ESPON

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

Targeted Analysis

Case study report Malta

Case study report Malta

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Case study report Malta

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1 Introduction

1.1 Background

With this report we would like to present the final outcomes of the ESPON Targeted Analysis "*European Research for Maritime Economic clusters governance Strategy*" (ERMES) for the stakeholder region of Malta.

The study started on the 11th of March 2020 and covered a period of twelve months. The study focuses on four stakeholder regions: The Province of Liguria (Italy), Crete (Greece), Malta and the Province of East-Flanders (Belgium). Its aim is to analyse the urban-maritime interfaces and cluster development potentials in the stakeholder's regions; to define regional-specific urban-maritime spatial planning scenarios, involving triple helix actors, policy-makers and city-port authorities; to provide policy recommendations for the elaboration of strategies for urban maritime regions; and to contribute to the production of an Atlas/Roadmap on future polycentric urban-maritime port regions in Europe.

The study centres around a set of four research questions:

- Considering the actions undertaken within cooperation networks among city ports, what are the territorial benefits that cluster collaboration can bring in the stakeholders' territories?
- 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]
  - What kind of actions/policies are needed to ensure a sustainable and integrated management of economic clusters in coastal regions and island territories?
- Are economic clusters able to support local business development in urban-maritime regions?
  - Which are the main economic sectors affected?
  - Which schemes can be used to investigate how the agglomeration of firms and related actors has a positive impact on the regional maritime economy (jobs/business creation and sustainable growth)?

[1] Article 174 of the Treaty for the European Union reads: 'In order to promote its overall harmonious development, the Union shall develop and pursue its actions leading to 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.'

- 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 increase the networking and cooperation of urban maritime regions?
  - Which opportunities do citizens benefit from cluster policies implementation?

1.2 Interim phase

The information in this document was gathered in the period between March and December 2020. During this period, the following activities were carried out by the consortium:

- Qualitative-quantitative analysis of the urban-maritime interface in Malta
- Scoping interviews with a selection of Maltese stakeholders that represent businesses, government and other organisations linked to maritime activities in Malta
- An extensive survey among a selection of Maltese stakeholders
- A virtual scenario building workshop that took place on 4 November
- Expert analysis of the different inputs by the consortium
- Development of the draft case study report

During the interim phase Chapters 2 and 3, on the urban-maritime interfaces and the urban-maritime scenarios, have largely been developed. Additionally, a draft version of Chapter 4, focusing on guidance and recommendations, was produced in the interim phase.

1.3 Towards the final document

Between December 2020 and March 2021, additional information was gathered in order to finalize the case study report. During this period, the following activities were carried out by the consortium:

- A meeting with the Steering group was organised in order to discuss the feedback on the interim report
- Additional interviews have been conducted with a selection with stakeholders in order to further develop and refine the guidance and recommendations formulated in the interim report.
- A horizontal workshop with stakeholders from all four regions was organised on the 11th of February. During this workshop, the overarching recommendations that were identified in the interim report were validated.

Based on the feedback that was received on the interim report, Chapter 2 and 3 have been fine-tuned. Additionally, Chapter 4 on guidance and recommendations was further developed based on the additional interviews and further research.

2 Urban-maritime interfaces in Malta

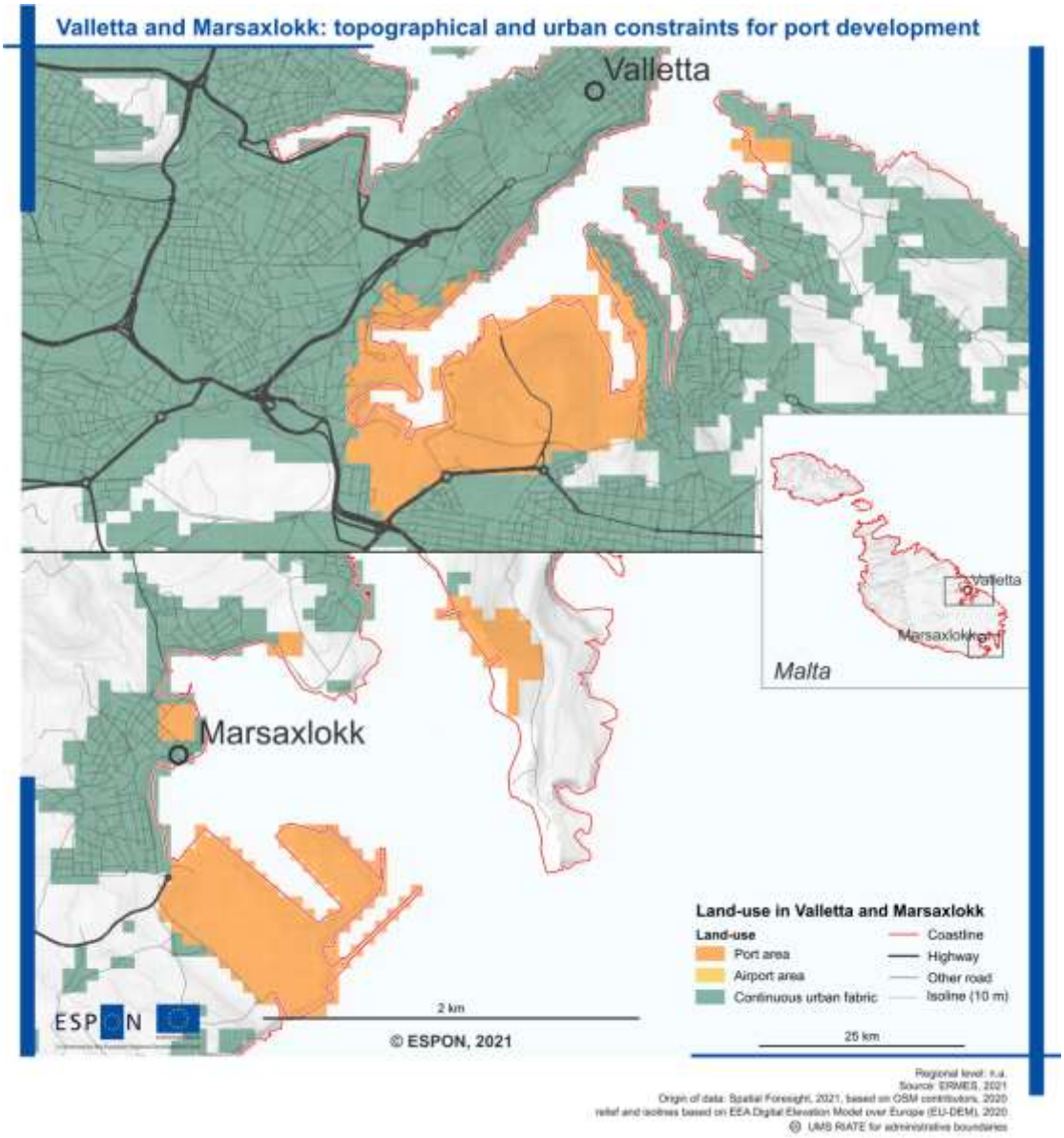
2.1 Port and hinterland structure

Regional aspects

Malta is located in the centre of the Mediterranean Sea just south of Sicily. The Maltese archipelago consists of three islands: Malta, Gozo and Comino. Their total population is approximately 490,000.[2] The largest island of the group is Malta from which the archipelago takes its name and which accounts for just over 90.5% of the population. Valletta, the capital, is the cultural, administrative and commercial centre of the archipelago.

[2] NSO Press Release NR108/2019

Figure 1 Topographical and urban constraints for port development around Valletta & Marsaxlokk



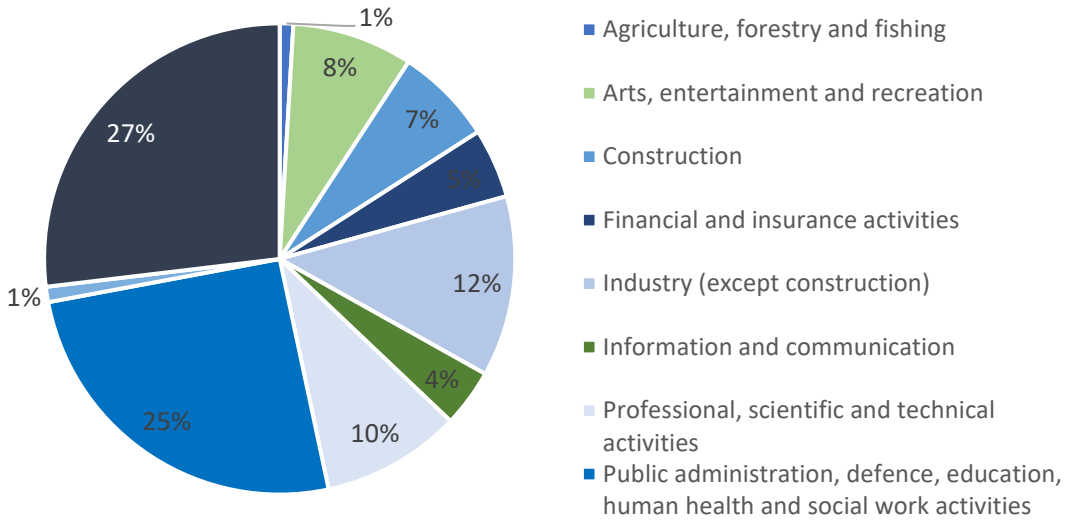
Economic structure of the region

The economic size (measured in GDP) of Malta region is equal to roughly €12.4 billion. The region with the most economic activity is Malta (MT001) with a GDP of roughly €11.8 billion (equal to 95% of Malta). The total added value in the region has grown continuously from the year 2000 onwards with 260% towards €10.4 billion.

Total employment in Malta amounts to roughly 250.000 people. Most of the workforce is active in in the field of (1) wholesale and retail trade, transport, accommodation and food service activities (roughly 66.000 people); (2) public administration, defence, education, human health

and social work activities (63.000 people) and (3) industry (30.000 people). Figure 2 presents employment by the economic activity in Malta.

Figure 2 Employment by economic activity in Malta



Source: Eurostat (2020), Employment by age, economic activity and NUTS 2 regions [lfst_r_lfe2en2]

A number of developments have been made over the years to the harbour regions given its economic importance. Most of these developments are listed in the Grand Harbour report which was published in 2007 by MIMCOL. In addition, the Planning Authority has published the local plan for the Grand Harbour which outlines a number of developments associated with the commercial, industrial and dock areas, passenger, leisure and tourism and other related services around the harbour.

In the following section, a more detailed description of the port area and maritime indicators in the region is provided.

Port characteristics

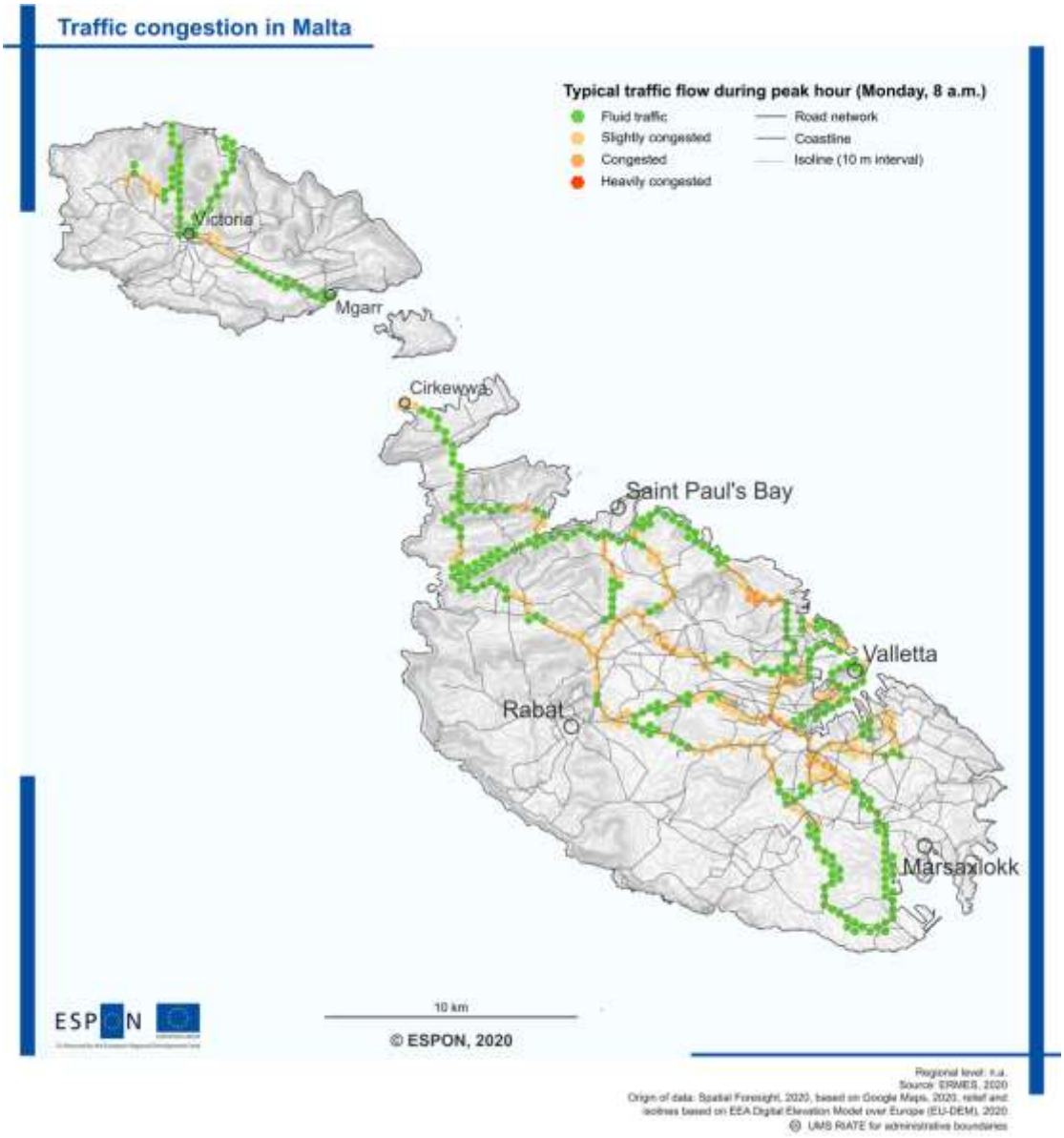
Maritime activity centres around the two main Malta ports, Valletta and Marsaxlokk, although a number of other ports occasionally host ships on international voyages, usually passenger vessels. Both are capable of providing a comprehensive package of maritime services including towage, salvage, pilotage, victualing and provisions of all kinds of stores and supplies. Both of the Ports are Ten-T core ports and form part of the Scan-Med corridor.

Geographically, the port of Valetta is a natural-deep water port surrounded by cities of historical and cultural importance, leaving limited room for expansion (see also figure 1). Marsaxlokk Port, which is located in the South East coast of Malta, is also constrained by the multiple uses

of the surrounding land. Aside from these two core ports, there is also the port of Mgarr in Gozo which is essential for ensuring inter-island connectivity for passengers and goods.

The main connection between Mgarr in the north and Valetta and Marsaxlokk in the south is a road. This road connection is used both for the transport of goods and for commuting purposes. Therefore, it is vulnerable to congestion. In addition, traffic has increased over the past years. Since it is the only main connection between Valletta, Marsaxlokk and Mgarr, transport stops when service on this road is obstructed. As a result of the heavy usage of the road there are also negative environmental effects.

Figure 3 Traffic congestion in Malta

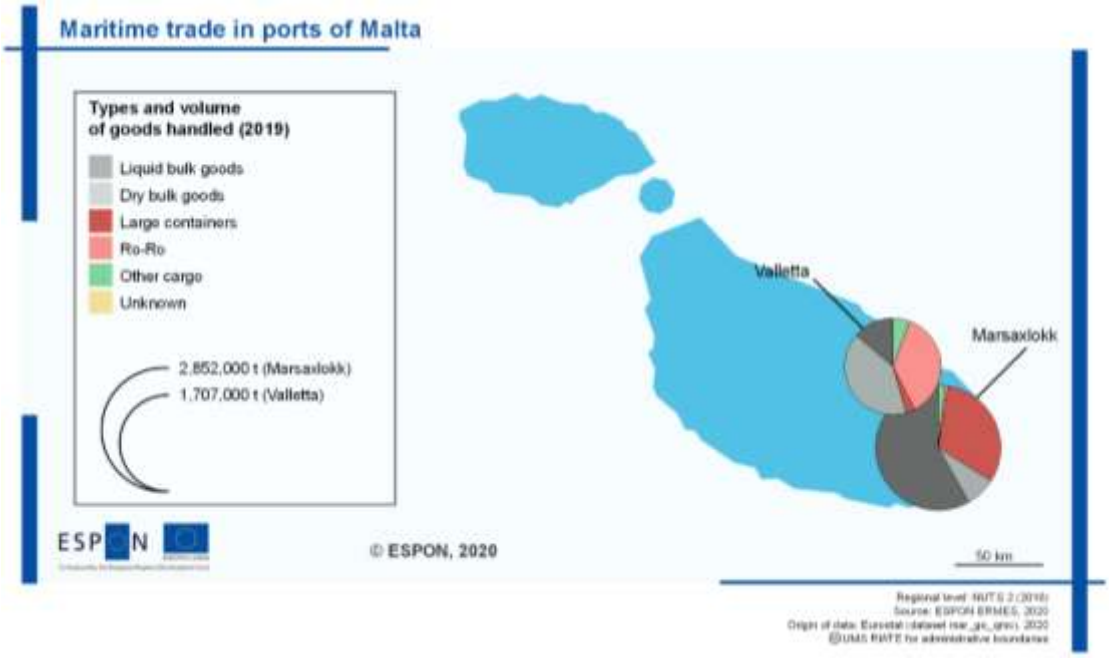


In 2018, the Maltese ports of Marsaxlokk and Valletta handled about 4.6 million tons of freight imported locally, of which roughly 2.2 million tonnes were containerised cargo (loaded and discharged). Each port has a distinct profile. Marsaxlokk, which handled 2.9 million tons of

imported cargo in 2018, clearly focuses on liquid bulk goods (58 %) and container transport (31 %). For Valletta Port, dry bulk goods (41 %) and roll-on/roll-off transport (37 %) are the most important types of imported cargo. However, liquid bulk goods also play a role (14 %).

Further to this, the main maritime activity in terms of containerised cargo handled, centres around Marsaxlokk Freeport Terminals. In 2018, containerized transhipment cargo handled at the Freeport amounted to 12.7 million and 14.1 million tonnes loaded and discharged respectively. [3] Maritime trade statistics in Malta are presented in Figure 4.

Figure 4 Maritime trade in Malta and nearby ports



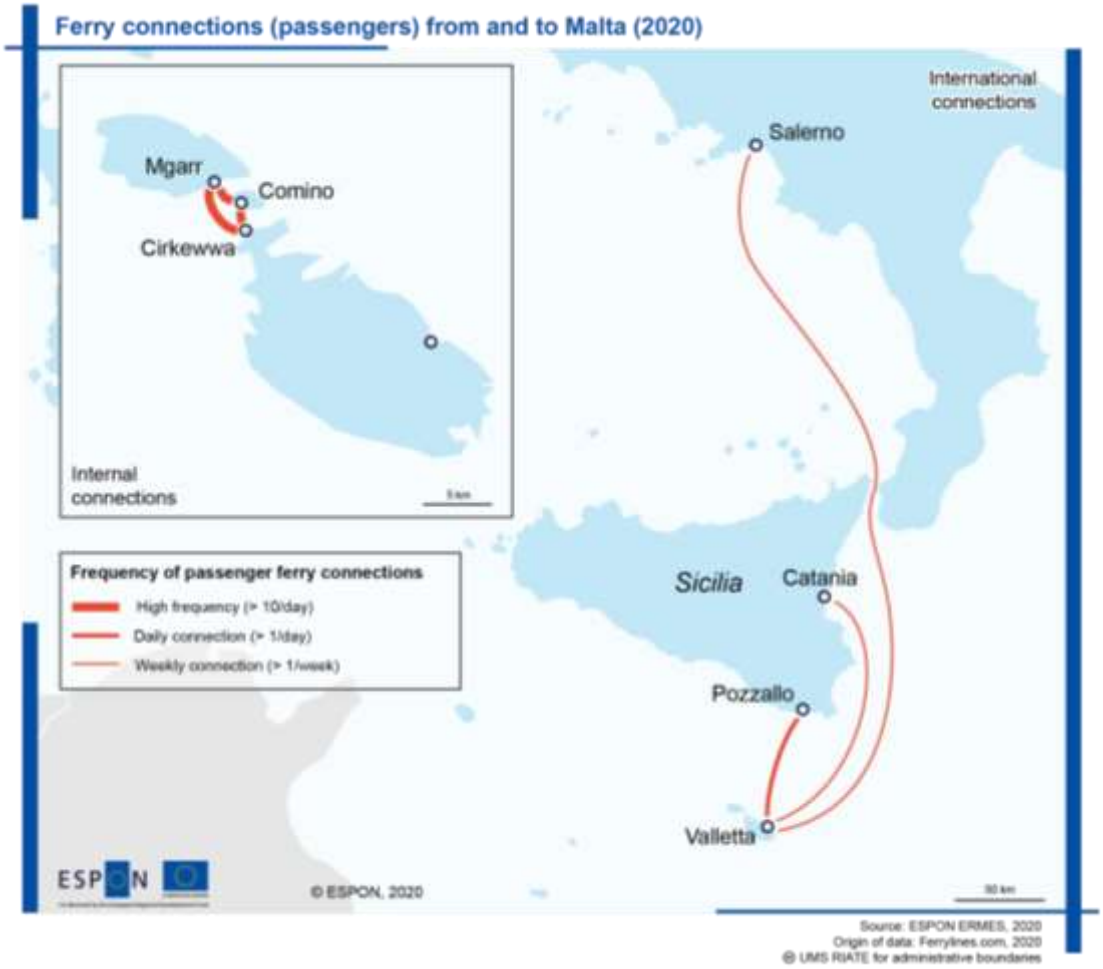
Source: Eurostat (2020), Gross weight of goods handled in main ports by direction and type of cargo

Passenger transport in Malta mainly consists of cruise vessels. In 20198, the number of cruise liner calls has (compared to 2017) decreased with roughly 30 vessel calls. Consequently, the total number of transit passengers decreased by 2.2% to 550.000 passengers. In addition, the number of ferry passengers in 2018 is equal to roughly 1.1 million passengers, with the connection between Valletta and Sliema being the busiest ferry connection.[4] The national and international ferry connections are presented in Figure 5.

[3] NSO (2019), Transport Statistics 2019

[4] Idem previous

Figure 5 Ferry connections from and to Malta



Competitiveness and current cluster dimension

In the regional competitiveness index for 2019, Malta ranks 177th out of 268 European regions. It is categorised in stage 4 of development, with 1 being the lowest, and 5 being the highest. Malta scores well compared to its peers in the field of macroeconomic stability. In terms of higher education and lifelong learning, and technological readiness, Malta underperforms compared to its peers.

Malta takes the 104th place in the urban-maritime eco-clusters ranking, which classifies the country as an underdeveloped region. The region scores slightly below the European average on all four indices. Especially for the sub-index on innovation the region scores lower than the other study regions (e.g. scientific publications, R&D expenditure, etc).

Malta Marittima Agency was setup in in 2016 with the scope of implementing the Integrated Maritime Policy and in particular to help the blue economy to diversify and flourish. To this effect, Malta Maritime Agency, which now has been incorporated into Transport Malta, has set up a number of clusters in key maritime sectors to facilitate dialogue, share ideas and formulate

policies between the parties directly involved in the sector. Clusters have been set up in both the traditional economic sectors and also in others which are still in their infancy such as the Blue Bio technology.

2.2 Governance

Within Malta, Transport Malta is the authority responsible for regulating maritime activities in the territorial and internal waters of Malta and is involved in the development and implementation of better organization of popular bays in Malta and Gozo. The two main ports in Malta, Valletta and Marsaxlokk are governed in different ways (public or private). The figure below demonstrates the institutional embeddedness in Malta. More information on the governance of the respective ports is provided below.

Figure 6 Institutional embeddedness Malta

Port of Valletta

The Grand Harbour is the only general purpose port with services ranging from cargo storage and handling (conventional, wet and dry bulk and unitised cargo), maritime tourism services to the availability for berthing facilities for cruise liners, cargo vessels and commuter ferries.

The Valletta Gateway Terminals (VGT) Limited is the authorized Port of Valletta Cargo Terminal operator, contracted with Transport Malta, for the Port of Valletta. VGT is a joint venture between Tumas Group, one of the leading and diversified Maltese business groups, and Portek Group, which is based in Singapore. In June 2006, Valletta Gateway Terminal was awarded a 30-year concession agreement to operate and manage the Grand Harbour Terminals, capable of handling Roll On/Roll Off operations, trailers, containers, continental cargo and vehicles.

Valletta Cruise Port plc - formerly known as VISET Malta plc - is a limited liability company that took over the cruise and ferry terminal operations following an international tender issued by the Government of Malta in 1996. Valletta Cruise Port plc is part of Global Ports Holding.

Valletta Cruise Port plc is made up of the following shareholding companies:

- AX Port Investment Company Limited
- AX Port Holding Company Limited
- Perquisite Holdings
- Global Ports Melita Limited
- Infrastructure World International Limited – Hong Kong

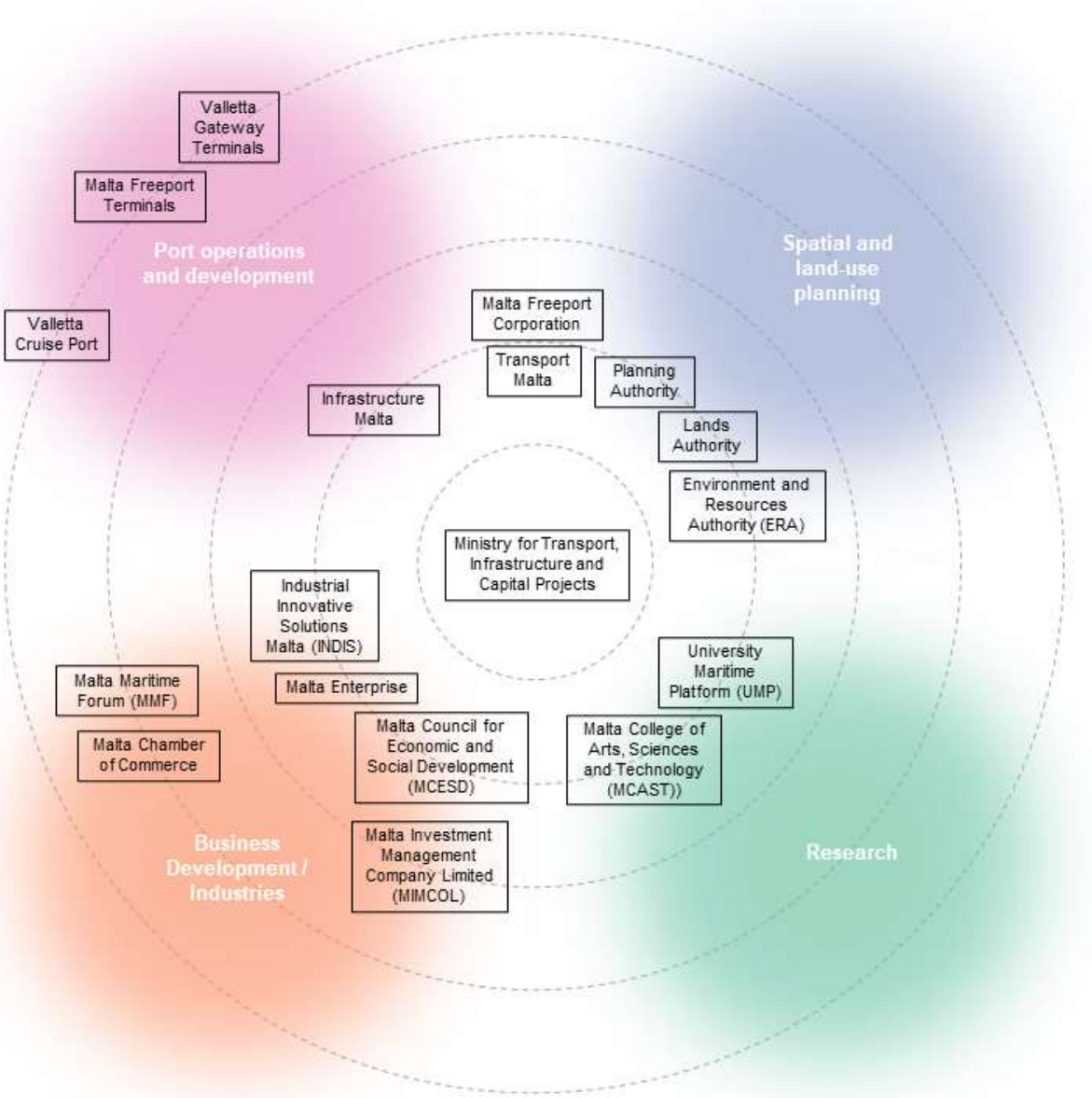
Malta Freeport (Marsaxlokk)

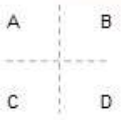
On the other hand, the port of Marsaxlokk focuses on the transhipment activities with Malta Freeport privatized in 2004. The shareholder structure is composed of Terminal Link, the leading container terminal operator; Yildirim Group, one of the leading global diversified industrial groups in Turkey; as well as the strong presence of CMA CGM, the world's third-largest shipping line; and China Merchants Port Holdings Company Limited, the largest terminal operator in China.

Maltese urban-maritime actors

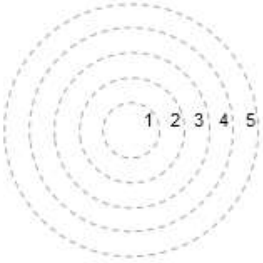
The graph below demonstrates the different types of actors that are involved with urban-maritime activities in Malta. They are both governmental and private organisations in different field: research, business development and industry, spatial and land-use planning and port operations and development. The mapping of these actors was done through contacts with local experts and stakeholders. The map shows a relatively wide coverage of different actor types. Main industrial parties however are missing.

Figure 7 Actor mapping in Malta





Each quadrant provides for a **field of activity** that can support maritime eco-cluster development: Port operations and development (A), spatial and land-use planning (B), Business development and industries (C), and research (D). The relative position of actors in between two quadrant reflects mixed nature of certains actors that may bridge some gaps between fields of activities.



The distance to the centre of the graph reflects the **relative public-private ownership structure and objectives** of each organisation.
1: public authority, i.e. publicly funded body, rooted in democratic processes and focused on the public interest.
2: other public actor, i.e. publicly funded body, partially or totally independent from political decisions, focused on public interest
3: mixed public-private actor, i.e. of mixed nature, fulfils both public and sectoral or private interests
4: private actors representing collective or sectoral interests, i.e. it is owned/dominated by private entities and fulfils tasks based on collective or sectoral interest
5: fully private actor, i.e. owned by private persons and focused on private interests

2.3 Policies and projects

The region faces specific trends and developments, which are highlighted in several policy documents: National Transport Strategy 2050; National Transport Master Plan 2025; Grand Harbour report 2007, Local Grand Harbour Plan 2002; the Integrated Maritime Policy; and the Marsaxlokk Inner Harbour Area Environment and Development Brief 2017. These documents already outline some strategic plans such as:

- The development of commercial, industrial and dock areas, passenger, leisure and tourism and other related services around the Grand Harbour;
- The purpose for implementing the Integrated Maritime Policy and in particular to help the blue economy to diversify and flourish;
- The promotion of sustainable development of local maritime sectors;
- The need for a more efficient utilization of the transport system, creating modal shift and encouraging the use of greener fuels and vehicles (along with room for innovation and research);
- The interest for demonstrating how ports and port areas can reduce their carbon footprint (i.e. project PORT-PVEV; EU Green Loop Project; etc.)

Some efforts to achieve these strategic plans have already started such as the upgrading of Modal Interconnection on Malta's TEN-T (road) Core Network: Marsaxlokk-Luqa-Valletta, or the application of Industry 4.0 Technologies towards Digital Port Container Terminals – iTerminals 4.0. However, some other challenges and barriers still remain to be solved within the next 10 years.

3 Urban-maritime scenarios

3.1 Introduction

Four scenario trends were presented to a targeted representation of stakeholders for each of the case study regions. These trends were based on potential global trends that seaports may be facing in general and in the future, but also on the ports influence onto the nearby landscape beyond seaports. The stakeholders were asked to identify which trends apply to their respective region in the coming 10 years. The global trends are presented below and in the following paragraphs we describe the selected trends for Malta.

Global trends

The four global trends identified were the following:

Trend 1) Optimization of (port) operations:

The need to optimize operations is becoming more and more important. When it comes to port operations there is a clear direction towards more efficient operations along with further integration of the supply chain, circular economy, personnel requirements and economies of scale[5]. Regarding the latter, economies of scale at sea have led to the deployment of ever larger containerships[6], which could lead to the potential developments of new terminal infrastructures. Growing container volumes and the increasing ship size could also lead to considerable pressure on cargo terminals, leading to congestion and other negative environmental externalities[7]. This scenario also looks at the potential need to optimize the transport chain (e.g. infrastructures), transportation capacity and accessibility and/or efficiency.

Trend 2) Port regionalization & multimodality:

The competitiveness of seaports depends more and more on the ability of cargo reaching its final destination[8-9]. Building on that, the main bottlenecks of most ports are in the –direct-

[5] Kennisinstituut Mobiliteit (2019). Trends en hun invloed op zeehavens.

[6] Wu, W. M., & Lin, J. R. (2015). Productivity growth, scale economies, ship size economies and technical progress for the container shipping industry in Taiwan. Transportation Research Part E: Logistics and Transportation Review. https://doi.org/10.1016/j.tre.2014.10.011

[7] Acciaro, M., & Mckinnon, A. (2013). Efficient Hinterland Transport Infrastructure and Services for Large Container Ports. JTRC Discussion Paper Series

[8] Ibid.

[9] Merk, O., & Notteboom, T. (2015). Port Hinterland Connectivity. International Transport Forum. https://doi.org/10.1787/2223439x.

hinterlands rather than at the seaside (port terminals). To ensure efficient and smooth access to the market in the future, the port system must be integrated in a multimodal (or synchromodal) transportation network that connects port and inland terminals through hinterland connections. This integration should be coordinated between port developments and also be in line with TEN-T planning.

Trend 3) Innovation & digitalisation:

Digitalisation and automation provide many new opportunities to increase port productivity, increase the efficiency of port logistics and eliminate bottlenecks. Several new digital trends and developments could help in such a task such as: the use of adequate IT systems (truck and barge) to manage congestion, increase capacity, increase the efficiency and effectiveness of gate operations and to ensure adequate coordination and information exchange among operators[10]; the use of automated and advanced IT systems at terminals to ensure efficient operations, as advanced electronic data interchange (EDI) systems provide real time information to port managers and integrate information flows from several operators[11]; the use of Internet of Things (IoT), 3D-printing and even the development of autonomous transportation for various modalities (inland waterways, trucks, trains). These new digital trends and development will also increase the focus and attention towards cyber-security issues[12].

Trend 4) Enhancement of sustainability

The urgency for making an energy transition away from fossil fuels has a tremendous effect on seaports that are often strongly linked with the fossil fuel industry. Over the next decade(s) steps have to be taken to green these port complexes. Bio based and circular economy offers great opportunities for these port complexes. Also for the 'license to operate' and the 'license to grow' of seaports it is important that focus is put on more sustainable port development strategies. This especially applies to seaports that deal with a port-city interface.

3.2 Scenario description

From the scenario building workshop it became apparent that the most relevant scenario for Malta is one that focuses on three out of the four global trends: **trend 1 (optimization of (port) operations) and trend 4 (enhancement of sustainability) are considered priorities for the**

[10] Acciaro, M., & Mckinnon, A. (2013). Efficient Hinterland Transport Infrastructure and Services for Large Container Ports. JTRC Discussion Paper Series

[11] Kia, M., Shayan, E., & Ghotb, F. (2000). The importance of information technology in port terminal operations. International Journal of Physical Distribution and Logistics Management. https://doi.org/10.1108/09600030010326118.

[12] Kennisinstituut Mobiliteit (2019). Trends en hun invloed op zeehavens.

future scenarios at the Ports of Valletta and Marsaxlokk, while **trend 2 (port regionalization & multimodality) is the most preferred future scenario for the Port of Mgarr (Gozo)**[13]. Trend 3 (innovation & digitalization) was also mentioned by some stakeholders but it is not considered a priority but as means for enhancing the optimization of port operations.

The region specific storylines behind these trends are as follows:

Trend 1) Optimization of (port) operations at Ports of Valletta and Marsaxlokk

The need to optimize operations is becoming more and more important. When it comes to port operations there is a clear direction towards more efficient operations along with further integration of the supply chain, circular economy, personnel requirements and economies of scale. This scenario trend will look at including improvement of connections, enhancement of the efficiency, digitalization of operations, optimization of capacities and enhancement of sustainability. The improvements through the digitalization of operations should follow the objectives set-up by the National R&I Strategy 2020[14] as well as the R&I Strategy Post 2020[15]. Special focus will be given so as to **optimize the transport chain** (e.g. through new infrastructures), transportation capacity and accessibility and/or efficiency. This will aim to support a more holistic transport strategy for the Ports of Valletta and Marsaxlokk.

Trend 2) Port regionalization & multimodality at Port of Mgarr (Gozo)

The competitiveness of seaports depends more and more on the ability of cargo reaching its final destination. As such, connectivity and transport issues need to be clearly defined on the Country´s Transport Strategies. As such, Malta developed its National Transport Strategy 2050[16] and its National Transport Master Plan 2025[17] as well as some Port specific reports and plans (i.e the Local Grand Harbour Plan 2002[18]). On the other hand the Port of Mgarr in Gozo is essential for ensuring inter-island connectivity for passengers and goods. However, due to the double-insularity problem that Gozo is facing, the main bottlenecks of Port of Mgarr in Gozo are both at the port terminal (exceeded port capacity), but also at its hinterland multimodal

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[13] Multimodality in this case is restricted within Malta for the import and exports of goods given that the country is an island.

[14] http://mcst.gov.mt/wp-content/uploads/2017/02/National-RI-Strategy-2020-June-2014.pdf

[15] https://mcst.gov.mt/psi/ri-strategy-post-2020/

[16] https://transportmalta.wetransfer.com/downloads/02a871c2a36e859b751f40dd405a4b4a20161202212452/4df52a

[17] https://transportmalta.wetransfer.com/downloads/c0ed2f41cbdb8b47a22ef7c932bbebaf20170327084338/cfb89a

[18] https://www.pa.org.mt/en/local-plan-details/file.aspx?f=804

connections (multimodality in this case is restricted within Malta for the import and exports of goods given that the country is an island). More ferry connections both for cargo and passengers are needed and this should be coordinated between ports (Mgarr-Valletta; Mgarr-Marsaxlokk). These bottlenecks need to be solved through adopting specific measures to avoid environmental damage/pollution due to Gozo´s pristine status and the uniqueness of its ecosystems.

Trend 4) Enhancement of sustainability at Ports of Valletta and Marsaxlokk

The urgency for making an energy transition away from fossil fuels has a tremendous effect on seaports that are often strongly linked with the fossil fuel industry. Over the next decade(s) steps have to be taken to green these port complexes. In this regard Malta has developed its National Policy Framework for Alternative Fuels Infrastructure for Transport (2018-2030)[19] and conducted some feasibility studies on the use of LNG[20] and the possibility of shore side electrical supply for berthed vessels within Maltese Harbours[21]. Further development of alternative energy sources (cold ironing, hydrogen, LNG) should be foreseen at the Ports of Valletta and Marsaxlokk, which should also focus is more sustainable port development strategies. This is of special importance as, geographically, the Port of Valletta is a natural-deep water port surrounded by cities of historical and cultural importance, leaving limited room for expansion and having to deal with port-city interfaces as mentioned under the Strategy for Valletta (2017)[22]. Port of Marsaxlokk is also constrained by the multiple uses of the surrounding land so the environmental impacts of its inner harbour area should also be considered as mentioned at the Marsaxlokk Inner Harbour Area Environment and Development Brief (2017)[23].

3.3 Opportunities and threats

From the above, three main types of actions are foreseen in the future ten years in Malta: improvement of the transport chain on the island of Malta, improvement of connections between Malta and Gozo, and improvement and development of sustainable transport solutions and alternative fuels. For these actions, the opportunities and threats related to the development of port infrastructure and activities in Malta have been depicted (see next page). This map will be developed for the other regions as well.

[19] https://mtip.gov.mt/en/documents/npf%20malta.pdf

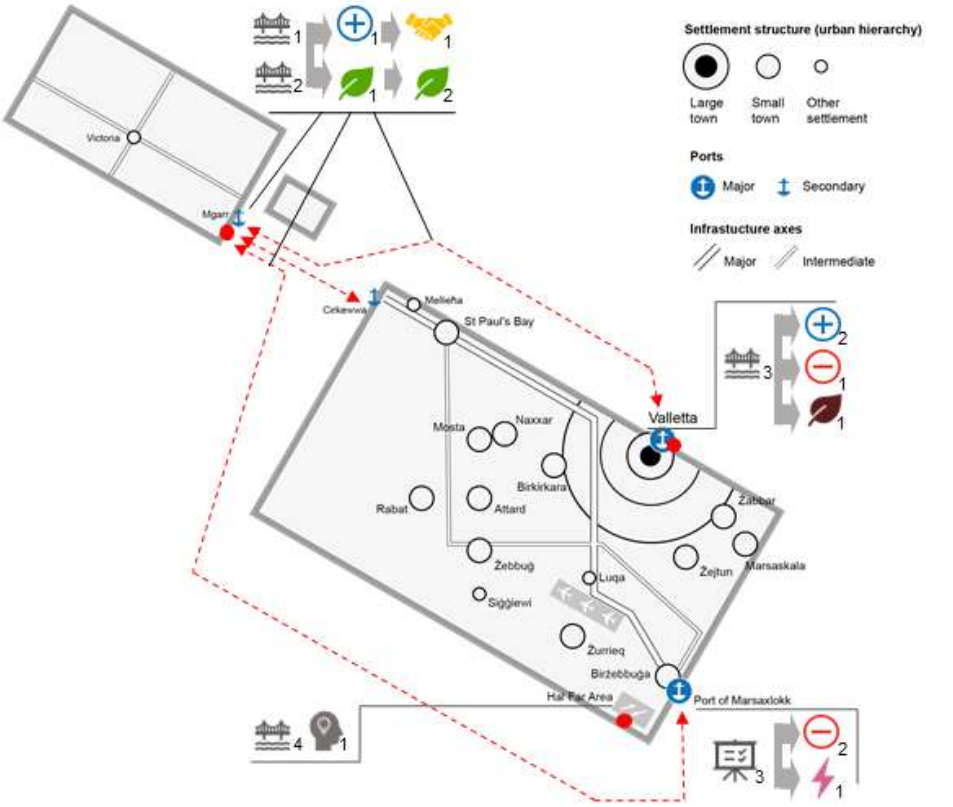
[20] https://meusac.gov.mt/wp-content/uploads/2019/11/Presentation-1.pdf

[21] https://electromobility.gov.mt/en/Documents/PORT-PVEV%20Feasibility%20Study.pdf

[22] https://publicservice.gov.mt/en/Documents/Valletta_Strategy.pdf

[23] https://www.pa.org.mt/en/development-brief-details/file.aspx?f=22953

Opportunities and threats related to the development of port infrastructures and port-related activities in Malta



Actions

Infrastructures

1 New combined cargo-passengers ferry connections

2 Extension and upgrade of port infrastructure in Mgarr

3 Extension and upgrade of port infrastructures for cruise ships (incl. new berths and dredging works)

4 New logistics park

New business models

3 Promotion of opportunities in the field of LNG, hydrogen and ammonia

Capacity building

1 Education to retrain workers for digital processes

Opportunities and threats

Socio-economic

+1 More efficiency in transport and reduced travel times

+2 Development of cruise tourism

−1 Conflicts between cruise tourism and freight transport on road infrastructures

−2 Decline in demand for fossil fuels and related businesses

Cooperation / governance

1 Better connectivity and integration for businesses located in Gozo

Environmental

1 Reduction of road congestion (Malta-Gozo)

2 Reduction of CO_2 emissions

−1 Increased environmental pressure in the port area

−1 High investment risks related to uncertainty about the fuel of the future

Actions to be developed are located in red on the map

When taking an in-depth look into future development perspectives of port infrastructures and port-related activities in Malta, various opportunities and threats can be derived.

3.3.1 Infrastructure actions and related opportunities and threats

Better ferry connections, including combined passenger and cargo ferry lines, between the two islands and measures to extend and upgrade the port infrastructure in Mgarr (Gozo) would be first starting points to improve inter-island connectivity between Malta and Gozo. This would contribute to smoother and more seamless transport connections which can be translated into higher efficiency and shorter travel times both in freight transport and passenger traffic. If connections between Malta and Mgarr are taken into consideration, this would also imply less road traffic congestion (with the consequent lower CO_2 emissions). A reduction of road congestion would also benefit commuters and reduce their losses of travelling times. Overall, especially businesses located on Gozo Island could benefit from better integration of the two Island transport systems and higher inter-island connectivity.

Similarly, regarding the improvement of connections between Malta and Gozo, this would have both positive and negative repercussions. The positive impacts are mainly related to economic benefits. The improvement of connections for Gozo would lead to a reduction in traveling time for cargo operations. If the connections were to be secured by sea transport, it would also have a positive environmental impact in the sense of trucks not going from South of Malta to the North (if there would be a hub in Valletta). This would reduce the traffic on Malta considerably, and thus have a considerable positive environmental impact.

If a combined cargo and passenger service is launched, it will also have a positive socioeconomic impact. A number of Gozitans currently commute to Malta and thus the provision of a timely and efficiency service would have wider benefits.

An improved ferry service would ease doing business between the two islands, by improving accessibility. The main challenge to accessibility k lies with infrastructure limitations particularly since infrastructure is already heavily congested, so transformation of port infrastructure is needed.

As far as negative impacts are considered, it should be noted that an increase of services between the islands could also result in a bigger flow of transport. This would lead to the need to redirect car travellers to other nodes. Stakeholders noted that there are over a million day trippers in Gozo per year. Improved connectivity could also prevent congestion issues due to tourism flows across the island.

Looking particularly to main opportunities and threats related to the development of port infrastructures at the port of Valletta, the development of future needed port infrastructures for cruise ships could entail an important bottleneck. Extending and upgrading the existing infrastructures would help further developing the existing cruise tourism sector but might also

increase over-tourism and imply additional conflicts between tourism-related transport and other types of transport (i.e freight transport). In addition, one needs to take into consideration that the environmental pressure in the port area could further increase, leading to potential environmental impacts such as noise or pollution, especially as the port of Valletta is embedded in a densely populated urban area of significant historical importance.

Similarly, with regard to the improvement of operations, a difference can be discerned between the operations in Marsaxlokk and the operations in the Port of Valletta. Malta Freeport has invested in new technology over the years, which resulted in improved operation efficiency. This could also be done for the Port of Valletta. And as a result, new jobs could be created.

Looking into the opportunities and future development perspectives for the port of Marsaxlokk, two infrastructure preconditions were highlighted. The need to develop a new logistics park (near the existing Hal Far Area) to be coupled with the creation of certain training facilities where the maritime labour force could upgrade their skills especially with regards to enhancing their knowledge around digitalization issues. The port is also envisioning infrastructure opportunities with regards to the promotion of liquefied natural gas (LNG), hydrogen and ammonia as potential new sources of maritime fuels. The enhancement of sustainable practices in the Maltese ports is a very prominent topic. Currently Malta is a strong bunkering centre, with extensive infrastructure to cater for this type of activity.

However, if the usage of such innovative energy sources does increase, it would not only imply opportunities for future development of the area, but would also could entail risks for those current businesses processing fossil fuels which are yet an important business component at the port of Marsaxlokk. These businesses would have to adapt and reconvert to these new energy sources. However, given the high level of uncertainty that still currently exists around how these innovative energy sources would be developed, the port and its businesses would also need to take into consideration the high investment risks that reconverting to these energy sources could entail and decide when would be the best moment to enter in such financing and reconversions. With a transition to new fuels at the expense of fossil fuels, big investments are needed to ensure the bunkering infrastructure is well prepared. At this stage moreover, it is not clear what will be the fuel of the future. This is a challenge since bunker barges are costly. For a period of time, there will exist a hybrid situation, with ships operating on different fuels. Over time, the infrastructure has to be adapted.

3.4 Cluster development potential

Malta's main challenges in the coming ten years relate primarily to the connectivity on and between the different islands. The environmental impact of flows of traffic is an important aspect

of this challenge, as the current modes of transport need to be replaced by more sustainable methods. The use of greener fuels and vehicles is therefore high on the priority list for Malta. Also, a certain degree of flexibility in the use of current infrastructure is needed. As COVID-19 has shown, the need for specific types of infrastructure (in this case cruise ship berths) can change drastically in a short period of time. It would be more efficient if berths could be used more flexibly, to handle cargo at one time, while handling cruise shipping at another stage.

In summary, we could say that Maltese seaport stakeholders are looking at the following challenges:

- A need for a more **holistic transport strategy** (including improvement of connections, enhancement of the efficiency, digitalization of operations, optimization of capacities and enhancement of sustainability)
- Encouragement of **sustainable modes of transport** (through i.e. the use of greener fuels and vehicles)

For each of these challenges, strong collaboration between different actors in the industry and governmental organisations is necessary. They are potential areas for cluster development.

4 First guidance and recommendations

4.1 Introduction

Being an island, and a highly densely populated one, Malta´s hinterland is limited. Therefore, an effective planning is an ever more important issue. Road connection between Marsaxlokk and Valletta faces congestion, and the connection further north towards the island of Gozo faces similar challenges. However is that there is scope for better connection between the ports through the use of sea transport rather than reliance on road transport. This is particularly relevant for the Port of Mgarr in order to service the needs of the island of Gozo.

In Malta, a National Transport Strategy[24] and a Master Plan[25] already exist which have clear objectives and goals (8 guiding principles describing the strategic direction[26]), however the strategy and plan are **not holistic**. In this regard, stakeholders in Malta stress the need for development **within the next ten years, a holistic and sustainable transport** strategy which should not be static in nature, but dynamic, taking into consideration even International policy developments in the maritime sector such as the European Green Deal.

The issue is not re-doing or re-thinking the strategy, but looking at how to implement it in a more holistic manner and when. Through **improvements of infrastructure and the fleet and vehicles used** on and around the islands, Maltese stakeholders wish to create both economic and environmental sustainable businesses, including also the **transition to alternative transport modes and fuels**. The way in which this transition to alternative transport modes and fuels can be realised needs to be yet further studied.

4.2 Overview of key challenges

Malta is an island state at the periphery of Europe. As an island, it is characterised by insularity which creates constraints such as remoteness from urban centres, as well as low accessibility to European markets (ESPON Bridges). Indeed, the country has a high dependence on external transport linkages and the standard of service provided by air and sea transport plays a crucial

[24] Malta National Transport Strategy (NTS) 2050. Available at https://transportmalta.wetransfer.com/downloads/02a871c2a36e859b751f40dd405a4b4a20161202212452/4df52a

[25] Transport Master Plan (TMP), 2025. Available at https://transportmalta.wetransfer.com/downloads/c0ed2f41cbdb8b47a22ef7c932bbebaf20170327084338/cfb89a

[26] These 8 guiding principles are: 1. Efficient utilisation of the existing transport system: Traffic Management, Logistics Planning and Enforcement; 2. Creating modal shift; 3. Integrated approach to planning and design; 4. Encouraging use of greener vehicles and fuel; 5. Developing and improving the effectiveness and quality of the strategic transport network; 6. Education, information and human resources; 7. Room for research and innovation; 8. Financing and generating revenue.

role in influencing the islands' socio-economic development of the country and the quality of life. This insularity and peripherality reflects the inherent vulnerability of the country, which is amplified for the island region of Gozo which suffers from double insularity.

As mentioned in the main report, the disconnection from mainland gives rise to multiple challenges, which can be mitigated or exacerbated by other physical and social factors present in the island.

Further to the limitation in the size of the island, Malta is also one of the most densely populated countries leading to constraints in land size. Indeed one such challenge is the already mentioned limited hinterland space which calls for the need to more effectively plan the use of such existing space. Another challenge is the storage of alternative fuels, which **is currently lacking.** Other **challenges herein are the lack of strong innovative centres** in part due to the challenges that the island faces in attaining critical mass. This challenge, translates itself into limited capacity to exploit economies of scale, scope and diversification, thereby curtailing potential opportunities.

Furthermore, insularity aspect challenges in Malta are identified as follows:

- **Challenges in transport and trade logistics**: The importance of well-functioning, reliable, sustainable and resilient transportation systems, in particular maritime and air transport, is particularly important for islands due to their insularity. Moreover the effects of insularity and physical separation from mainland Europe leads to intense demand for economic and social infrastructures in general, and particularly for access and service infrastructures such as transport, waste management, water and energy. The road system is limited in relation to the growing use of cars instead of public transport, as well as to the growth of goods transported by road, all of which has led to more pollution. This could pose daunting challenges and undermine their ability to achieve sustainable development goals;
- **Market accessibility & Economies of Scale**: The cost of insularity is clearly manifested in the territorial discontinuity which constitutes a barrier to the diffusion of positive effects emanating from the economies of scale enjoyed by Member States on the mainland. The implications of higher costs and time-lags are also a factor on the costs of doing business as well as the attraction of foreign direct investment;
- **Geographic remoteness & Economic Dependences**: Due to the openness of the Maltese economy, its performance is affected by economic developments abroad, in particular by developments regarding its main trading partners. As such, the Maltese economy is very susceptible to international trade and is very much vulnerable to shocks which are outside its control. While geographically it is a state island, Malta cannot be isolated economically. With limited natural resources, the country is entirely dependent on the imports of raw materials and processed goods. Also, the country is

heavily dependent on the exports of goods and services. Challenges related to insularity are magnified for Gozo as it is characterised by double insularity. Improvement of the infrastructural settings (in transport, education, tourism and business support) would constitute a core-facilitating factor in order to reduce peripheral disparities in Gozo;

- **Vulnerability to external shocks**: Islands such as Malta are faced with external economic shocks over which there is little control thus rendering the island vulnerable (Briguglio, 1995)[27]. .The vulnerability to external shocks is also extended to natural shocks which affect the environment, Natural assets are very important for Malta where biodiversity and landscape quality are particularly high. Environmental pressures are very different among European islands as population density varies from less than 1 inhabitant per km2 up to more than 1000 (Malta, Italian coastal islands), but this pressure is growing creating a direct impact on natural landscapes due to space fragmentation. Finally, climate change is a global concern but islands are more vulnerable than the mainland;
- **Access to funds**: Financing is a key challenge when developing, rehabilitating and maintaining island infrastructures and facilities. Most of the time limited financial resources are at the heart of the problem for the territorial development of islands as they can often be highly indebted and have limited access to concessionary loans and resources. Raising levels and diversifying sources of funding as well as increasing private sector involvement in territorial development are some of the recommendations that could help overcoming this challenge. Governance aspects and structure are also key both to access funds and manage them. Malta, for example, as an island state, benefits from high degree of governance and autonomy in policy formulation and implementation, allowing to consider and mitigate the challenges, as well as to make use of specific governance opportunities and challenges linked to close ties between a limited number of stakeholders;
- **Access to technology and know-how**: The necessary technology and know-how needed to advance in the territorial development of islands is not always present. In the case of transport, access to knowledge and resources is important to build a sustainable network. The environmentally sustainable development technology and know-how is key for the development of a holistic and sustainable transport system in Malta. At the same time, given the island's strategic position in the Mediterranean collaborative approaches with other countries in the Mediterranean is beneficial to the Maltese region, including dialogue between public and private investment partners so

[27] Briguglio, L. (1995). Small island developing states and their economic vulnerabilities. World development, 23(9), 1615-1632.

as to encourage the sharing of lessons learned, experiences and best practices and ensure that existing opportunities are explored and exploited[28].

4.3 Draft recommendations

In order to aim for this goal of having a holistic and sustainable transport strategy within the next 10 years, some broad recommendations were presented to Maltese stakeholders which include:

4.3.1 Develop a holistic and sustainable transport approach

Having in place a transport strategy and a master plan, Malta would need to work on the approach or roadmap to **achieve it in a holistic and sustainable way**. Making the strategy more holistic would mean that it cannot be developed in isolation and that it would need effective cooperation, knowledge and experience drawn from the various stakeholders involved in transport aspects in Malta. At the same time, the strategy should acknowlede the dynamic and development needs of the different stakeholders, ensuring that these needs are addressed in a sustainable and coherent manner. This cooperation and coordination should come from some good governance practices in policy making which should focus on the need for the full participation of citizens and civil society actors in governance so as to predicate on the effective flow of information and dialogue between citizen, governments and other actors. By situating communication, information dissemination and dialogue as key components of governance, a positive correlation between communication and good governance is tacitly assumed.

Making the strategy more sustainable would also involve cooperation amongst the various ministries dealing with sustainability issues, but also enhancing the innovation and businesses transition towards these sustainability goals.

[28] INSULEUR declaration in the frame of the 11th Forum "Transports and infrastructures: islands territorial cohesion and economic growth" (2011). Available at: https://www.insuleur.org/documentos/D_223.pdf

4.3.2 Innovation to facilitate the transition towards a holistic and sustainable transport system

To facilitate the transition towards a holistic and sustainable transport system, innovation is needed. Currently, innovation takes place mainly in Marsaxlokk, but not necessarily in other places. There is a need to learn from the innovative approaches in Marsaxlokk and distribute the knowledge along other parts of the island. This will benefit both Marsaxlokk and other parts of Malta.

At the same time, in light of the constraints that exist with the limited availability of land for port activity in Malta, the transport strategy which already considers maritime and land transport should also consider industrial policy for which a significant investment is expected in the coming years, especially to address the needs of the hinterlands and to improve the connectivity between main ports in Malta and Gozo's industrial activity.

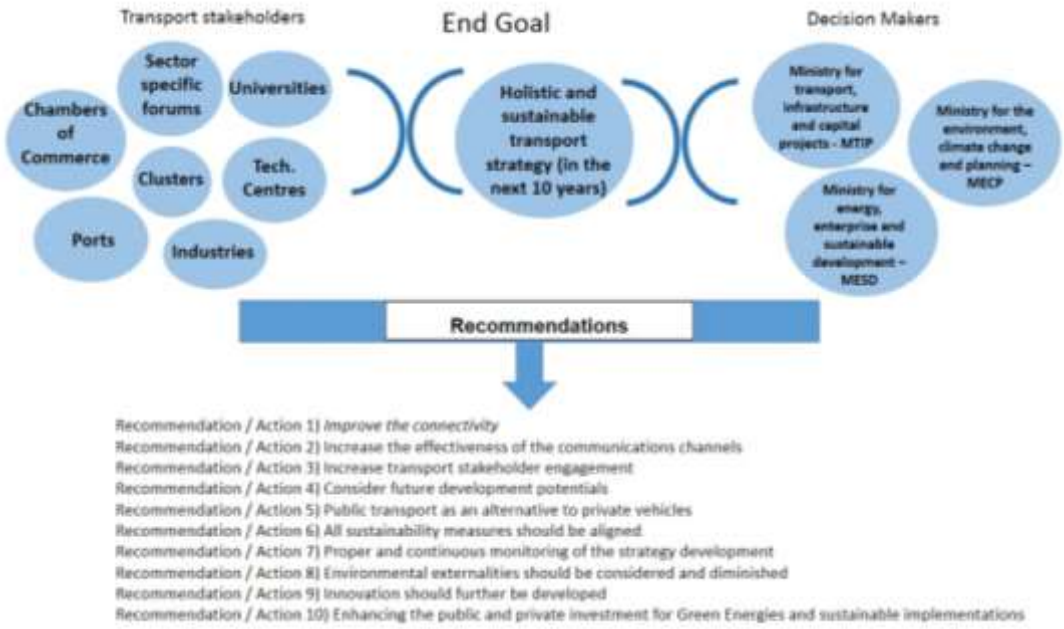
4.3.3 Boosting local industry to be prepared for the transition towards a holistic and sustainable transport system

Whilst acknowledging the availability of feasibility studies on LNG infrastructure for shipping in Malta, there remains a high degree of uncertainty on the fuel demand in the medium to longer term. Discussions need to be undertaken amongst key players on the supply of fuel in the future followed with policy and regulatory guidance. The local industry needs to be well prepared on the provision of supply be it LNG, hydrogen or other means of clean transport. The provision of such supply requires port investment and a holistic strategy to cater for future demand.

4.4 Case-Study specific recommendations

The recommendations above need to move one step ahead and be translated into specific recommendations. As such, this section aims to go further beyond these recommendations with the aim of guiding Maltese stakeholders on the concrete steps they may be required to achieve the above mentioned objectives in due time.

4.4.1 Develop a holistic and sustainable transport approach



In order for the transport strategy to become **more holistic** Malta could:

- **Recommendation 1)** ***Improve the connectivity***

  The strategy needs to address accessibility in Gozo and encourage better links between Malta and Gozo, ensuring the development and improvement of sustainable transportation modes in Gozo. At the same time it must be ensured that Business Hubs and Enterprise hubs are well served by public transport.

- **Recommendation 2)** ***Increase the effectiveness of the communications channels***

  Communication channels need to be improved both within the government ministries dealing with the various aspects of sustainable transport (mainly the Ministry for transport, infrastructure and capital projects - MTIP; the Ministry for energy, enterprise and sustainable development – MESD[29] and the Ministry for the environment, climate change and planning – MECP) and between the government and those actors dealing with transport issues in Malta.

[29] The MESD - National Policy Framework for Alternative Fuels Infrastructure for Transport, 2018-2030. Available at https://mtip.gov.mt/en/documents/npf%20malta.pdf

- **Recommendation 3)** ***Increase transport stakeholder engagement***

  So as to develop a clear vision and a robust strategic planning process. Effective engagement helps translate stakeholder needs into strategic goals and creates the basis of effective strategy development. As such, a clear vision derived from a robust strategic planning process can only come from a proper and holistic stakeholder engagement. Participation should be as interdisciplinary as possible, which would call for new models of knowledge production in order to be able to develop holistic solutions, to consider a plurality of perspectives, and to support a more deliberative democracy approach. The creation of an all-inclusive Maltese FORUM could help achieving this recommendation. This forum could gather and foster alliances (amongst others) between the existing Malta Maritime Forum, the Malta Chamber of Commerce, the Gozo Business Chamber, the Malta Council for Economic and Social Development (MCESD), the Gozo Regional Committee within the MCESD, Malta Enterprise, Industrial Innovative Solutions Malta (INDIS), Malta Investment Management Company Limited (MIMCOL), Universities, Port Authorities, Terminal Operators, Engineers, Architects, Sustainability experts, etc.

- **Recommendation 4)** ***Consider future development potentials***

  Ensure that areas defined for higher capacity development are well served by public transport and that land use development and transport planning take place in an integrated manner. At the same time efforts to prioritise the efficient use of the port area on land and sea especially for the grand Harbour and Freeport is essential for a proper sustainable urban-port development. Ensuring the accessibility to port areas, industry related areas, the airport and aviation related activities by planning for the transport network to accommodate their anticipated growth is also encouraged.

Furthermore, in order for the transport strategy to become **more sustainable** Malta could:

- **Recommendation 5)** ***Public transport as an alternative to private vehicles***

  There is a need to take the connectivity of the transport in a full manner and to pursue a more holistic public connectivity until final destination. This change would require push and pull measures. Restricting the use of private vehicles, promoting mixed use developments, designing a transport plan based on a sound analysis of the mobility

patterns and promoting the need to change bad habits is therefore necessary. Whilst car restriction measures such as parking charges or congestion charges might result in social inequalities (only those of higher income being able to afford the use of a car), public transport must become an attractive option. It must be accessible to the disabled, transport connections both within towns and between towns would need improvement, frequencies could be increased, the use of sustainable modes of transport could be promoted through education, etc. At the same time, ensuring easy accessibility to facilities by walking when daily facilities are within walking distance and ensuring access by other sustainable modes of transport when walking is not possible is essential.

- **Recommendation 6)** ***All sustainability measures should be aligned***

  The National Transport Strategy already foresees: 1) reducing and mitigating green-house gas emissions (through promoting renewable energy sources and zero carbon modes for transport); 2) ensuring the efficient and sustainable use and management of resources (through promoting the efficient use of resources in the construction of infrastructure projects); 3) ensuring adaptation to climate change, minimising the impact of transport to enhance the landscape and townscape; 4) preserving the natural habitats and biodiversity; and 5) respecting historical and heritage resources. However, those sustainability goals have been so far developed by isolated actions and implementations. There is an urgent need to align the implementation of such sustainability implementations into a structured roadmap with a clear sustainability vision. For this, increasing the effectiveness of its communications channels both within the government ministries dealing with the various aspects of sustainability (mainly the MTIP, the MESD and the MECP) is necessary. At the same time, seeking funding and investment opportunities, such as EU-funding opportunities that could help to advance on this recommendation is essential. These opportunities may come from DG MARE, DG ENER, DG MOVE, EU Green Deal, EU NEXT funds, etc. However, most businesses in Malta are small entities and SMEs with small secretariats who find it difficult to get involved in the application and implementation of EU funds. The government has placed a department to help accessing these funds but from an operational perspective these entities continue to face difficulties.

- **Recommendation7)** ***Establish a proper and continuous monitoring of the strategy development***

Once the strategy has started its implementation there is the need for a monitoring strategy to be developed where a potential monitoring board could check its performance, monitor the efforts, the amounts spent and the tasks developed and suggest amendments of changes to the remaining tasks to aim to fulfil the strategy in due time.

- **Recommendation 8)** ***Environmental externalities of transport developments should be considered and diminished***

Adopting environmental measures to avoid pollution, reducing congestion, reducing traffic impact, ensuring accessibility and supporting the creation of quality environments within the urban area and prime tourism sites is essential so as to retain and ensure the attractiveness of the areas. At the same time, supporting the integrated regeneration of degraded areas through infrastructural improvements and the introduction of environmentally friendly initiatives is also encouraged. Mitigation measures need to be in-place and an-ongoing conversation between ports and society needs to continually happen.

4.4.2 Optimization of operations through innovation to facilitate the transition towards a holistic and sustainable transport system

- **Recommendation 9)** ***Innovation should further be developed***

Innovation should be further developed to achieve the strategy goals in a more efficient and economic manner. Malta can drive innovation towards sustainability through its R&D efforts and it has already developed a post-2020 R&I Strategy towards smart specialization[30]. However, due to scale limitations, Malta should not re-invent the wheel and should take advantage of the technologies and developments developed elsewhere and bring them Malta. Consideration should be given to good practices and technologies which can be applied to address the needs of the local sector.

[30] R&I Strategy Post-2020. Available at https://mcst.gov.mt/psi/ri-strategy-post-2020/

- **Recommendation 10)** ***Enhancing the public and private investment for Green Energies and sustainable implementations***

  However, there has to be a clear consensus and clarity on which investments are needed to fulfil the goals of the strategy. The transition towards sustainable infrastructure could be costly, but, at the same time, the effects (in terms of better environmental quality and new job opportunities) will benefit both industrial stakeholders and local and regional authorities. As such, there should be incentives at a governmental level to stimulate actions by businesses, but businesses would also need to invest private funds so as to improve their performance, efficiency and minimize their carbon footprint.

ESPON 2020 – More information

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