Perspectives of Container Shipping in the Western Mediterranean

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This article outlines a number of strategic reflections on the role of container shipping management in promoting regional integration and the global positioning of the western Mediterranean.

These reflections hope to demonstrate the importance of implementing cooperation and collaboration strategies and policies in the area of maritime transport between ports and stakeholders from countries of the western Mediterranean to contribute to the economic development and integration of the region, its positioning in global flows and transport sustainability. To this end, this article presents the main trends in container shipping on a global scale and its impact on the western Mediterranean space, enabling a series of reflections to be formulated on future perspectives and strategies for container shipping in the region.

Global Trends in Container Shipping: Towards the Creation of Economies of Scale

In recent decades, container shipping worldwide has undergone a series of transformations as a result of both maritime and terrestrial stakeholders seeking bigger economies of scale. Particularly following the crisis in 2008, these transformations have led to the consolidation of a number of trends which began in previous years.[1] Firstly, of note is the process of the horizontal integration of carriers, which has resulted in the creation of three major shipping alliances (M2, Ocean Alliance and THE Alliance). These three alliances control most of the world's container routes and flows, and, more specifically, account for 72.3% of the world's container shipping capacity (UNCTAD, 2017).

Secondly, the formation of these alliances has favoured the introduction into the main transoceanic routes of a fleet of ships with capacities of between 12,000 and 21,000 TEUs. The use of these mega-ships has required the routes and services offered by carriers to be reorganized in light of reductions in the number of stops, their frequency and the ports they service. At the same time, the practice of transferring containers between ships has taken on particular relevance, whether to service secondary ports through lower capacity ships (feeder services) or to cover different stages of the transoceanic routes with other bigger ships.

Thirdly, it should be underscored that the restructuring that has taken place at sea has necessarily had its consequences on land and on the agents that operate there. The reduction in stops and frequency has favoured a process of concentrating flows in a limited number of ports. These, in turn, have to be able to deal with strong spikes in demand, which affect service flexibility and adaptability, and respond to the need for new investments to adapt to the new requirements in container shipping. Prolific investment in new infrastructure has led, on occasion and in a context of competition between ports, to the generation of overcapacities in port infrastructure (ECA, 2016). Finally,

[1] This process has been analysed in great depth by the academic literature, but has also been studied by international organizations and entities with an approach more closely focused on defining strategies aimed at counteracting the negative effects of these trends. See OECD/ITF, 2015 and OECD/ITF, 2018 for examples of the latter.

it should be noted that these land- and sea-based transformations have led to an imbalance that favours shipping lines when it comes to negotiating with ports, a result of the oligopoly in container shipping services established by the carriers. The participation of shipping companies in the operation of port terminals or terrestrial logistics services, in a process of vertical integration, has worsened the situation.

The reduction in stops and frequency has favoured a process of concentrating flows in a limited number of ports

Container Shipping in the Western Mediterranean

The aforementioned trends have been studied on both a global scale and for the Mediterranean itself (Arvis et al, 2019). However, there currently lacks a specific study of the impact on regional traffic, such as the flows between the countries of southern Europe and the Maghreb.
Understanding container flows in the western Mediterranean and, specifically, the flows between the European and Maghrebi countries of this space, requires a knowledge of how foreign trade has evolved in the area. In this regard, it is worth noting that there has been a decrease in the relative importance of commercial and container flows between the two shores of the Mediterranean, as compared to the evolution of these flows with other spaces. The conclusion here is that there currently exists a trend which is the opposite of regional integration.
From the late nineties up until 2008, trade between the countries of the North and South of the GTMO 5+5[2] experienced a marked upward trend, both in volume and economic value. However, after the crisis, there was a downturn in this trend and, after several years of sharp fluctuations, in 2017, flows were significantly lower than their peak in 2008. This evolution of the foreign trade patterns between the countries of the two shores of the western Mediterranean has meant that since the beginning of the economic crisis, trade integration between these countries has fallen. This decline can be seen in the relative importance of the value of the foreign trade of the European countries members of the GTMO 5+5 with the Maghreb, which dropped from 4%[3] in 2008 to 2.9%. This diminished relative importance of flows between the countries of the western Mediterranean is also reflected in container trade. Between 2008 and 2017, the flow of containers between the two shores of the Mediterranean increased, although not as much as was registered for the whole of the European Union. This resulted in the European ports of the western Mediterranean reducing their quota for total container flows between the EU and the Maghreb, which fell from 82.3% in 2008, to 68.4% in 2017. The conclusion can be drawn, therefore, that, considering the evolution in foreign trade and container flows, the western Mediterranean space is adopting a growing role in global flows, to the detriment of greater Euro-Mediterranean integration.

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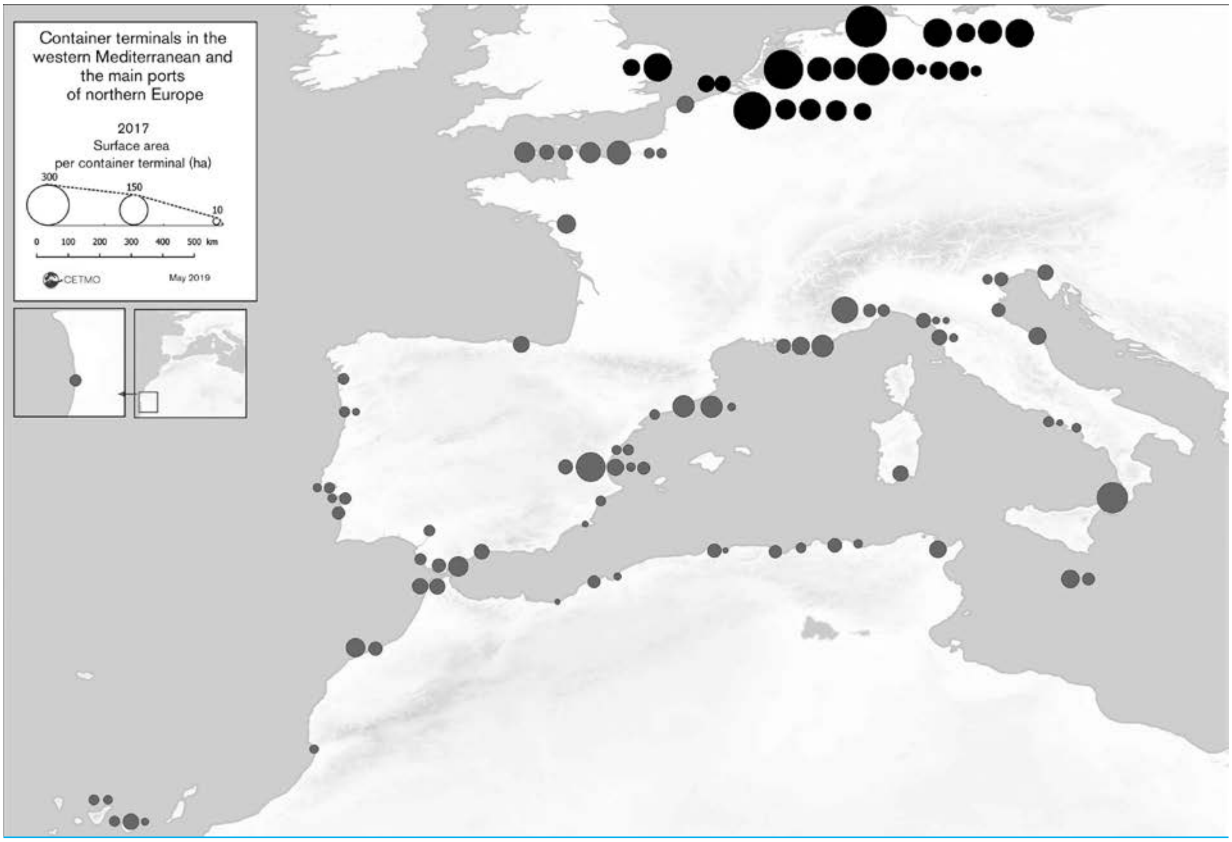
However, this apparent loss of importance of European ports in the western Mediterranean should be considered in light of the lack of a detailed measure of container flows, since it is not currently possible to distinguish transit flows from the existing statistics, which do not strictly reflect Euro-Mediterranean cargo trade. In addition, an increase can be detected in the participation of ro-ro flows and "Other gen-

[2] The GTMO 5+5 is the Group of Transport Ministers of the Western Mediterranean, comprising Algeria, Spain, France, Italy, Libya, Morocco, Malta, Mauritania, Portugal and Tunisia.
[3] All statistical data has been processed by CETMO using the Eurostat databases.

MAP 2 **Surface Area by Container Terminal in the GTMO 5+5 Countries**



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eral cargo" in Mediterranean ports as compared with the total for the European Union.[4] All of this casts a doubt over the decline in the role of European ports of the GTMO 5+5 in the Maghreb's general cargo flows overall, which is ascertained based on an initial analysis of the existing statistical data. There is, therefore, a clear need to further study how container flows are defined and understood.

With these ideas in mind, and as a first step in attempting to improve knowledge on organizing container shipping flows, CETMO has created a descriptive database for the container port terminals in the countries of the GTMO 5+5. This database includes information on both the terminals' physical parameters and management structure. The analysis of this database contributes to transferring and quantifying the global trends of maritime industry outlined above in the western Mediterranean, and allows the patterns of the existing flows in this space to be described in greater detail.

The western Mediterranean space is adopting a growing role in global flows, to the detriment of greater Euro-Mediterranean integration

If we look at the distribution of container terminals in the western Mediterranean (Map 2), two differences can be observed between the ports of the GTMO 5+5 countries:[5] on the one hand, it can be observed

[4] In 2017, ro-ro and other general cargo flows, which often serve as alternatives to containers, accounted for 39.1% of the general cargo traded between the European Union and the Maghreb. Between 2008 and 2017, the participation of the western Mediterranean ports in ro-ro and other general cargo flows, as compared with the total flows between the European Union and the Maghreb, increased from 71.6% to 77.3%.
[5] These include the ports on the Atlantic coast of these countries. The terminals in Libya have not been analysed.

CHART 40 **Distribution of the Terminals' Surface in the Main GTMO 5+5 Ports**

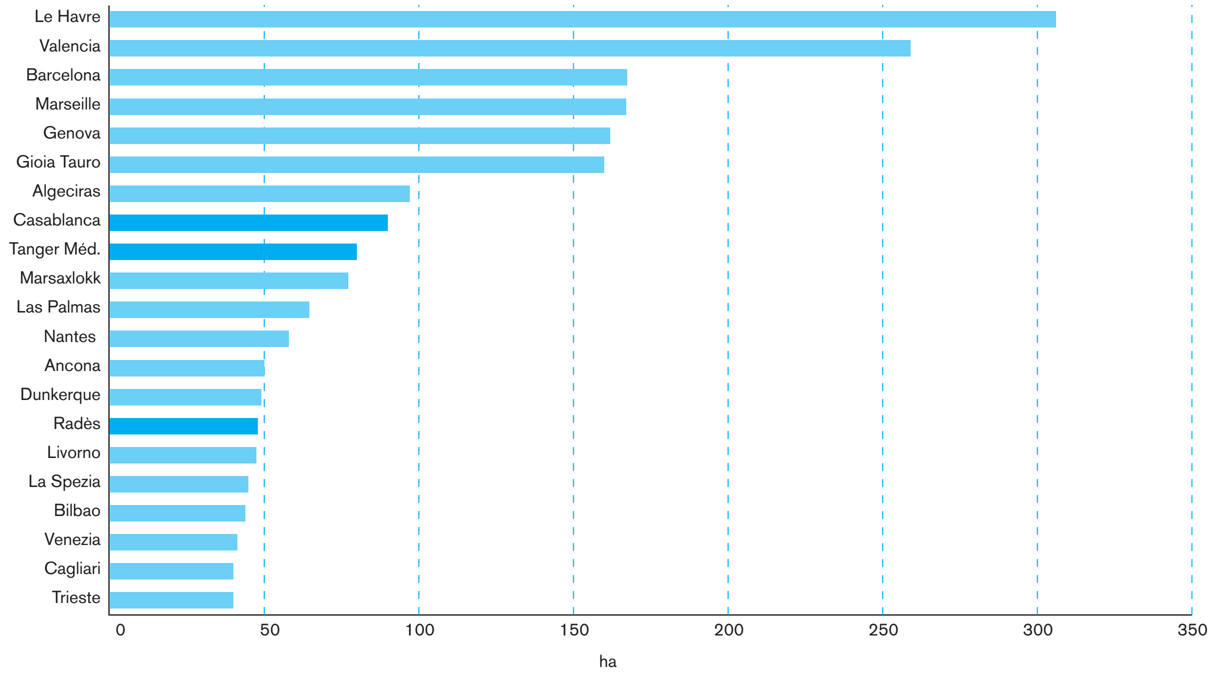

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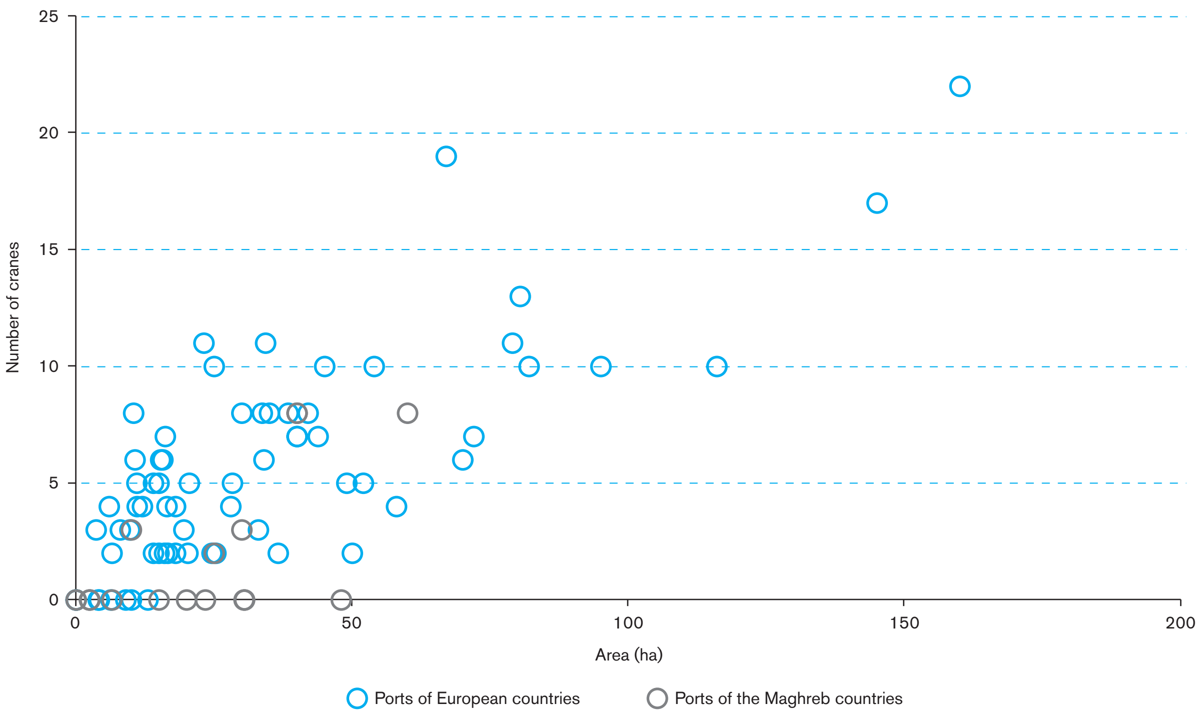
CHART 41 **Relationship between the Number of Cranes and the Surface of Container Terminals in GTMO 5+5 Countries**



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that the larger terminals are concentrated in a limited number of ports. Out of a total of 48 ports with container terminals, the 21 with over 40 hectares used for container terminals concentrate 80% of the total surface area of this type of terminal in the countries of the western Mediterranean. The six ports with over 150 ha concentrate 47% of the total surface area of the terminals. It should be highlighted that there are just three ports with over 40 ha in the Maghreb (Chart 40), which ties in with the second differential factor: the marked difference between the European and Maghrebi ports: while many European ports have more than one large terminal, those of the Maghreb mostly have a single terminal with a very limited surface area. It should be noted that the surface area of the container terminal relates to its facilities, such as the number of cranes, and therefore with the capacity to efficiently accommodate large ships (Chart 41).

The different kinds of operators owning shares in the terminals opens another relevant factor in defining container terminals (Map 3). Two of the big shipping alliances (2M and Ocean Alliance) are shareholders in 32 container terminals of the countries of the GTMO 5+5, which account for 58% of the total surface area. This presence is especially notable in the larger terminals: the alliances are present in 18 of the 24 terminals with over 400 ha and account for 76% of the surface area of this group of terminals. Again there is a clear difference between the two shores of the Mediterranean. While the large alliances are present in a large number of the terminals in European countries, in the Maghreb, these alliances are only present in two ports in Morocco (Chart 42).

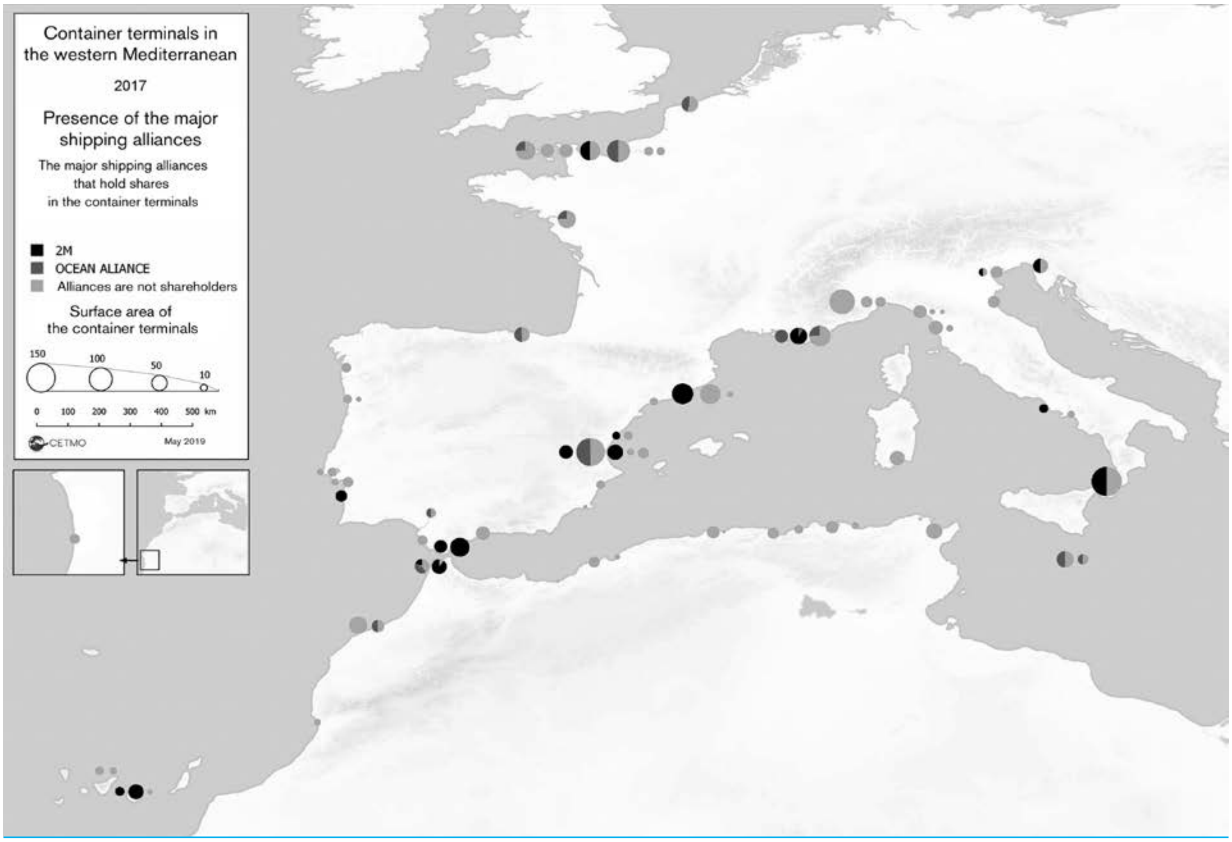
The marked difference between the European and Maghrebi ports: while many European ports have more than one large terminal, those of the Maghreb mostly have a single terminal with a very limited surface area

This quantitative description enables an outline of the effects that the process of vertical and horizontal integration in the container shipping industry has had on container flows in the western Mediterranean. It can be observed that there is a tendency for the large terminals to be concentrated in a limited number of ports (mainly Valencia, Barcelona, Marseille, Genova, Gioia Tauro and Algeciras). It is this limited group of ports that has the capacity to manage transoceanic flows, acting as major redistribution centres on a regional and intercontinental scale, while a large number of smaller ports, like those of the Maghreb, have to rely on feeder services to guarantee their container flows. Tanger Med is the only port in the Maghreb which, because of the technical capacity of its terminals and its shareholding structure, is comparable to the main roadsteads of the European countries of the GTMO 5+5. Thus a pattern of container flows between the two shores of the western Mediterranean can be established, conditioned by the transit function of transoceanic flows towards the countries of the Maghreb. This function can be performed by a very limited number of ports which have the capacity to handle the kind of ships that operate along the major transoceanic routes and the transfer of containers to other lower-capacity vessels. Thus, in 2008, the five main ports on the European shore of the western Mediterranean (Valencia, Barcelona, Algeciras, Gioia Tauro and Marseille) concentrated 74% of the overall flows, a figure that rose to 85% in 2016. It is, therefore, not surprising that the rigidity imposed by the organization of the transoceanic routes (lower number of stops, decreased frequency, congestion spikes) ends up affecting the organization of the maritime services between the European and Maghrebi ports, and, consequently, the organization of the flows linked to imports and exports between the countries of the western Mediterranean.

Future Perspectives of Container Terminals and Flows in the Western Mediterranean

The perspectives of container shipping in the western Mediterranean, bearing in mind the existing container terminal projects, on the one hand reveal a trend that supports the current model, with the creation or expansion of major infrastructure in the main ports (the fourth big terminal in the port of Valencia, Cala Bettolo in Genova or the expansion of Isla Verde in Algeciras or BEST in Barcelona, among others). However, on the other hand, the distribution

MAP 3 Presence of Container Shipping Alliances in Transport Terminals in the GTMO 5+5 Countries



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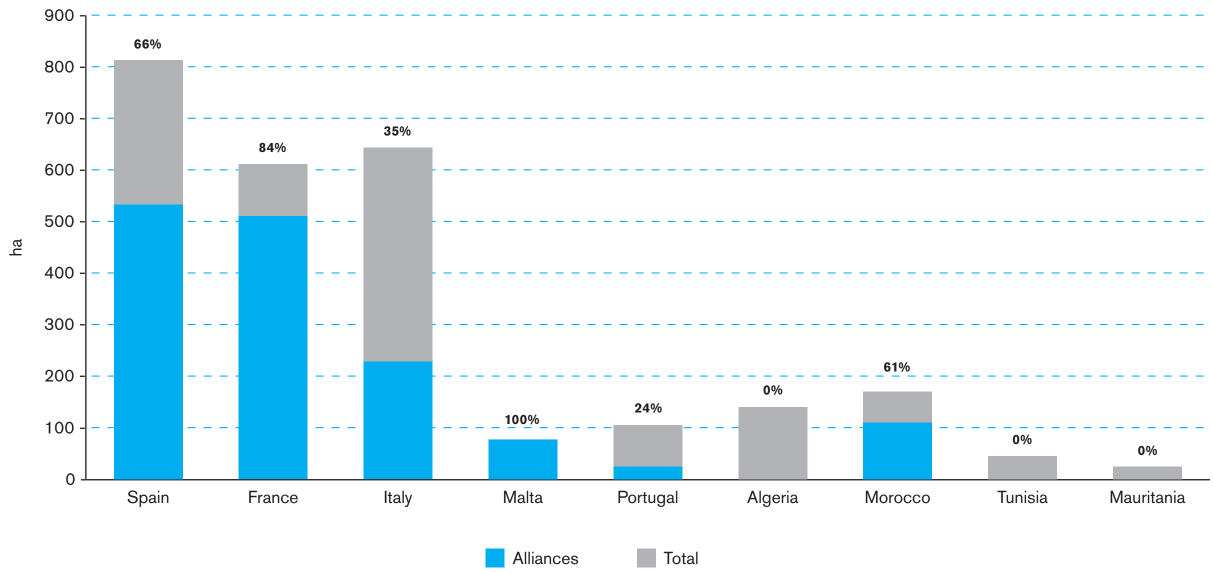
structure of the terminals in the western Mediterranean will be substantially modified with the construction of new port infrastructure in the Maghreb (expansion of Tanger Med, the new ports of Nador West Med in Morocco and Cherchell in Algeria, the effective start of operations at Djen Djen or, in the longer term, the port of Enfidha in Tunisia). This new distribution of terminals will, undoubtedly, affect the present organization of container flows, based on the function of redistributing transoceanic flows towards the Maghreb performed by the main ports on the European side. The need to perform this function in the European ports will disappear in the future, as soon as the ships that operate along the transoceanic routes are able to access and be serviced in the ports of the Maghreb.

The expansion of the number and surface area of terminals in the western Mediterranean brings attention to a set of challenges already being contemplated by the current management of the maritime industry, which include the possible generation of overcapacity in a context of increasing competition between ports. But above all, we should be questioning how this new infrastructure and organization of maritime container shipping can contribute to Euro-Mediterranean integration, the positioning of the western Mediterranean region in the global economy and the formation of more sustainable transport chains.

Conclusions: Challenges of Container Shipping in the Western Mediterranean

As indicated at the beginning of this article, the process of the maritime industry's vertical and horizontal integration of container flows has meant that structuring these flows has been heavily conditioned by transoceanic flows, which has had an unequal impact on maritime industry stakeholders and regional flows. The reversion of these trends in favour of an organization of flows that implies more balanced profit-sharing among stakeholders and spaces is considered to be a necessity. Along these lines, a series of recommendations have already been for-

CHART 42 Surface of Container Terminals with Presence of Shipping Alliances per Country



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mulated by certain international bodies. These recommendations (ITF, 2018) include the reform of the legal structures that regulate competition, improvements in the processes for evaluating port projects and setting port charges, as well as the establishment of port policies that allow a more coherent hierarchization and specialization of ports and their functions. These recommendations need to be agreed upon and applied on a regional scale and, therefore, based on collaboration between countries and port authorities. While these proposals for action are generic, there is a clear need to adapt to regional realities and characteristics.

With the aim of adapting the recommendations to the context of the western Mediterranean, four specific aspects of this space are proposed below that should determine the aforementioned adaptation: the regulatory framework, the organization and structuring of flows, environmental policies and technological and knowledge challenges. Firstly, the different legal structures and existing regulations in the Mediterranean region should be considered. National structures are still largely determinant of port policies and regulatory frameworks, sometimes hampering collaboration between ports, even within each country. Therefore, and as a way of overcoming said limitations and in favour of common policies, the different structures, fora and organizations that promote Euro-Mediterranean collaboration take on particular importance. So too do the policies that can be adopted by the European Union, such as the Trans-European Transport Network and its expansion to countries of the Maghreb, which will have a direct impact on European countries of the Mediterranean.

National structures are still largely determinant of port policies and regulatory frameworks

Secondly, the different functions of the western Mediterranean in container flows should be considered, as well as the complementary function of ro-ro traffic in the flows between the two shores. Collaboration between port agents from the two shores must not overshadow the goal of inserting the Euro-Mediterranean space into transoceanic and transcontinental flows, where, in fact, today it is already established as an essential node in coordinating traffic. This role, together with that performed by ro-ro, should be given its due value, as it allows a recalibration of the negotiating balance between ports on the one hand, and major carriers and terminal operators on the other.

Today's environmental challenges are especially linked to decarbonization processes, which, while affecting the maritime and port industry across the world, take on specific relevance in the western Mediterranean. The role of maritime flows must be considered in promoting more sustainable modes of transport between the two shores. This is, in fact, already happening with the implementation of the Motorways of the Sea project aimed at improving communication between the European countries of the GTMO 5+5. Here, once again, the role of ro-ro services has been of particular importance. On the other hand, any maritime policy will have to consider the recent proposal to create a Mediterranean shipping emissions control area.

Lastly, in relation to the technological and knowledge aspects, on the one hand, we need to consider the challenge posed by the existing gap between the two shores, but also the opportunities that the transport digitalization process might offer the region. Overcoming the technological gap and the appropriate, shared use of information will be particularly relevant for generating knowledge on transport flows in the western Mediterranean, which today can be considered as limited, as previously indicated. This knowledge should, among other things, contribute to confirming or further studying some of the hypotheses outlined in this article and to the specific formulation of shared and regional policies and strategies.

As a final conclusion, the challenge of strengthening Euro-Mediterranean integration, the positioning of the region in the global economy and the development of far more sustainable transport cannot be considered separately from the need for collaborative strategies and policies between the different stakeholders in container shipping and in port management in countries of the western Mediterranean.

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