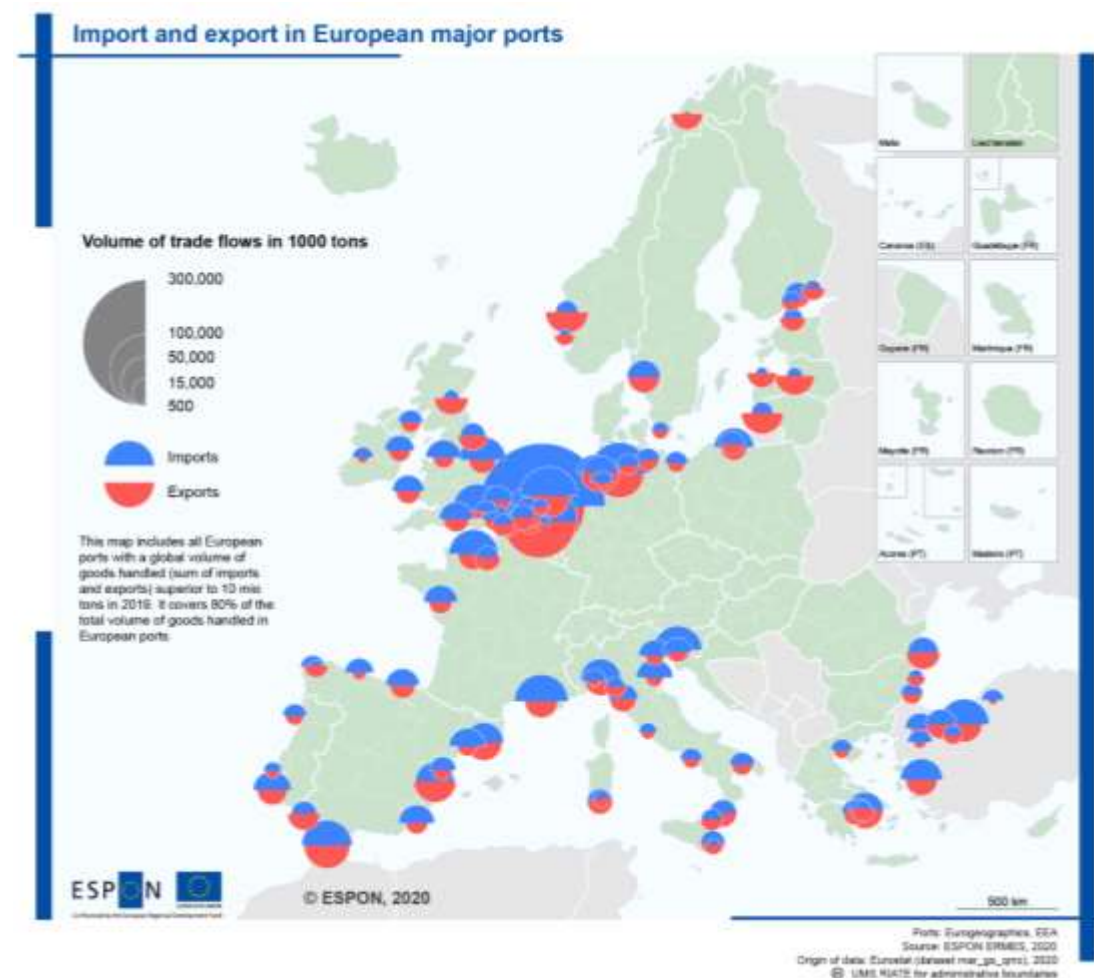
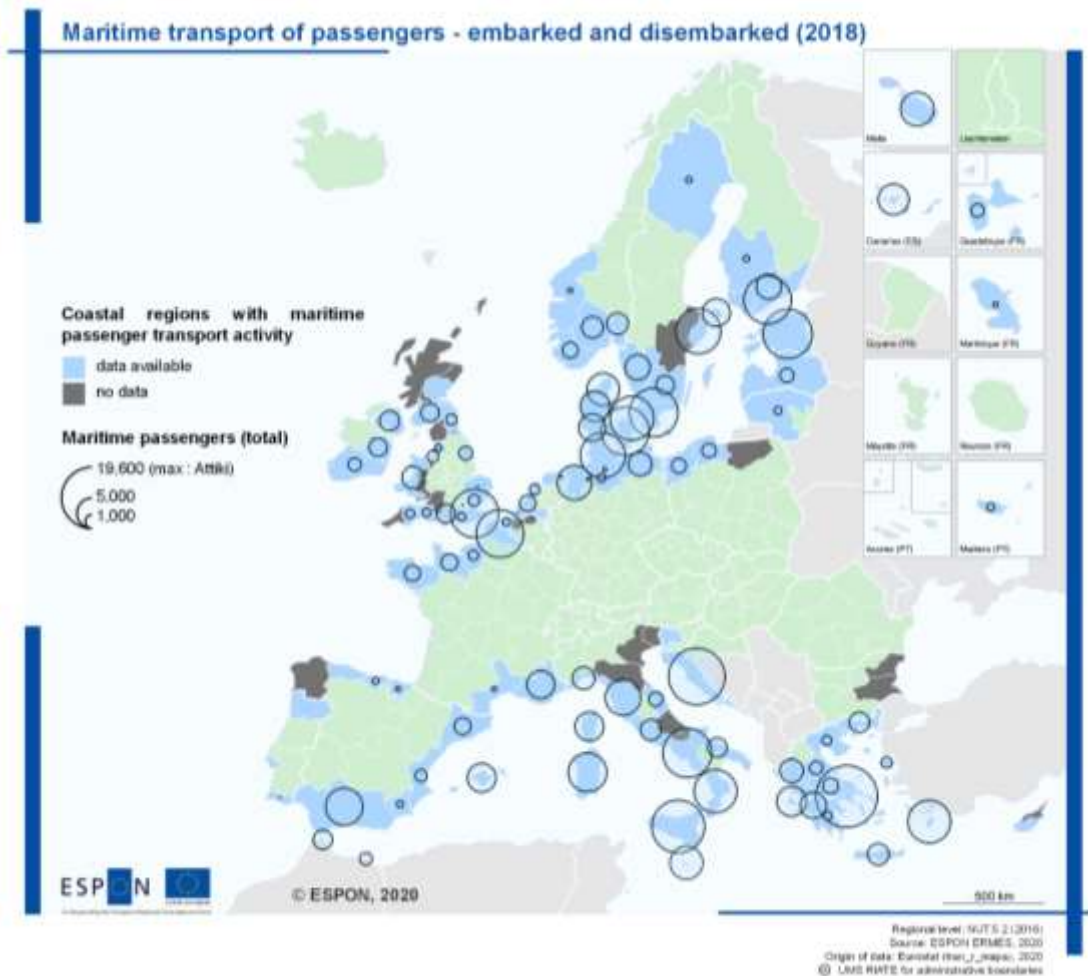


Figure 2.1 Imports and exports of European major ports

2.2 Maritime transport of passengers

The second map (below) provides an overview of the maritime transport of passengers of major European ports. The number of passengers passing through EU ports increased by 5.6 % between 2017 and 2018, to almost 410 million passengers. With almost 85 million passengers passing through its ports, Italy was the major seaborne passenger country in Europe in 2018, followed by Greece with 73 million passengers. These two leading seaborne passenger countries had a combined share of more than one third of the total number of seaborne passengers embarking and disembarking in EU Member States.

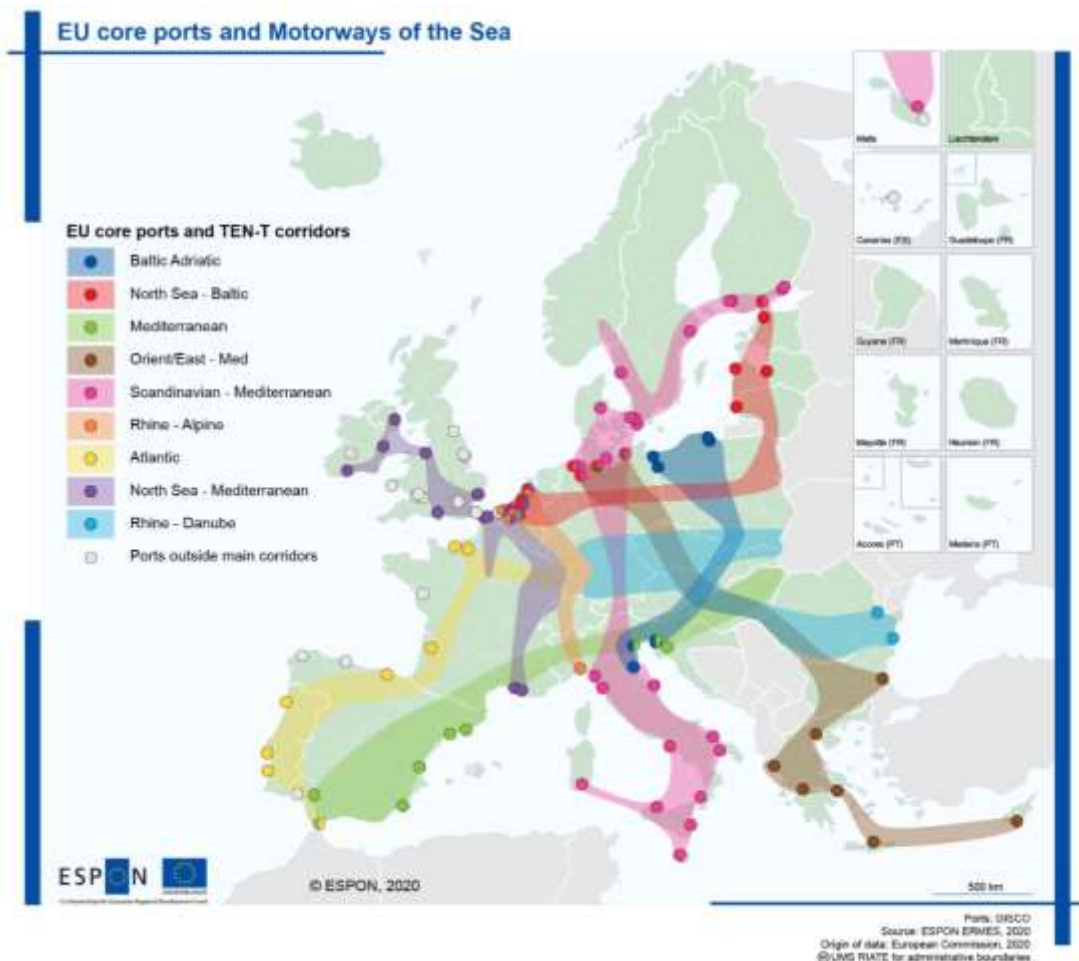
Figure 2.2 Maritime transport of passengers in Europe



2.3 EU core ports and Motorways of the Sea

The third map provided below depicts the EU core ports and their inter-connectivity through the nine Trans-European Networks (TEN-T) corridors and the Motorways of the Sea. The map shows that all four stakeholder regions are connected to one or multiple TEN-T corridors. The rationale behind the TEN-T network is that the improvement of connections between European regions will strengthen economic development.

Figure 2.3 EU core ports, TEN-T corridors and Motorways of the Sea



2.4

Territorial and economic readiness for eco-cluster development

The fourth and final map (see below) provides an overview of the territorial and economic ‘readiness’ for eco-cluster development. A typology for the contextual factors of urban-maritime eco-cluster development was developed by the project team to determine the readiness for the development of innovative clusters in the EU’s coastal regions.

The map shows that coastal regions situated in the Le Havre-Hamburg region have high readiness scores. Regions appearing to be weaker can be seen on the Iberian Peninsula: Italy, Greece and East Europe. However, there are important exceptions to this trend to be noted.

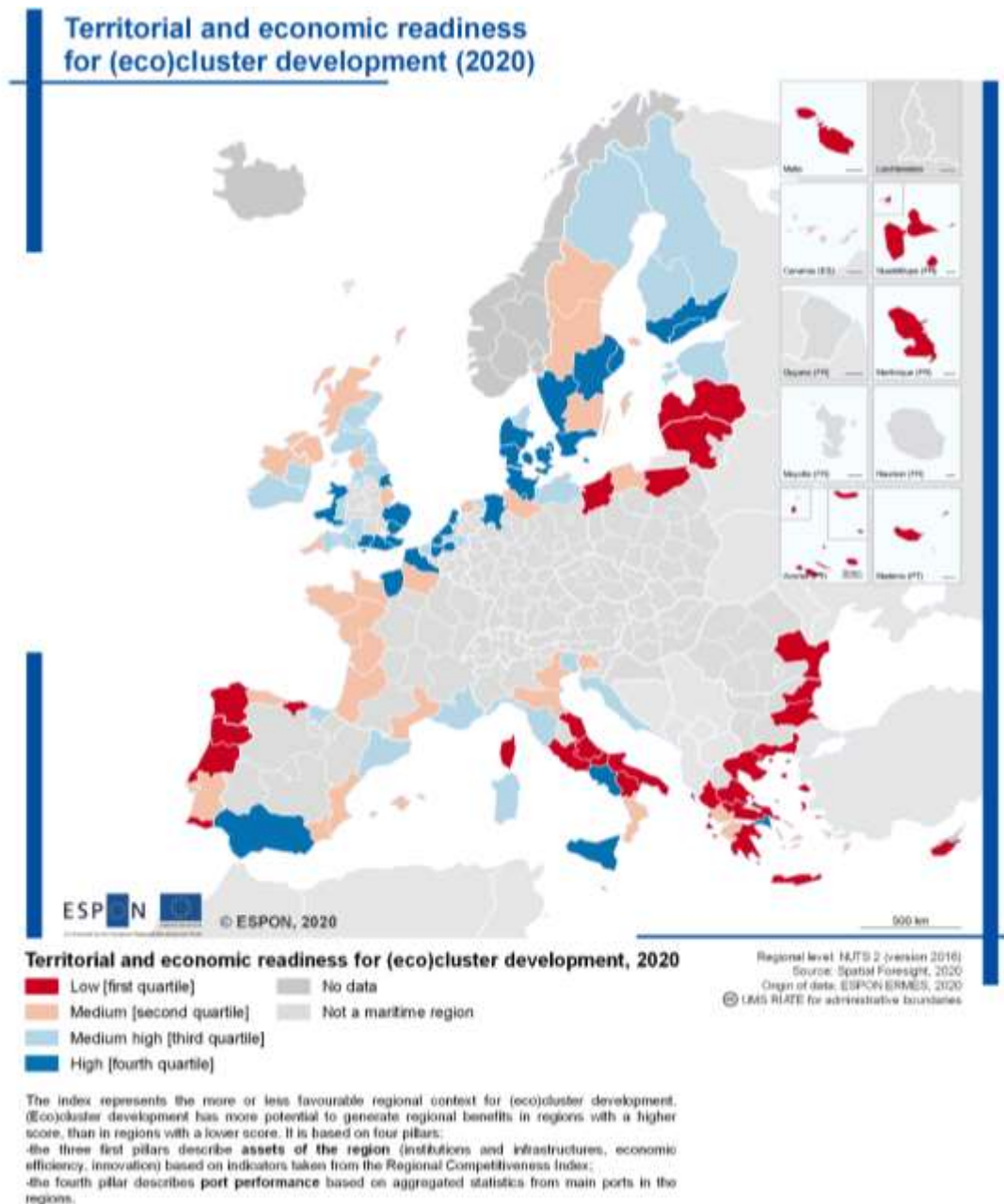


Figure 2.4 Territorial and economic readiness for eco-cluster development

3 Case study outcomes

Each of the four stakeholder regions involved in the ERMES project has a unique urban-maritime context. It is therefore fitting that region-specific recommendations are developed for the purpose of this study. The full case study outcomes are presented in separate case study reports.

3.1 Liguria

The region of Liguria houses the largest port in Italy. With strong connections to the industrial heartlands of northern Italy and the Alpine region, the Ports of Genoa and other ports in the Western Ligurian Port Authority are catering to a large hinterland. There is a need for an integrated approach towards optimising port operations, whilst at the same time promoting (environmentally) sustainable solutions. Blue and green growth strategies exist in the region, but there is not yet a shared approach.

The following recommendations were formulated for Liguria:

- Recommendation 1) *Develop an eco-cluster organisation to stimulate an integrated and sustainable strategy;*
- Recommendation 2) *Ensure that the strategy is monitored and adapted as the situation evolves;*
- Recommendation 3) *Stimulate closer collaboration and specialisation between the two Ligurian port authorities;*
- Recommendation 4) *Connect to the Rhine – Alpine and Scandinavian – Mediterranean Rail Freight Corridors;*
- Recommendation 5) *Create opportunities for innovation towards integrated and sustainable solutions;*
- Recommendation 6) *Facilitate trainings to ensure workers can adapt to new jobs;*
- Recommendation 7) *Decide upon a course for alternative fuel solutions.*

3.2 East Flanders

The stakeholder region of East Flanders is unique, given the cross-border nature of North Sea Port. It is characterised by a large hinterland and is a multimodal port. It has two large port operators (Volvo and Arcelor Mittal). The region is characterised by a high accountability of government services and the port has universities in close proximity.

The following recommendations were formulated for East Flanders:

- Recommendation 1) *Develop a common Port Community System (PCS);*
- Recommendation 2) *The port authority should take the initiative in the development of a common PCS;*
- Recommendation 3) *Develop a strategy on data ownership;*
- Recommendation 4) *Develop a qualified labour force to address the challenge;*
- Recommendation 5) *Intensify the construction of pipeline infrastructure;*
- Recommendation 6) *Increase railroad connectivity;*

- Recommendation 7) *Intensify collaboration with universities and research institutions to stimulate research and development.*

3.3 Malta

Malta is unique, given its island nature and therefore limited hinterland. Its maritime activity centres around the two main Malta ports, Valletta and Marsaxlokk. Both are capable of providing a comprehensive package of maritime services including towage, salvage, pilotage, victualing and provisions of all kinds of stores and supplies. Ports are constrained by the multiple uses of the surrounding land. Main connections are overused, vulnerable to congestion and involve negative environmental effects.

The following recommendations were formulated for Malta:

- Recommendation 1) *Improve the connectivity;*
- Recommendation 2) *Increase the effectiveness of the communications channels;*
- Recommendation 3) *Increase transport stakeholder engagement;*
- Recommendation 4) *Consider future development potential;*
- Recommendation 5) *Public transport as an alternative to private vehicles;*
- Recommendation 6) *All sustainability measures should be aligned;*
- Recommendation 7) *Establish a proper and continuous monitoring of the strategy development;*
- Recommendation 8) *Environmental externalities of transport developments should be considered and diminished;*
- Recommendation 9) *Innovation should further be developed;*
- Recommendation 10) *Enhancing the public and private investment for Green Energies and sustainable implementations.*

3.4 Crete

Located around 160 km from the Greek mainland, the Cretan economy is predominantly based on services and tourism with agriculture also playing an important role. The Port of Heraklion is located in the central Crete, serving around 2 million passengers per year. Hinterland connections are limited to road and short sea shipping.

The following recommendations were formulated for Crete:

- Recommendation 1) *Create a comprehensive roadmap for the development of the Port of Heraklion;*
- Recommendation 2) *Ensure that stakeholders are involved in decision making;*
- Recommendation 3) *Develop a functional, well-designed urban port region cluster;*
- Recommendation 4) *Map the financing opportunities;*
- Recommendation 5) *Take pre-emptive approach to over-tourism;*
- Recommendation 6) *Develop an integrated sustainability strategy;*
- Recommendation 7) *Monitor the sustainability progress.*

4 Final conclusions

To conclude the ERMES Targeted Analysis, we refer back to the main questions in the Terms of Reference that were also introduced in the introduction of this final report. Because of the overlap between questions, we have written overarching conclusions on two topics; the territorial benefits of cluster collaboration (paragraph 4.1), and; the way in which eco-clusters can be organised to stimulate territorial benefits (paragraph 4.2).

4.1 Territorial benefits of cluster collaboration

The main territorial benefits of cluster collaboration can be roughly divided in two main fields: the prevention and mitigation of negative externalities of maritime activities, and the stimulation of factors that trigger economic development. With regard to the negative externalities, the most obvious example of this is the impact that current port operations have on the direct environment. In all stakeholder regions, a need for more (environmentally) sustainable practices in port operations were mentioned as a key challenge. The benefits of more sustainable practices land in the full territory of the urban-maritime region (and beyond). At the same time, the negative externalities caused by for example the extensive use of fossil fuels also land in the full territory of the urban-maritime region. For a real transition to sustainable practices, it is important that all relevant port actors are involved. Moreover, sharing knowledge and experiences through cluster collaboration can help to facilitate this transition.

In economic terms, cluster collaboration can put in place a favourable business ecosystem for innovation and entrepreneurship in which new winners can arise and hence support the development of new value chains and emerging industries. The economic drivers of such cooperation can vary extensively and include different aims. For example, to gain a stronger competitive position to attract and retain traffic flows, better access to capital, or improved, general control over the logistics chain. Through collaboration in an eco-cluster, these two aims can be combined, to strive for economic development in an environmentally and ecologically responsible way.

Specific examples of areas in which stakeholders' territories can benefit from cluster collaboration are mentioned under the stakeholder recommendations in Chapter 7 of the final report.

4.2 Organisation of eco-clusters

4.2.1 Eco-clustering in insular areas

Island countries share some common features and vulnerabilities to future territorial developments, such as insularity, geographic remoteness, economic dependences, population size and available area for development. Of the four stakeholder regions studied in this study, Malta and Crete are in part characterised by their insular nature. The disconnection from mainland gives rise to multiple challenges, which can be mitigated or exacerbated by other physical and social factors present on the island. These are identified as follows²:

- **Challenges in transport and trade logistics**
- **Market accessibility & Economies of Scale**
- **Geographic remoteness & Economic Dependences**
- **Vulnerability to external shocks**
- **Access to funds**
- **Access to technology and know-how**

The level of exposure to these challenges are dependent on context-specific factors, such as the size, population, location, urban endowment and institutional status of the island.

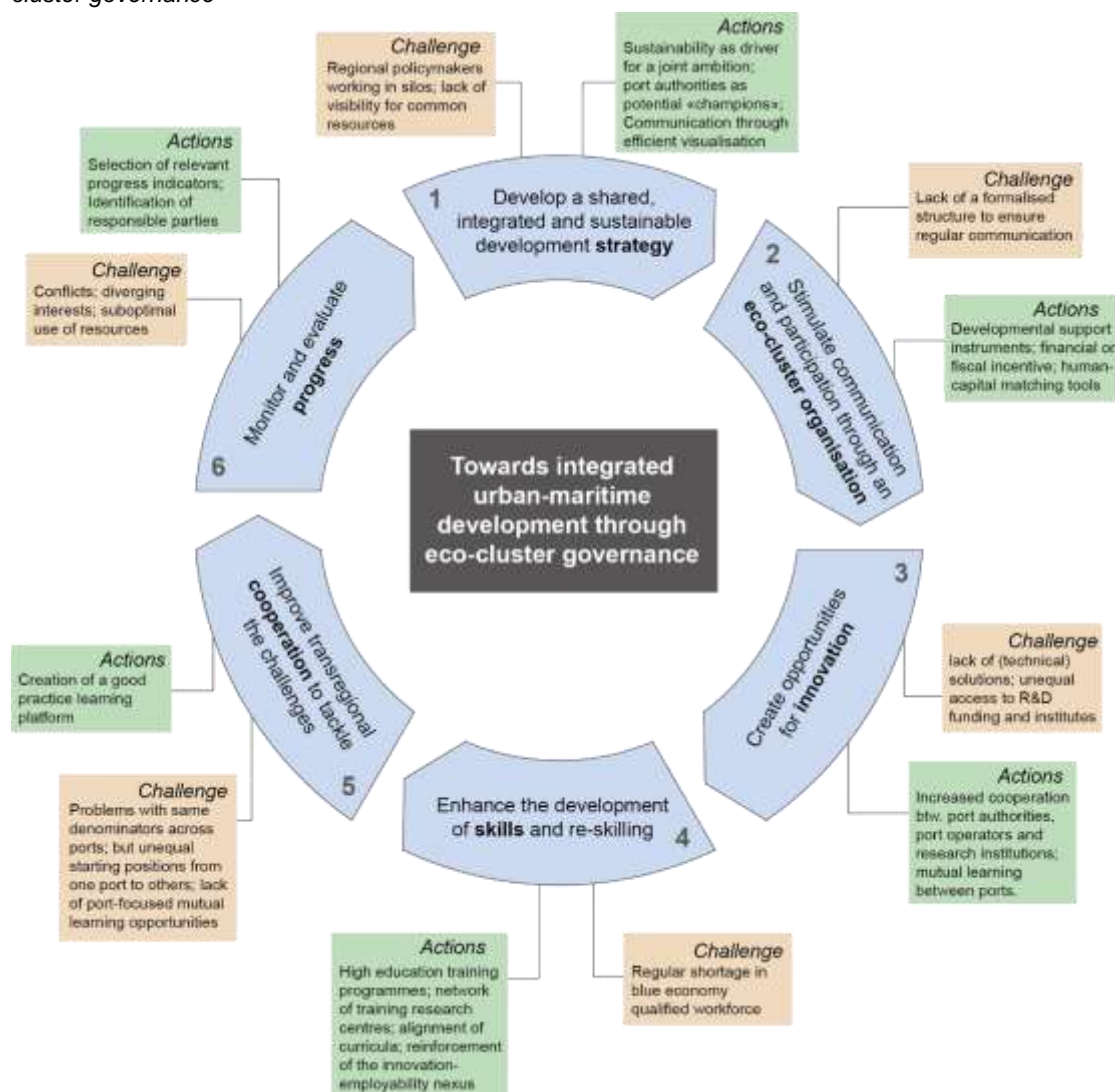
Collaboration through an eco-cluster can help insular regions to develop integrated approaches to tackle the challenges mentioned above. There is a strong need of integrated place-based strategies to promote the territorial potential of islands based on their unique characteristics, of enhancing economic resilience and avoiding compromising the flexibility that allows to adapt for external shocks. Collaboration, innovation and digital connectivity are seen as critical tools to allow for islands to make use of their inherent opportunities.

4.2.2 Actions and policies for eco-clusters

To ensure the successful management of eco-clusters in coastal regions and island territories, a range of elements are necessary. In this study, these elements have been encapsulated in the 'Horizontal Recommendations' (Chapter 7.2 of the final report). They are summarised below:

² ESPON The Development of the Islands – European Islands and Cohesion Policy (EUROISLANDS). Interim Report 2013. Available at: https://www.espon.eu/sites/default/files/attachments/inception_report_full_version.pdf

Figure 4.1 Horizontal recommendations towards balanced urban-maritime development through eco-cluster governance



Recommendation 1) Develop a shared, integrated and sustainable development strategy

To unleash the socio-economic potential that the port and maritime sector can offer to a region, it is imperative that **relevant stakeholders (public, private, academic, etc.) commit to a shared, integrated and sustainable ambition**. This will provide a vision for actions to be targeted towards, allowing for the alignment of resources that stakeholders can offer to benefit the development of the region.

Recommendation 2) Stimulate communication and participation through an eco-cluster organisation

To facilitate the development of a joint and integrated strategy as described in recommendation 1, clear communication between the different types of actors in a region is

essential. The development of an eco-cluster organisation can address this challenge. In this eco-cluster organisation, port authorities, industry, the private sector, universities and government should be represented to jointly decide upon a strategy towards environmentally sustainable growth in the region. This eco-cluster organisation can also facilitate additional activities, such as capacity building activities or knowledge sharing events.

Recommendation 3) Create opportunities for innovation

In order to increase competitiveness and encourage effort towards sustainability, significant investments in innovation in a broad range of areas is required in European ports. Examples where innovation is most needed include, but are not limited to, digitalisation, greener fuels, data management, smart transport. This study has shown that significant differences exist between urban-maritime regions. There is a need for increased cooperation between port authorities, port operators and research institutions in all stakeholder regions in order to increase opportunities for innovation. However, the existing level of innovation, and the means for improving opportunities for innovation, are very much dependent on local contexts.

Recommendation 4) Enhance the development of skills and re-skilling

Sustainable maritime transport is an essential source of economic activity. At the same time, the education of new workers and the updating of skills of existing workers is key to shaping future economy possibilities. Urban-maritime regions should enhance and promote opportunities for 'blue' (i.e. marine and maritime) careers by developing skills, exchanging knowledge and valorising research towards sustainability. They should also aim to develop new curricula and increase employability in the marine and maritime sectors. Urban-maritime regions should also enhance the shared knowledge through higher education as well as research and innovation.

Recommendation 5) Improve transregional cooperation to tackle the challenges

It is recommended that a transregional system of cooperation is created for ports/maritime regions to address the issues mentioned before. For regions with a less favourable starting position, this would enable a quick acceleration in development as good practices (mimicked from more advanced ports/maritime regions) are adopted. This would provide the regions with the possibility to reinforce their position during the implementation phase of the European Green Deal and related instruments (e.g. Connecting Europe Facility).

Recommendation 6) Monitor and evaluate progress

In order to achieve the goals and intended benefits of any strategy, a structured monitoring plan is necessary to ensure that progress is made within the schedule of the timeline and the boundaries of dedicated resources. The monitoring plan should also allow for necessary adjustments to the actions of the strategy in the event of a delay.

4.3 Suggestions for further research

Below we provide some suggestions for further research. The suggestions are based on additional questions that arose during the implementation of the ERMES project.

- The project team suggest to further examine the degree of transferability of the eco-cluster concept to sectors or regions other than urban-maritime regions. This ERMES study focused on urban-maritime regions in particular, whereas the eco-cluster concept can also provide relevant insights for other regions in Europe. In this context, it could be worthwhile to redevelop the eco-cluster index that was developed in the framework of this ERMES study;
- One of the main recommendations of this study was to stimulate and facilitate transnational cooperation to tackle the challenges that many regions face. As such, the needs for cooperation and potential barriers for cooperation can be further defined, and a handbook on transnational cooperation could be of added value for many European regions;
- All urban-maritime regions face a different type of governance structure. In some countries, port authorities have very little influence whereas in other areas, they are the main policy making authority for maritime activities. Governance systems largely determine the policy making process. With the use of a typology for different types of governance structures, recommendations could be formulated and adapted to be more specific to these structures – making it easier to transfer recommendations across regions with similar governance structures;
- The concept and implications of insularity have been addressed to some extent in this study, but they are worthy of further extensive examination. Consideration of the governance structure would be highly relevant when perusing this. For example, further may wish to address the questions of '*is the island part of a larger nation (e.g. Crete), or is the island a self-standing country (e.g. Malta)?*' and '*what does this mean in terms of opportunities and challenges for eco-cluster development?*';
- The current pandemic has had wide implications for the urban-maritime sector, in terms of the transport of both goods and people as well as associated economic activities (e.g. on tourism). It is as of this moment still unclear what the long-term impacts of the pandemic will be on the developments of the maritime sector. It would be worthwhile to further examine this in a separate study.



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