

TOWARDS ENHANCED CONNECTIVITY AND SUSTAINABILITY IN THE MEDITERRANEAN TRANSPORT AND LOGISTICS SECTOR

Trends in Trade, Maritime Transport, and Sustainability

Centre for Transportation Studies for the Western
Mediterranean (CETMO)
Coordinator

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The **MedThink 5+5** is a network of think tanks that encourages dialogue and research to promote regional integration in the Western Mediterranean, as a part of a wider Euro-Mediterranean region.

The network emerged in 2016 on the initiative of the IEMed in coordination with think tanks and public diplomacy institutions, building on a mandate from the Summit of Heads of State and Government of the 5+5 Dialogue in 2012. This unique platform, composed of more than 30 institutions from Portugal, Spain, France, Italy, Malta, Morocco, Mauritania, Algeria, Libya, and Tunisia, contributes to dialogue, exchange, and joint research on crucial sub-regional areas of cooperation.

Working to strengthen the Western Mediterranean Dialogue, the MedThink 5+5 offers the unparalleled possibility of increasing ownership of policy-making processes. It allows research institutions to transfer their messages to decision- and policymakers, while improving understanding of key challenges, needs and trends that have an impact on sub-regional cooperation.

POLICY STUDY

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IEMed.

The **European Institute of the Mediterranean (IEMed)**, founded in 1989, is a think and do tank specialised in Euro-Mediterranean relations. It provides policy-oriented and evidence-based research underpinned by a genuine Euromed multidimensional and inclusive approach.

The aim of the IEMed, in accordance with the principles of the Euro-Mediterranean Partnership (EMP), the European Neighbourhood Policy (ENP) and the Union for the Mediterranean (UfM), is to stimulate reflection and action that contribute to mutual understanding, exchange and cooperation between the different Mediterranean countries, societies and cultures, and to promote the progressive construction of a space of peace and stability, shared prosperity and dialogue between cultures and civilisations in the Mediterranean.

The IEMed is a consortium comprising the Catalan Government, the Spanish Ministry of Foreign Affairs and Cooperation, the European Union and Barcelona City Council. It also incorporates civil society through its Board of Trustees and its Advisory Council.



The **Centre for Transportation Studies for the Western Mediterranean (CETMO)** is an independent non-partisan think tank and non-profit international cooperation organisation, established in 1988 under the auspices of the United Nations, with the objective of supporting socio-economic development through progress in transport and logistics, especially in the Western Mediterranean.

The CETMO aims at developing regional cooperation at both institutional and technical levels in order to facilitate international transport conditions throughout the Mediterranean and the Western Mediterranean in particular, due to its belonging, participation, and collaborates with an extensive network of over 215 organisations facilitating Mediterranean cooperation. The CETMO also provides policy makers, transport infrastructure managers and logistics operators with practical and innovative analysis and knowledge.



The **Group of Transport Ministers for the Western Mediterranean (GTMO)** is an informal cooperation group composed by the Transport Ministers of the region to promote dialogue and cooperation for the development of transport and to contribute to the Euro-Mediterranean partnership. It was created in 1995 with the support of the ministries of transport of Algeria, Spain, France, Italy, Morocco and Tunisia and it joined the cooperation framework of the 5+5 Dialogue in 2007 with the full participation of all its member countries: Algeria, France, Italy, Libya, Malta, Mauritania, Morocco, Portugal, Spain, and Tunisia.

The group has a rotating presidency and holds a transport ministerial conference approximately every two years to define the strategic lines of the group's next presidency. In addition, the group organises two expert meetings per year, with the participation of senior officials from the respective ministries and observer institutions, to cooperate in the development of the work plan of the rotating presidency.

IEMed.

Policy Study

Content

FOREWORD IEMed	8
A New Opportunity for the Mediterranean Sea. Measures for Improving Intra-Mediterranean Trade Enric Ticó	12
The African Continental Free Trade Area: A New Blueprint for North Africa's Regional Integration Ghazi Ben Ahmed	18
Development, Exchanges and Connectivity, a Mediterranean Maritime Trio Paul Turret	28
The Evolution of Mediterranean Shipping in an Era of Disruptions Jordi Torrent & Maite Roman	36
Meeting the Challenges of Mediterranean Maritime Traffic: Supporting and Implementing a Collective and Sustainable Vision/Strategy by 2031 Gabino González	46
Recent Developments and Human Resource Needs in Transport and Logistics in the Western Mediterranean Mustapha El Khayat	56
CONCLUSIONS CETMO	64

FOREWORD

Roger Albinyana

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In the Western Mediterranean area, as well as in other regions of the world, we are witnessing an era of structural transformations that appear as an inflection point in which the decisions and strategies that are being adopted nowadays will certainly define both the organisation of transport and logistics in the region in the medium and long term. This policy study entitled ***Towards enhanced connectivity and sustainability in the Mediterranean transport and logistics sector*** offers a unique collection of contributions that aim at taking advantage of existing opportunities as a consequence of multiple disruptions striking up in the region triggered by the COVID-19 pandemic and the Russian aggression in Ukraine, among others.

The European Institute of the Mediterranean (IEMed) and the Centre for Transportation Studies for the Western Mediterranean (CETMO) have taken on this stimulating task by continuing for the second year the preparation of a joint policy study that involves various authors who are experts in the field, while also unveiling some recommendations of public policy addressed to the Maltese Presidency of the Group of Transport Ministers for the Western Mediterranean (GTMO 5+5). Indeed, this publication released as a policy study comes within the framework of the MedThink 5+5 network of Western Mediterranean think tanks, a multidisciplinary platform of exchange associated to the 5+5 Dialogue, which brings together policymakers, practitioners and academics from the Western Mediterranean area.

Considering transport and logistics as one of the most relevant sectors to foster socio-economic development and regional integration in the Western Mediterranean, the MedThink 5+5 network has been committed to promoting

debate and knowledge-sharing on the issue, building upon support and expertise of the CETMO as Technical Secretariat of the Group of Transport Ministers for the Western Mediterranean (GTMO 5+5). As an example of this commitment, the MedThink 5+5 network, in collaboration with the CETMO and the Maltese Ministry for Transport, Infrastructure and Capital Projects, convened on 5 October 2021 in Valletta (Malta) a seminar entitled “The Western Mediterranean Transport and Logistics Sector in the post-Covid 19 Era: Seizing New Opportunities, Accelerating Transitions”, contributing to the discussions undertaken by the Ministers during the tenth Conference of Transport ministers of the countries of the Western Mediterranean, held on the same location on 6 October 2021. In this context, this Policy Study aims at giving response to the challenges arising from major geopolitical tensions, transformations in global transport, production, and consumption systems, along with the climate crisis.

This publication comprises six articles that were commissioned within the framework of this joint endeavour by the MedThink 5+5 network and coordinated by the IEMed and CETMO. In particular, Enric Ticó argues that the pandemic has led to a change in production patterns, bringing them closer to the areas of consumption and, therefore, to the Mediterranean Sea itself. Indeed, certain supply chains will shift from global to regional, so the improvement of the area’s supply chain is key. Against this backdrop, even if a Mediterranean customs union seems almost impossible to envisage, there are alternatives that would improve the current situation. Success regarding the development of intra-Mediterranean commerce could be achieved by firmly committing to digitalisation in the area,

with technologies that provide legal certainty in customs and trade procedures with third parties, enlarging the countries party to the Convention on a common transit regime, to allow the entry of countries on the shores of the Mediterranean Sea, as well as by harmonising customs legislation and promotion of multilateral conventions.

Moreover, Ghazi Ben Ahmed reasserts that in Africa regional integration is perceived by policymakers and academics as an important strategy to enhance intraregional trade, boost economic growth and ensure the integration of African countries into the global economic system. It can also lead to the structural transformation of African countries through economies of scale, improved competitiveness, more efficient resource mobilisation and the promotion of regional value chains. Nonetheless, North African countries should emphasise regional integration's goal towards ensuring the provision of critical infrastructure, improving the quality of institutions, and building human capacities and stock of physical capital. The donors and other multilateral international financial institutions, as well as the private sector, can significantly positively impact regional integration in the North African sub-region to develop an adequate strategy for supporting more directly all regional sub-groupings in Africa. Furthermore, the potential benefits of regional integration can also help override the current tensions between Morocco and Algeria.

For Paul Turret, the growth of trade will need efficient maritime transport offering a speed that requires adapted logistics in the Euro-Mediterranean economic bloc. For the past twenty years, the main question has referred to the reduction of road flows through alternative maritime solutions. As soon

as the Euro-Mediterranean regions and some countries of the basin are economically integrated, maritime transport will be fostered through the development of the other countries on the Southern and Eastern shores. Against this backdrop, a dense network of maritime lines, especially ro-ro (Roll-on, Roll-off), interconnects the regions of the Mediterranean basin. The Motorways of the Sea networks have already been developed in response to market demands and geographical consistency. To have a new impulse, maritime transport must be effective and ecologically efficient; this is the role of shipping companies and, increasingly, of complementary rail transport. The ro-ro mode is better suited to the speed requirements of European logistics and to the integrated peripheries of the Maghreb and Turkey.

Other authors, Jordi Torrent and Maite Roman, warn against a combination of factors external to logistics chains, coupled with internal tension in logistics and shipping, that have given rise to the perfect storm. As a result, the transport and logistics sector is now struggling more than ever to deliver an efficient and predictable service. At the global level, the surge in post-pandemic demand and the rise of e-commerce have changed the quantities of products ordered and the characteristics of this demand. Consequently, in a short run, fluctuating demand combined with shipping supply similar to pre-pandemic levels put a strain on logistics chains and the transport sector struggled to adapt. Competition for shipping, especially container shipping, has increased, thus triggering shipowners to raise freight rates to unprecedented levels throughout 2021 and 2022. In addition, the low level of diversification in the maritime sector, especially container shipping, as well as

the important degree of concentration of actors within the maritime transport sector particularly is challenging the survival of small players in the sector, considering the investments required to increase economies of scale.

As maritime traffic increases in the Mediterranean, its negative externalities have a growing impact on the environment and human health. Gabino González's article reminds us that when Mediterranean actors sit around the table to co-operate, it is possible to effectively tackle the environmental challenges posed by maritime traffic. Through the Mediterranean Strategy for the prevention, preparedness, and response to marine pollution from ships, the Contracting Parties of the Barcelona Convention have adopted a common vision to address the challenge. This strategy does not remain a dead letter and is translated into concrete measures that will be applied in the years to come. This is the case of the designation of the Mediterranean as an Emission Control Area for Sulphur Oxides, which will contribute to a significant improvement in air quality in ports and at sea. The result of coordinated work between Mediter-

anean actors, this regulation will also encourage the maritime transport sector to make its green transition by adopting cleaner energy sources.

Finally, Mustapha El Khayat describes the current environment of vulnerability in various professions in the transport logistics value chain after the lockdowns triggered by the global pandemic. Against this backdrop, the solution to the current human resources crisis in logistics transport must naturally respect environmental requirements, while at the same time mastering new technologies such as automation, digitalisation, and artificial intelligence. The challenge involves striking a balance between the necessary competitiveness and the need to create more skilled and highly skilled jobs for European seafarers. At the same time, the needs in terms of human resource of the northern shore of the Mediterranean logistics chain can potentially be met by the countries on the southern shore. Mobilising them calls for a smart, circular migration policy based on innovative training that includes digitalisation, automation, and artificial intelligence.

A New Opportunity for the Mediterranean Sea. Measures for Improving Intra-Mediterranean Trade

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Organisation for Logistics, Transport and Customs Representation)

Introduction

The Mediterranean Sea has currently become one of the main centres of international transport through which large quantities of goods are moved every year. Its position as a strategic transit area for a large amount of goods, especially transported by sea, makes it a logistical node of capital importance. According to the report of the Spanish Short Sea Shipping Statistical Observatory (SSS) for the year 2021, overall SSS traffic on the Mediterranean coast increased by 26.9%, exceeding the pre-pandemic figures.

The Mediterranean geographical area is characterised, among other things, by the great heterogeneity of countries and actors that are present in the institutional, political, economic, and even social spheres, as it is the meeting point of three continents. This means that, although the movement of goods is a very active sector, there is still much room for improvement in the development of trade among actors of such an area (it has more strength as a logistic node than as a commerce centre itself).

The strengthening of trade relations between all countries of the Mediterranean area should have a positive impact on a global level, facilitating the joint development of all those countries. However, the aforementioned existing heterogeneity at the political and economic level sometimes acts as a brake or blocking factor in the development and commercial collaboration among the parties.

The first, or simplest, analysis of the applicable regimes or the nature of transactions would be that of a North-South division. This makes sense due

to the fact that the majority of the northern front countries are members of the European Union (EU) and, consequently, of the Customs Territory of the Union (CTU), while the remaining are sovereign and independent countries with a very heterogeneous profile, including political or cultural issues. This makes difficult the establishment of stable and long-lasting relations among the parties.

We are therefore far from being able to consider that there is a trade regime specific to the Mediterranean Sea, or to companies in such area, apt for the facilitation of international transactions. The current situation represents a historic opportunity for this commercial development: the pandemic has led to a change in production patterns, bringing them closer to the areas of consumption and, therefore, to the Mediterranean Sea itself. Certain supply chains will shift from global to regional, so the improvement of the area's supply chain is key.

North-South Comparison. The Key Factor of EU Membership and the Application of Customs Regulations

The fact that many of the countries on the northern shore of the Mediterranean Sea are part of the EU and the CTU has an important impact on trade transactions, particularly as a result of their customs and taxation regimes, as well as the EU's own trading power. These countries belong to a common market and to the Customs Union, having ceded their sovereignty over external trade and the protection of their borders at the trade level.

All EU countries are subject to the free-market regime and internal transactions carried out among private operators in these countries are not considered as exports and/or imports, but as intra-community transactions. For example, beyond internal operational issues, as far as the legal regime is concerned, there is almost no difference between a German company that manages the import of a product through the port of Hamburg or through a Mediterranean port such as Valencia.

Moreover, the European Union consists of a market of approximately 447 million of natural persons or potential consumers, according to the Spanish National Statistical Institute, which acts as a lever for the development of trade with third parties as well. In essence, an internal market has been created with strong internal demand capacity, and with the capacity to negotiate externally with major strength. In addition, this market creates institutional, commercial, and regulatory stability, which is key for the economic development of its member countries.

In accordance with the Union Customs Code (Art. 3), EU customs authorities shall take measures aimed at:

- a) protecting the financial interests of the Union and its Member States;
- b) protecting the Union from unfair and illegal trade while supporting legitimate business activity;
- c) ensuring the security and safety of the Union and its residents, and the protection of the environment, where appropriate in close cooperation with other authorities; and
- d) maintaining a proper balance between customs controls and facilitation of legitimate trade.

The protection of financial interests is implemented mainly through the collection of import and, to a lesser extent, export duties.

The remaining measures are implemented through customs controls on the import and export of goods to and from the CTU. As part of these controls, customs authorities have to carry out the relevant security checks, which are currently carried out through the Entry Summary Declaration (ENS) and checks on issues such as the origin of the goods and the nature of the goods, to see whether such goods are allowed to be imported and whether they meet all the requirements to be distributed among consumers.

With regards to the security declaration, some changes in the system are taking place seeking to provide greater guarantees to prevent the entry of prohibited goods and the execution of possible terrorist attacks. The new system is the ICS2, under which carriers or freight forwarders have to make two types of declarations to the customs authorities: the PLACI, prior to loading the goods onto the arriving means of transport, and the full ENS, prior to the arrival of the goods at the first Customs office of arrival at the CTU.

As for controls on the goods themselves, and avoiding being excessively specific in this respect, the following controls are currently carried out in every country of the EU by the different competent authorities:

- Health Inspection: on products of animal or plant origin intended for human consumption, medicines, cosmetic products, medical devices, and insecticides.

- **Veterinary Inspection:** on live animals, products of animal or plant origin not intended for human use or consumption, and veterinary medicinal products.
- **Phytosanitary Inspection:** on organisms harmful to plants, on certain plants that may contain them and fertilisers of plant origin.
- **Commercial Quality Inspection:** on certain agricultural products including poultry meat, fishery products, eggs, cut flowers, fruit and vegetables and canned fish, and on certain electronic products.
- **CITES inspection:** on the import and export of certain endangered species of flora and fauna, in order to obtain a CITES Certificate.
- **Product safety:** new control measures on the import of certain goods regarding the applicable product safety standards. Goods subject to conformity checks include textiles, footwear, electrical equipment and toys.
- **Pharmaceutical controls:** controls on the import of medicines for human use, medical devices, personal hygiene products, cosmetics and biocides for personal use.
- **Controls on imports of timber and timber products from countries with a Voluntary Partnership Agreement in force (currently Indonesia):** The FLEGT competent authority will verify the validity of the FLEGT licence in accordance with the applicable legal requirements.

Carrying out these controls entails administrative tasks and costs. This is also a very important differentiating factor, since the countries of the northern shore are subject to the same regime. On the other hand, initiatives are being taken within the EU that will make EU

Customs more competitive, such as the creation of a Customs Single Window, which will enable the exchange of information in real time between the different customs offices and will serve to make processes more efficient. It should be borne in mind that carrying out customs controls involves a cost, not only derived from the payment of the corresponding fees, but also from the payment of fees to the service provider: the stay of the goods in the customs facilities -which, in the case of blockade of the goods due to discrepancies in the valuation of the documentation, raises the cost to thousands of euros-, payment of fees to the port terminal, port taxes... not to mention the possible destruction of the goods in the case of perishable goods. Moreover, EU membership generates a regulatory stability that allows investments in subjects like training, both from the Administration and the economic operators' side.

In consequence, the main conclusion that can easily be drawn is that trade transactions among actors on the northern Mediterranean coast (more specifically, among CTU actors) are free and agile, as opposed to operations where one of the participants (or none of them) is not part of the EU, in which, although many facilities are approved in free trade treaties, are subject to controls and red tape.

Clearly, each territory has the obligation to defend its sovereignty and protect its citizens, so a Mediterranean customs union seems almost impossible to envisage, but there are alternatives that would improve the current situation. One of these possibilities would be the setting up of a forum aimed at harmonising existing regulations and procedures, since regulatory

convergence would generate legal certainty throughout the area and would allow the reinforcement of internal logistical processes.

Another of the existing barriers to the fluid movement of goods is the requirement for economic operators, or their customs representatives, to work with transport and customs printed documentation, which triggers costs, risks of loss and consequent blockades of goods at border control posts, and problems in the analysis of documentation by the official at the border post, due to the multitude of formats and regulations for filling in the existing documents.

It also seems clear that it is necessary to work on the promotion of digitalisation in two areas: firstly, to put an end to the need to hand over printed documentation to counterparts and authorities and, secondly, to implement computer tools that permit the possibility to work with authentic documentation at any time and, to permanently control the status of the goods. A successful example would be the use of blockchain technology, for example, by the Egyptian authorities. In a market with different counterparts, tools that provide security and immediacy are necessary.

The customs regulations already offer a solution to problems such as the blockade of goods -although it is necessary to develop it from a practical point of view-, with the figure of the Authorised Economic Operator (AEO), which is an operator trusted by the customs administration. As it has been designed, this figure allows for favourable treatment by the customs authorities to AEO operators, such as fewer controls and priority in queues. For the time being, only the EU has recognised this figure in the Mediterranean area, but it could repre-

sent a milestone for the streamlining of customs procedures among operators in the countries of the area.

Last but not least, there is one figure that would allow the establishment of alliances at the customs level, and that would also allow for an increase in trade exchanges, such as the promotion of the transit regime between all the countries of the Mediterranean area, so that goods could transit freely within them.

Promotion of Intra-Mediterranean Trade: the Free Trade Agreements

The EU (and its member States) have entered into several free trade agreements with a lot of the countries on the southern shores of the Mediterranean, whereby free trade areas are gradually being established. Progress is also being achieved in this regard between non-EU countries. The great benefit derived from the signing and entry into force of these free trade agreements is usually the elimination of duties on trade (or the establishment of zero tariffs) among operators in the relevant countries. As it is well known, duties are one of the most important elements of a country's fiscal and taxation policy, as well as an important element of protection for the national productive sector. Another important milestone is the entering into force of the Pan-Euro-Mediterranean Regional Convention on Preferential Origin Rules (Pan-Euro-Mediterranean Convention), which establishes uniform rules of origin and cumulation and is currently under review. The establishment of common rules of origin is key, as it is the basis for the application of all kinds of trade measures.

The conclusion of the aforementioned could be that trade facilitation through the setting up of a free trade area is the right track, although there is still much room for action. There are many opportunities for developing collaboration between countries and economic operators in the region, that would also have the effect of strengthening the area itself as a global economic hub and generating exponential growth.

Particular Issues in Maritime Transport - Short Sea Shipping

In order to achieve the consolidation of the Mediterranean Sea as a leading global trade area (apart from its strategic position as a transit and connection area for global routes), it is essential to promote shortsea shipping between countries on the Mediterranean coast. This concept is defined by the Spanish Association of Short Sea Shipping as “the movement of goods and passengers by sea between ports located in the territory of the European Union or between those ports and ports located in non-European countries with a coastline on the seas surrounding Europe”. It seems clear that this is an ideal means of transport for trade among Mediterranean countries.

That said, although the price factor is always very important, the key element when choosing a ship as a means of transport is time. In addition to the necessary availability of routes with enough departures and arrivals, it is essential to ensure that goods do not remain blocked at border posts for longer than strictly necessary. This requires the promotion of “24/7” ports fully operational and provided

with enough staff both from private companies and officials from the various administrations in charge of customs and special controls.

In addition, an improvement in customs facilities should be implemented in terms of the construction of unique Border Control Posts that allow all controls to be carried out at the same time, in order to comply with the Customs Single Window regulated in the Union Customs Code (UCC). Another measure to put in place would be the construction of adequate terminals and multimodal facilities for goods to follow their route, whether by train or truck, to their destinations.

Conclusions

The following conclusions can be drawn from the thoughts and ideas foreseen in the previous sections:

- Although progress has been achieved in trade integration in the area, more multilateral agreements should still be encouraged. This would ensure (i) the stability and continuity of trade operations among companies in the geographical area of reference, regardless of geopolitical issues, and (ii) the consolidation of common multimodal policies.
- It is necessary to work on the harmonisation of customs regulations and customs procedures to provide legal and operational security for economic operators, as well as to invest in the training of civil servants and operators’ staff, in order to increase operations in the area.
- Shortsea shipping is essential for the development of the area. In order to boost it, it is necessary to execute the setting up of new

routes and corridors, to streamline the actions to be carried out at border control posts and to reinforce multimodal actions.

- Digitalisation is key to the commercial integration of the area. To this end, the promotion of compatible and open platforms and programmes should be achieved.

Recommendations

The success regarding the development of intra-Mediterranean commerce, could be achieved implementing the following recommendations:

- A firm commitment to digitalisation in the area, with technologies that provide legal certainty in customs and trade procedures with third parties.
- Possible enlargement of the countries party to the Convention on a common transit regime, to allow the entry of countries on the shores of the Mediterranean Sea.
- Harmonisation of customs legislation and promotion of multilateral conventions.
- Strengthening of the Authorised Economic Operator (AEO) figure.

Bibliography

SHORTSEA PROMOTION CENTER – Asociación Española de Promoción del Transporte Marítimo de Corta Distancia (2021). *Observatorio Estadístico del TMCD en España*. Shortsea Retrieved from: Observatorio-Estadístico-2021def.pdf (shortsea.es)

NATIONAL STATISTICAL INSTITUTE – Instituto Nacional de Estadística (2021). Una población creciente, excepto en 2020. INE. Retrieved from [https://www.ine.es/prodyser/demografia_UE/bloc-1a.html?lang=es#:~:text=El%201%20de%20enero%20de,la%20Uni%C3%B3n%20Europea%20\(UE\).](https://www.ine.es/prodyser/demografia_UE/bloc-1a.html?lang=es#:~:text=El%201%20de%20enero%20de,la%20Uni%C3%B3n%20Europea%20(UE).)

REGULATION (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013R0952-20200101&from=EN>

SHORTSEA PROMOTION CENTER – Asociación Española de Promoción del Transporte Marítimo de Corta Distancia. Definition of SSS. Shortsea. Retrieved from <http://www.shortsea.es/index.php/iquienes-somos/definicion-sss>

The African Continental Free Trade Area: A New Blueprint for North Africa's Regional Integration

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The African Continental Free Trade Area (AfCFTA) comes at a time of great instability in the North African region, compounded by a pandemic with severe economic and social impacts. As the subregion's economic growth falters, current account and fiscal balances are deteriorating (drop in oil revenues, remittances, FDIs, and tourism) and public debt is projected to rise significantly.

The crisis that began with the Tunisian revolution resulted in a near-universal failure to implement the long-term structural reforms required to transform the rent-seeking and state-dominated economies into modern ones that embrace both digital and ecological transformation and recognize the healthy impact of competition and private enterprise. There has been much talk about structural reforms, but a rather limited cohesive commitment to action, as the need to confront short-term problems over long-term problems prevailed.

However, the AfCFTA offers a unique opportunity for the North African region – as a subregion of the African continent, as well as individual countries – to rethink its supply chain, strengthen trade and regional integration, and become a more integrated subregion in the Global Supply Chains (GVCs). Trade and integration – within North Africa and with Africa – can provide an opportunity to enhance regional trade relations by establishing safe and resilient regional supply chains of goods and services in the post-COVID era, unleash private sector forces for North African dynamism, and position the subregion as a hub in Africa and a global player.

However, the main constraints on regional trade development in North Africa, such as inadequate and poor

transport infrastructure, costly logistic (except for Morocco) energy and telecommunications networks, together with institutional arrangements for their management and maintenance, structured and regulated cross-border markets, and persistent tariff and non-tariff barriers to trade, including restrictive rules of origin, weak legal environments, and stifling procedures, account for enormous losses in regional trade and economic growth.

North African countries will have to simplify and harmonize complex and lengthy trade and customs procedures, do away with restrictive rules of origin, and tackle corruption and other informal trade barriers. They will also have to harmonize essential policies and institutions among trading partners. These impediments call for action and require investments at several levels with a focus on the regional dimension of infrastructure.

Development partners, from donors to IFIs and Development Banks, will have to take a regionally integrated approach to infrastructure development and seek new and innovative ways to finance African infrastructure. These will include the development of infrastructure bonds for the continent.

Regional Integration Can Be Elusive

The Abuja Treaty and the African Union's 2063 programme enshrine regional integration as key to stimulating economic growth in participating countries through increased trade, economies of scale, knowledge, and technology transfer. The objective is to establish a single market for goods and services across the continent, allow the

free movement of business travellers and investments, and create a continental customs union to streamline trade and attract investment. The continental agreement raises hope for the success of this integration and, ultimately, a means to eradicate poverty, create jobs and achieve the SDGs promoted by the UN.

In Africa, regional integration is seen by policymakers and academics as an important strategy to enhance intra-regional trade, boost economic growth and ensure the integration of African countries into the global economic system. It can also lead to the structural transformation of African countries through economies of scale, improved competitiveness, more efficient resource mobilisation and the promotion of regional value chains. With this in mind, several regional economic communities have been formed in Africa since the years of independence, such as the Arab Maghreb Union (UMA).

The AfCFTA begins with the elimination of tariffs for 90% of the products traded and the rest will be done gradually. In this context, impact studies on trade and on economies are very useful in giving an idea of the extent of the changes that such an agreement could bring about at the economic level, as well as a means of informing public decision-makers.

Ex-ante assessments of trade liberalisation between North African countries and the rest of the continent, within the framework of the AfCFTA, analyse production and value added by industry and by foreign trade. Therefore, these assessments address the effects of the creation and /or diversion of trade with African and non-

African partners. It also analyses the impact of the agreement on the well-being of households, on the use and remuneration of factors, employment (skilled, medium-skilled, and unskilled labour) and the variation of relative prices. At the sectoral level, the assessments focus on the industrial sector by trying to know if the AfCFTA agreement will promote the integration of North African countries in Global Value Chains, in this case in the industrial sector, and what will be the effects and channels of transmission of this liberalisation in this sector.

For instance, Tunisia and Morocco's ambition is to integrate further into GVCs and improve their integration rate to reap the benefits of AfCFTA and avoid problems related to rules of origin. The implementation of the AfCFTA agreement would allow, a priori, both the Tunisian and Moroccan industries to benefit from the entry of inputs at lower costs from the African continent and enhance their competitiveness to gain access to a large market. This intuition is backed by statistical data on intra-African trade which shows an increasingly important dynamic in terms of trade in manufactured goods.

"Whereas the AfCFTA could significantly boost intra-regional trade in Africa and promote economic growth, it can also entail costs, and its benefits may not be necessarily uniformly distributed between and within countries. Therefore, leaders often have legitimate concerns that further trade integration of their economies with those of other countries may benefit some industries and penalise others, may have negative effects on profits and employment prospects in some sectors and skill

levels, and may reduce fiscal revenues” (IMF, 2019). This highlights the need to carefully assess the potential effects of the AfCFTA on growth and income convergence or divergence and the policies that should be put in place to maximize regional integration benefits and mitigate its negative effects on some countries.

Studies and impact assessments may have overstated the benefits of regional integration. Most have focused on trade integration – the benefits for countries in Africa from trading with each other, removing tariffs and using proxies for non-trade-barriers.

Regional – as opposed to global – trade integration has an upside and a downside. The upside is trade creation – the fact that the countries trade more – and the downside is trade diversion – countries trade within the trading bloc whereas it would be more efficient to trade with the rest of the world. More plainly, these commodity-dependent, low-income countries have little to gain from trading with each other because they produce nearly the same things.

Although there is no reliable method for the quantitative assessment of the dynamic effects of trade integration, dynamic effects appear to have a greater impact on economic processes than static effects because of their deeper scope. Moreover, in the African context where countries are at different levels of development, the appropriation of the dynamic gains resulting from regional integration is likely to be long in the relatively less advanced countries in view of the weakness of the institutions and the shortcomings present in the education systems.

Regional Integration in North Africa: A Call to Action

The North African region is the least economically integrated in the world. As they strive to create more jobs, attract more investment, boost growth, and recover from the pandemic, countries of the North African region have today a strong economic incentive to accelerate their efforts at regional integration. What is lacking is not a rationale or capacity to integrate, but a sense of urgency to prioritize and move forward with integration.

It is critical to strengthen and enable the strong historical and socio-economic linkages that exist between countries of the Maghreb and those of Sub-Saharan Africa. In anticipation of the African Continental Free Trade Agreement (AfCFTA), now is the time to expand and deepen existing platforms for regional cooperation, including in agriculture and digital sectors where progress is most needed, and to explore additional opportunities for regional integration between North Africa and Sub-Saharan Africa.

While the challenges of establishing – and sustaining – regional trade, infrastructure and institutions are significant, African countries are on the cusp of important regional integration initiatives that will provide much-needed efficiency gains, diversification, trust building and green growth – all of which will play a catalytic role in economic growth and poverty reduction in the wider region.

It needs to be understood that free trade agreements are not a zero-sum game. These agreements are of little

use unless they serve their purposes well. A classic example would be Tunisia's Deep and Comprehensive Free Trade Area (DCFTA) with the European Union, where the proposed agreement does not reflect the objectives pursued in the renewed partnership between the EU and Tunisia and puts too much emphasis on free trade, which has had the effect of creating a climate of suspicion. Since 13 October 2015, the date of the launch of negotiations, progress has been limited due to apprehension about Tunisia's ability to face competition from European companies, or its ability to take advantage of "unrestricted access" to the European market, in particular in services, in the absence of an agreement on mobility. This strongly influenced public opinion, which felt, rightfully, a lot of scepticism with the Tunisian and European efforts to reach a fair agreement, compounded by failure in communication and pedagogy on the one hand, and demonisation of the DCFTA for political purposes, on the other. Therefore, a careful and calibrated approach is required for having a fruitful free trade agreement. In that sense, transition measures are necessary to build capacities and meet the increasingly complex challenges and new opportunities at regional and global levels.

In other words, any free trade agreement needs to sharpen economic focus and spur recovery. The health crisis offers new opportunities for the North African subregion to serve as a regional backup for greater resilience of EU logistic hubs called upon to relocate to the region. To eliminate single-source dependencies and to establish a flexible and adaptable supply chain, product integrators,

sub-system suppliers, and component suppliers will source, assemble, and deliver from their own backyards i.e., the North African subregion. More specifically, in places where their intellectual property can be protected, their talent can come together, and they can perform product design and services. The challenge will then be for the North African countries to adapt their offer and be able to respond to any European dynamic geared toward the regional reorganisation of the production and supply model and become a hub between the EU and the rest of the African continent.

The EU cooperation should go beyond merely providing technical expertise in formulating agricultural and blue economy-related policies, supporting agroecological practices, and promoting smart agriculture and aquaculture concepts... It should be participative also for its own interest.

Trade liberalisation per se is not the issue, the focus should be on capacity building and a better overall business and economic environment with efficient trade facilitation focusing on transport costs, custom clearance efficiency, and trade finances. This aims to increase sustainable trade and will attract foreign investors and enhance North African countries' participation in international value chains.

The linchpin of a successful AfCFTA is a long-term vision which is crucial to make the notion of partnership credible, to give the necessary incentives to its 54 members to carry out a consistent set of reforms, and to ensure that these reforms are underpinned by the strong approbation of the broader citizenry, especially the youth and the private sector.

Conclusion and Recommendations

Regional integration can ultimately help to reorganise the productive structure within the North African sub-region according to the natural and factor endowments of the member economies, as well as the quality of regional infrastructure. Such an efficient allocation could be beneficial to the economic growth of the region as a whole.

The crucial role assigned to trade in economic integration generally overlooks other fundamentals of economic growth. Regional integration dominated by trade plays a less crucial role in spurring economic growth and income convergence. Therefore, North African countries should place more emphasis on the goal of regional integration towards ensuring the provision of critical infrastructure, improving the quality of institutions, and building human capacities and stock of physical capital.

The donors and other multilateral international financial institutions can have a significant positive impact on regional integration in the North African subregion to develop an adequate strategy for supporting more directly all regional sub-groupings in Africa.

It is undeniable that the European Union and its member states have contributed substantially to helping North African countries since 2011 and have kept these economies afloat. But today, this subregion needs to get out of the water, take a qualitative leap, and get out of the trap of middle-income countries. And this is the moment for Europe. The moment to anchor the North African

subregion and the rest of the continent to the European area with a long-term, explicit, and ambitious concerted vision, and to put in place new financial instruments that accompany the implementation of this vision.

This should prompt North African countries to resume (or start) negotiations with the EU. A shrewd agreement encompassing a new contract/project and focusing on hubs in sub-regions and variable geometry could promote economic modernisation and growth, to strengthen and stabilise the region.

But the fate of the AfCFTA does not only rest in the hands of the public sector. For free trade to truly reach its full potential, it must be coupled with private sector investments that bridge the infrastructure and connectivity gap and give African businesses the tools and resources they need to compete in African markets. By promoting competition and attracting private capital, states will be able to develop transportation networks, bolster internet connectivity, and surf on the wave of digitalisation sweeping across Africa.

The private sector also has a pivotal role to play in building reform momentum for trade and accelerating the implementation of AfCFTA. Private sector alliances between businesses from different countries are uniquely positioned to convince and demonstrate that facilitating cross-border trade, addressing non-tariff barriers, and harmonising policies and regulations will transform the continent. Furthermore, the potential benefits of regional integration may override the current tensions between Morocco and Algeria.

Bibliography

IMF, (2019), Recovery amid elevated uncertainty. Regional Economic Outlook: Sub-Saharan Africa. Washington, DC, April. Retrieved from <https://www.imf.org/-/media/Files/Publications/REO/AFR/2019/April/English/sreo0419.ashx>

Development, Exchanges and Connectivity, a Mediterranean Maritime Trio

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The history of post-war Europe is largely that of the economic integration that made political cohesion possible. The Europe of the original group of six founding countries has expanded westwards (UK, Ireland), southwards (Greece, Spain, Portugal) and northwards (Sweden, Finland) before integrating eastern Europe and the two Mediterranean islands of Cyprus and Malta. Non-political, but just as strategic, is the economic partnership to be built with non-European Mediterranean countries. Economic integration, whether it be community or partnership-based, has allowed the multiplication of investments, productive processes, and exchanges. As soon as the Euro-Mediterranean regions and some countries of the basin are economically integrated, maritime transport will develop with the development of the other countries of the Southern and Eastern shores. A dense network of maritime lines, especially ro-ro, interconnects the regions of the Mediterranean basin. Can maritime transport do more? Can it do better? It is as much a question of the service offered as of the environmental performance and the modal complementarity.

Insular Bases and Motorways of the Sea

Maritime transport in the Mediterranean Basin has gone through several phases. The first corresponds to the connectivity with the islands of each country (Balearic Islands, Corsica, Sardinia, Sicily) facilitated using ferries and ro-ro ships since the 1970s. For a long time, weakly developed and reservoir of internal migrations, these islands have

become very frequented regions with the development of tourism and require intense links for their economic development. Of course, the European policy of regional aid is also important.

Even today, the dynamics of Mediterranean companies are based on the intensity of passenger and freight flows with the islands. Naturally, there are national differences in the level of demography, development, and tourism of the various islands, but all feed the need for strong connectivity. Several maritime lines also benefit from public aid (delegation of public services). The Mediterranean islands, with their greater economic integration, have gained a very high coverage of maritime lines over the last 40 years.

The island connections are at the basis of the historical maritime activity of companies in the Western Mediterranean basin. There used to be large public companies, but they have experienced the same fate of privatisation. The SNCM became Corsica Linea controlled by Corsican economic interests. In Italy, Tirreno was sold to a private competitor, Moby Line (Onorato family). In Spain, Trasmediterranea has had different owners, with the last sale of the Balearic Islands' connections to Grimaldi group dating back to 2021¹. For these companies, connectivity with the islands is a source of structural activity and links with the islands of other countries are tourist markets.

Grimaldi, based in Naples, is one of a few private companies that dominate the basin. The others are GNV in the wake of the Italian-Swiss group MSC (Aponte family) and two outsiders who

¹ Canarias and family group Armas have kept the lines with the Maghreb and the Spanish territories of Ceuta and Melilla.

have become leaders, Balearia on the Balearic Islands and Corsica Ferries on Corsica. To this panorama, we must add the Danish giant DFDS, which has taken positions in the freight business in France and Turkey, thanks to acquisitions. Finally, the French company CMA CGM also has a ro-ro activity in the Mediterranean.

For a long time, the connections between the shores of the Euro-Mediterranean countries seemed useless. The economies of the Mediterranean regions were linked to their national space or to Northern Europe. The development of the automotive industry in the Iberian Peninsula was the ferment of an industrial integration between Spain and Italy. The Grimaldi company based its development on the needs of the automotive industry to launch services between Spanish and Italian ports. The Italian shipping company launched the Motorway of the Sea concept with high-intensity ro-ro freight services in the late 1990s. GNV has focused its positioning between Italy and Spain on passenger services.

For twenty years, the links between Spain and Italy have demonstrated their interest, especially since the coastal route is long, expensive, and congested at each border crossing and metropolis. The East-West maritime route is faster and more economical. Another experience was tried between the French port of Toulon and the Italian port of Civitavecchia in the 2000s with a small automobile base, but the weakness of the other freights led to failure. In the absence of massive trade between central Italy and France, maritime connectivity was not useful. It is therefore necessary to have an economically proven reality to carry an intra-Mediterranean market.

Another limitation is the competition from the road. The idea of a cabotage line between southern Spain and a French port is old. The traffic could be based on fruit and vegetables from Andalusia and Murcia, but the conditions of competition are not favourable. The logistics of fresh products require fast transit times, and the cost of road transport is more advantageous than sea transport. For the time being, only a strong increase in the cost of road transport will allow a transfer to the maritime mode. European cabotage, initiated to reduce pollution from road transport, must henceforth be included in the objectives of reducing greenhouse gas emissions by showing environmental performance.

Environmental Challenges

One of the challenges of tomorrow's maritime industry in the Western Mediterranean is the modal shift transfer from road transport. It is therefore still the question, as it was twenty years ago, of reducing road flows through alternative maritime solutions. The Motorways of the Sea networks have already been developed in response to market demands and geographical consistency. To have a new impulse, it must be even more economical and clean.

The green impulsion is double. On one hand, it comes from the European Union with the "Fit for 55" roadmap initiated by the European Commission. It is a part of its "Green Deal", which has a maritime component. The second impulsion is given by the requirements of the International Maritime Organisation (IMO) with rules on the efficiency of ships in 2023 and a low sulphur emission zone for the Mediterranean Basin in 2025 (which has an operational cost for shipowners). In

addition, the price of energy weighs heavily and reinforces the issue of transport efficiency. The competition between road and maritime modes in the Mediterranean will be based on the principles of a green and resource-efficient consumption.

For the maritime sector, innovation is a major and imperative action. LNG fuel solutions, electric batteries, or fuel cells (hydrogen) will multiply for the ferry and ro-ro fleets in the Mediterranean Sea. Ports will also be equipped with shore power for ships. Thus, the need for economic integration will be met by the need for maritime connectivity, but also increasingly by energy efficiency and the reduction of operational pollution (CO², fine particles).

Thus, maritime and port modernisation is imperative for all Mediterranean players. On the shipping side, the groups are large enough to maintain a high level of innovation. The other trend towards gigantism with the super ro-ro ships of Grimaldi and DFDS goes in the direction of efficiency of maritime transport.

For ports, the investments are also needed to organise the calls of larger ships and important flows. Ro-ro ports need more space. In March 2022, the Barcelona Port Authority approved the transfer of the ro-ro cargo activity to Port Nou over 19 hectares. This will also help reduce pollution in the centre of Barcelona. In the case of Marseille, the port community is asking the port authority (GPM) to launch an ambitious modernisation project for the ro-ro port in the Eastern basins.

The rail link is a new feature for ro-ro transport in the Mediterranean Sea. The objective is to ensure the complementarity of the Ro-Ro maritime and rail solutions. The integration of rail and maritime solutions has a Mediterranean origin but is linked to a specific market. In 1992, the war in Yugoslavia disrupted the logistics between Turkey and Europe. The Turkish road transport sector developed a maritime solution via the Aegean Sea and the Adriatic Sea². The Italian port of Trieste thus became the gateway for Turkish cargo to Europe.

In the 2000s, the integration of the European and Turkish economies become increasingly strong, and the density of trade increased. Connectivity has therefore developed. France has been integrated with first the port of Toulon and then the port of Sete. Since 2021, a line also connects the Spanish port of Tarragona with the needs of the Spanish textile giant Inditex.

Initially, the Turkish process involved moving full trucks, with the drivers using air services. Now, most trailers travel alone, so European rail solutions are needed. First in Trieste and now in Sete, Turkish trailers use rolling motorways. The challenge for the Western Mediterranean maritime sector in the future is to develop rail solutions for roll-on/roll-off trailers. The port of Sete, which benefits from a Turkish line, already operates 10,000 trailers and has a target of doubling or tripling this number with six hectares to be developed by 2022. For Valencia, Barcelona, and Marseille, the Ro-Ro mode must be linked to rail through terminals for rail highways³.

² Initiated by Turkish players (UN RORO Ekol Logistics), the maritime activity passed in 2018 into the hand of the massive Danish company DFDS.

³ There are different technical solutions with horizontal loading (CargoBeamer, Modalohr) or vertical loading (intermodal trailers type P400 but also 45' pallet wide containers).

North – South Trade

The colonial era in North Africa, in particular under France, had created a high density of North-South trade in the Western Mediterranean. Following the independences, the situation has naturally changed, especially since each North African country has its own economic identity. Morocco and Tunisia are countries that have chosen a market economy with production exported to Europe. The liberty of investment⁴ has allowed industrial relocation, which feeds important maritime flows of trailers in both directions.

The integration of Tunisia into the European economy is no longer based on the textiles industry but related to value-added sectors such as aeronautics and electrical. The connectivity of Tunisia is based on the ro-ro which allows rapid exchanges with Europe. The maritime traffic is done with Marseille and Genoa and more modestly with Barcelona. There are about 140,000 trailers per year, half of which are related to France. The motorway of the sea between Marseille and Tunis is provided by the alliance of CMA CGM and DFDS and the Tunisian national shipping company CTN. On the Italian side, Grimaldi and GNV are also present in Tunisia.

It should be added that the ro-ro mode also benefits from the malfunction of the container terminal of Rades. The construction of a new container port is being considered by Tunisia 100 km south of Tunis. The port of Enfidha will offer containerised capacities adapted to international trade but will undoubtedly preserve the rapid connec-

tivity of the ro-ro mode required for Euro-Tunisian trade.

Morocco's situation is different, with a larger population and a larger economy, especially for exported agricultural products. There too, relocations have been important, with automobile production (Stellantis, Renault Nissan). Here too the sea must be crossed, but through the 14 km of the Strait of Gibraltar. The port of Tangier Med allows the processing of a very high volume of trailers with 407,500 M units in 2021 of trucks crossing the short sea passage to Spain.

With Morocco, shipowners offer longer shipping solutions. GNV and Grimaldi have services for trailers from Italy. In France, La Méditerranée has been offering a service from Marseille for some time but has yet to find a trailer market. However, at some point, there will have to be longer and denser maritime connectivity between Morocco and the ports on the northern shore (Barcelona, Sete, Marseille, Savona, Genoa). The main European companies will develop Euro-Moroccan motorways of the sea when the conditions of competition with the road mode through Spain will be less unfavourable.

Algeria does not have the same characteristics of integration with Europe as its neighbour countries. The socialist economic model and energy rents (oil & gas) have distanced it from a free and open economy model. Ro-ro flows do not exist, notably for reasons of cargo security. Containers are more suitable. The supply flows from Europe are made by small container ships from Spanish, Italian, and French ports,

⁴ For a long time, the European presence was mainly French, but today it is Spain and Italy that dominate foreign investments in Morocco and Tunisia.

which are nevertheless subject to expectations that make logistics complex in Algeria.

It is not clear whether Algeria will be able to develop in the next decade in a way that will encourage European investments. The country's only source of income is the sale of its energies; however, the oil and gas rent cannot be sufficient in the long term to transform the country's economy and its social stability. The economic integration of Algeria could be one of the challenges of the North-South partnership in the Mediterranean with the growth of maritime trade.

Connectivity will follow the logistical needs of a more diversified economy. It will be able to do so with the new port that Algeria wants to build in El Hamdania in the Cherchell region west of Algiers. The deep-water port will have Chinese financing and constructor, and will be dedicated to containerisation, while being able to accommodate ro-ro as in the case of Tangier Med.

Should we finally promote better maritime connectivity in the Western Mediterranean? This was the ambition of the Motorways of the Sea in the 2000s. Today we know that it is up to the mar-

ket to do so, with competition from road transport being formidable. Italy has a national policy of "Ecobonus" that aims to make financial discounts for users of long-distance maritime solutions with Sicily. The commitment to longer distances (Southern Spain, Morocco) will also depend on the market and economic needs, particularly the logistics of fresh agricultural products. Maritime transport must be effective and ecologically efficient; this is the role of shipping companies and, increasingly, of complementary rail transport. The ro-ro mode is better suited to the speed requirements of European logistics and to the integrated peripheries of the Maghreb and Turkey.

The economic development of the Mediterranean basin is an economic, social, and political imperative. It must be one of the objectives of the EU's partnership policies. The growth of trade will therefore need efficient maritime transport offering a speed that requires adapted logistics in the Euro-Mediterranean economic bloc. Ro-ro and railroads will be there for this purpose. The container remains a more economical solution with less efficient navigation time. But in either case, it will be necessary to enhance the connectivity of the sea that is common to the three continents.

The Evolution of Mediterranean Shipping in an Era of Disruptions

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The Perfect Storm

In 2021-2022, international maritime-based logistics chains experienced a crisis that was probably unprecedented. Was this a paradigm shift or a temporary situation? Historically, the international logistics sector had been able to cope with the regular crises and challenges it had faced since the sector became one of the drivers of the globalisation of countries, industries, and companies in the second half of the 20th century. Until now. The challenges of the post-COVID era stopped this trend and major disruptions were blamed on shipping as one of the factors that had helped upset the global economy.

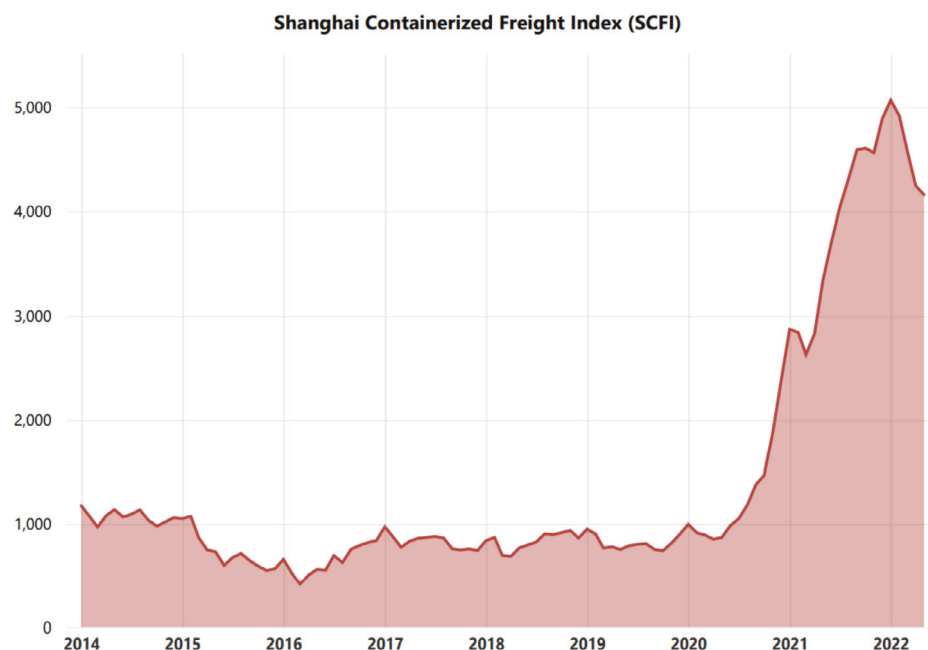
In a globalised and increasingly integrated world, in which logistics chains are long and complex, a catastrophic event anywhere in the world can have serious effects on the entire international trading system and can affect the supply of goods in far-flung areas. The wars in Iraq and Afghanistan, the 2004 tsunami, the 2008 financial crisis and the 2017 cyberattacks in the shipping industry are just a few examples of 21st-century events that could have had a serious impact on world trade. However, global supply chains responded to these disruptions swiftly and efficiently. The resilience, adaptability and flexibility of logistics chains ensured that there were no adverse impacts on industry or consumers. Even at the height of the COVID-19 pandemic, logistics chains responded effectively and prevented major supply problems. Goods continued to arrive at ports and were distributed to final consumers without obstructions. The world population was even supplied with millions of masks within a matter of weeks. When vaccines arrived, they were also relatively easy to deliver, even under extreme conditions.

However, the picture changed dramatically some months ago. A combination of factors external to logistics chains, coupled with internal tension in logistics and shipping, gave rise to the perfect storm. As a result, the transport and logistics sector is now struggling more than ever to deliver an efficient and predictable service.

Post-Pandemic Disruptions

Today's disruptions are wide-ranging and affect different economic actors. At the global level, the surge in post-pandemic demand and the rise of e-commerce changed the quantities of products ordered and the characteristics of this demand. In a short time, fluctuating demand combined with shipping supply similar to pre-pandemic levels put a strain on logistics chains and the transport sector struggled to adapt. Competition for shipping, especially container shipping, increased, thus allowing shipowners to increase freight rates to unprecedented levels throughout 2021 and 2022.

In addition to rising freight prices, energy, and raw material prices also increased substantially, ultimately leading to widespread inflation exacerbated by the outbreak of the war in Ukraine. This coincided with severe shortages of certain economically important products, such as semiconductors for the automotive industry, metals and grain, mainly because supply is concentrated in a few hands. This also led to a sharp price rise. The most striking example is the manufacture of semiconductors used in the electronics and automotive industries, which is carried out on a massive scale, mainly in Taiwan (with minor exceptions, notably South Korea).

Figure 1. Changes in Freight Prices (2014-2022)

Source: Alphaliner, May 2022

There were other disruptions in the transport sector. The COVID-19 led several Chinese ports, among the world's most important, to close for weeks in 2021 and 2022. This resulted in hundreds of ships waiting for weeks off the coast of China. These same vessels then set sail for Europe and the United States, where they all arrived at the same time with a delay of several weeks.

In the aftermath of the pandemic, ship-owners took a number of measures to adapt to the sharp decline in demand caused by mass lockdowns and curfews. The most important of these is a policy known as "blank sailing", when a ship does not call at one or more of its scheduled port stops. This practice continued and led to a significant decline in schedule reliability. Before the

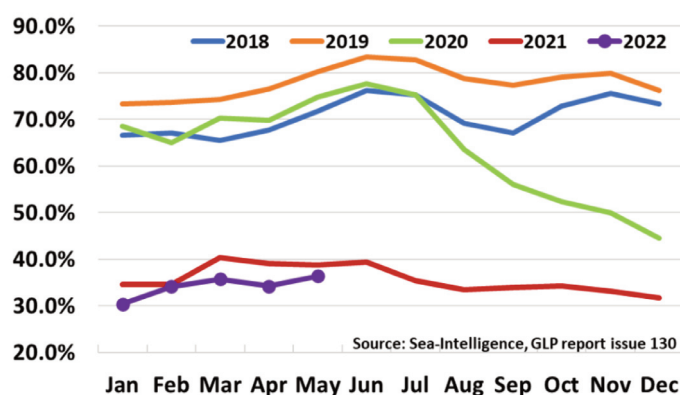
pandemic, delays in the expected time of arrival (ETA) were an exception. With the pandemic, the situation was turned on its head. Being on time became the exception. Ships on east-west routes needed an average of 101 days to complete a round-trip voyage. This meant that they were now arriving in China to start a new voyage an average of 20 days late, compared to the pre-pandemic situation. This delay increased over the course of 2022, from 17 days in February to 20 days in May. One example was the case of the container ship *MOL Triumph*, with a capacity of 20,170 TEU (twenty-foot equivalent unit), which set sail from the Port of Qingdao on 16 February and was expected to arrive in Algeciras on 25 March and Antwerp on 7 April, before continuing on to the Port of Hamburg. In actual fact, it arrived in

Algeciras on 2 April, in Antwerp on 26 April and in Hamburg on 18 May. The ship completed its journey with a 41-day delay (Port Congestion in North Europe, 2022).

These delays forced shipping companies to systematically add three ships to each route to maintain the weekly service. On the east-west route, this meant adding 51 ships to 17 direct routes connecting

Central China to Northern Europe. However, shipping companies could not feasibly organise such a large fleet, so they were forced to cancel scheduled port calls, which is known as blank sailings. For example, in the first half of May 2022, a total of 27 ships called at Chinese ports from Northern Europe, compared to the 34 that would have arrived under normal circumstances (Port Congestion in North Europe, 2022).

Figure 2. Overall Reliability of Port Calls (2018-2022)



Source: SeaIntelligence

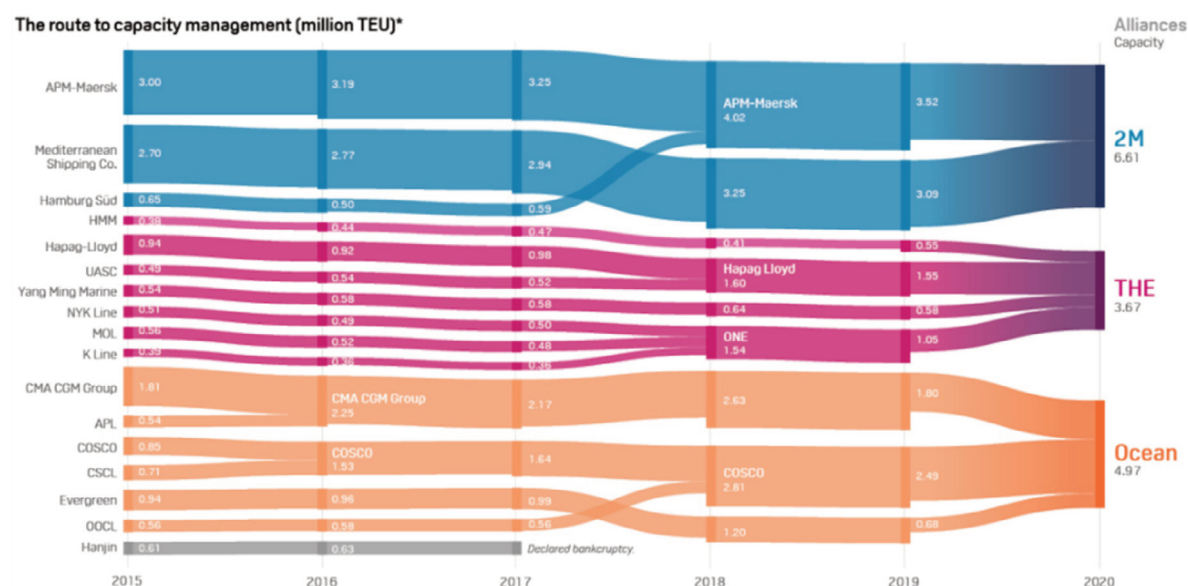
Other Factors

No analysis can be complete without factoring in the low level of diversification in the maritime sector, especially container shipping. In recent decades, many shipping companies have disappeared as a result of mergers and takeovers by larger companies. This market concentration began in the 1990s and has become more pronounced in recent years. In 2012, the top 10 shipping companies accounted for 62% of the market. By 2022, this market share had increased to 85% (Alphaliner Monthly Monitor, February 2022). The concentration process was especially strong in 2017 and 2018, when the number of shipping companies decreased, until 2020 when

shipping companies fell into three major groups (2M, THE and Ocean) in a clearly oligopolistic market.

Concentration in the maritime transport sector is driven by the investment and operating costs involved in increasing the size of ships, whose dimensions have grown considerably in the 21st century. Not all market players can survive this trend and afford the investments required to increase economies of scale. A vessel with a larger capacity can carry more containers and reduce the unit transport cost per container, but this involves a greater investment in building and operating the vessel, which results in considerably higher costs for shipping companies.

Figure 3. Evolution of Mergers and Acquisitions in the Shipping Company Market (2015-2020)



Source: Alphaliner

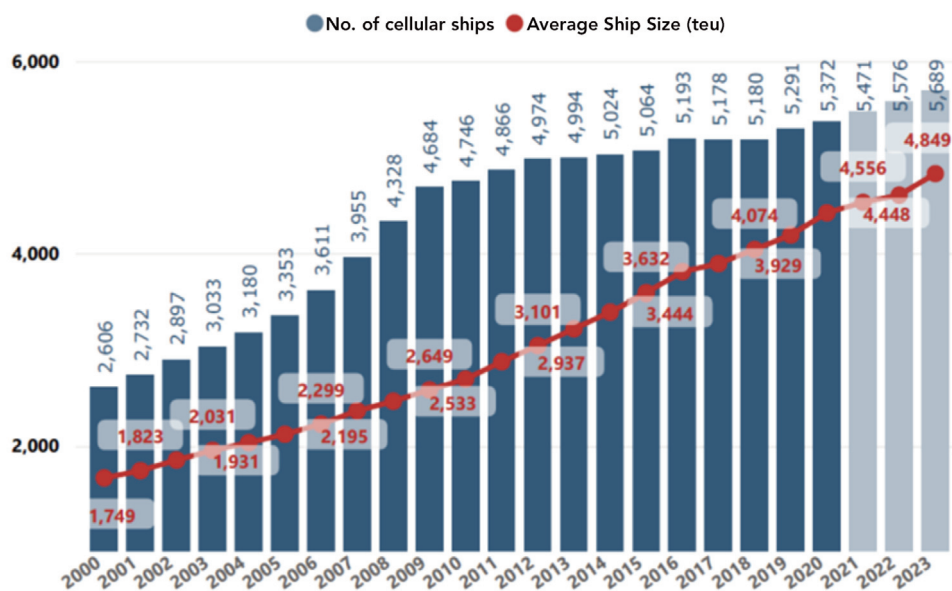
The average capacity of container ships increased from 1,749 TEU in 2000 to 4,556 TEU in 2022. What appeared to be the maximum capacity in the 1990s was repeatedly surpassed in subsequent decades. The construction of large container ships began in 2006, with the launch of the 11,000 TEU capacity *Emma Mærsk*. January 2022 saw the completion of the largest container ship to date, the *Ever A lot*, with a capacity of 24,004 TEU, a length of 400 metres (equivalent to three football fields) and a beam of 61.5 metres. The *Ever A lot* needs a minimum draught of 17 metres to enter port.

Container ships are expected to reach a capacity 30,000 TEU in a relatively short period of time. However, any disruptive technology could accelerate this process significantly (Garrido, 2019).

Problems that occurred on the ocean side of logistics chains coincided with

problems on the land side, thereby creating a perfect storm.

Firstly, there was a chronic shortage of road transport drivers, which recently began to include train drivers. The logistics and transport sector had lost some of its appeal and generational renewal was far from guaranteed. This could be considered a mere anecdote, but it affected the day-to-day operations of transport companies, which could see no short-term solution and were forced to cancel services, thus contributing to a build-up of containers in ports. Ports suffered from congestion that was chronic in some cases. Some regions in the West, especially the west coast of the United States, had entered a dynamic of chronic congestion. Unlike in Europe, there was a limited number of ports there (the west coast has just two major port hubs, Long Beach - Los Angeles and Vancouver - Seattle - Tacoma) and operating hours were short.

Figure 4. Evolution of Average Container Ship Capacity (2000-2023)

Source: Alphaliner, September 2021

How Exporters and Importers Adapted

Changes in Production and Logistics

How did exporters and importers and their logistics agents react to this situation? How did they adapt to the disruptions in maritime transport and the impact they had on production and supply chains? They opted for different solutions, depending on the characteristics of their logistics chains and the products they manufactured.

Some companies diversified their suppliers and looked for them in areas closer to the company's headquarters. Many even moved production from China and other Asian countries to Eastern Europe, Morocco, and Turkey. In other cases, they repatriated production to the company's country of origin, as in the case of Ikea and Buff. Shortening logistics chains protected

companies from many disruptions, including unreliable port calls and exorbitant freight rates. The new destinations could not offer the same advantages as manufacturing in Eastern Asia, but shipping times and transport complexity were reduced and, as a result, reliability was enhanced.

In other cases, companies chose to regain control over their logistics chains. Large international companies, such as Lidl, Coca-Cola, Amazon, and Walmart, opted to manage their logistics chains themselves by buying or chartering ships and/or planes to transport their products from production sites to consumption areas. This involved major investments and was indicative of producers' lack of confidence in the actors managing logistics chains.

This situation also forced companies to change their stock management strategies. There was a shift from a just-in-time to a just-in-case approach, in

which inventories were increased to deal with irregular deliveries and the unreliability of logistics chains. Stockpiling was cheaper than stockouts, which were much more common in this context.

Finally, it is worth noting that some companies, especially in the chemical sector, decided to give up shipping their goods by container. Although they were accustomed to transporting their products by container, they abandoned this practice and went back to transporting them by conventional ship, which they often chartered themselves, thus avoiding the difficulties associated with container logistics chains.

The Search for Alternatives to Maritime Transport

Some companies had to search for alternatives to maritime transport. In some cases, air transport replaced sea transport, especially for high-value and time-sensitive goods. Thus, even though air transport was much more expensive than maritime transport, air freight closed the 2021 financial year with its best result since 1990. According to data from the International Air Transport Association (IATA), demand in 2021 recorded year-on-year growth of 6.9% compared to pre-pandemic levels and 18.7% compared to 2020 (Blanco, 2022).

Rail freight traffic between China and Europe also increased until the outbreak of the war in Ukraine. Rail services between China and Europe have undergone rapid development. By the end of January 2022, more than 50,000 trains between China and Europe had transported more than 4.55 million TEU worth USD 240 billion. The Yiwu – Madrid line, inaugurated in 2014, is

the longest rail transport service in the world; it covers 13,052 km in 16 days. This cross-border train has offered a reliable alternative for value-added products that require immediate shipping. However, the war between Ukraine and Russia has affected operations of this form of transport. Although trains passing through Ukraine accounted for just 2-3% of the total volume, the sanctions against Russia have created uncertainty on the main routes through Ukraine. The uncertainty of the war has caused some customers to seek alternative services to rail transport and has reduced demand for the first time since its implementation (Garcia; Gu, 2022).

Paradigm Shift or Temporary Situation?

These are all still isolated reactions and constitute a small volume of trade flows in the world, especially between Asia and Europe. Do they represent a trend reversal or are they one-off solutions adopted at a time of crisis? It is difficult to predict. Only time will tell. Looking back over the last 70 years, the trends that have driven the growth of container shipping in Europe, especially with Asia and China, do not seem to have been completely reversed.

For a start, it is highly unlikely that Eastern Asia will cease to be the world's factory. It is difficult to compete globally with more populous countries that are just as or more technologically advanced and have less stringent labour conditions. There are clearly sectors where this is possible, especially if the European Union aims to become an alternative

for the production of certain goods (such as semiconductors and solar panels). However, there is every indication that Eastern Asia will continue to manufacture most of the products consumed in Western countries, and it will therefore continue to be necessary to transport these goods from production sites to consumption areas.

Maritime transport is the most efficient means of transport for inter-ocean freight and will be used on a massive scale for some time. At present, there is no alternative. Trains, planes, and

any other means of transport currently being tested (hyperloop, zeppelin, etc.) are unable to compete with it on a massive scale.

As for companies, they have had to adapt to increasingly more frequent global disruptions and have had to do so by finding imaginative solutions and, above all, by being flexible in terms of diversifying suppliers, production sites and means of transport. They must accept the fact that shipping disruptions are here to stay and will soon become the new paradigm of logistics chains.

Bibliography

EDITOR (May 2022). Port congestion in Europe continues to worsen. Global Maritime Hub | Shipping, Trade and Ports Market Analysis. Retrieved from: <https://globalmaritimehub.com/port-congestion-in-europe-continues-to-worsen.html>

MONTHLY MONITOR (February 2022). Alphaliner. Retrieved from: <https://public.axsmarine.com/wp-content/uploads/2022/05/Alphaliner-Monthly-Monitor-Feb-2022.pdf>

GARCIA, GEMMA; GU, YAN (19 May 2022). A brake on the China-Europe train: how the war in Ukraine impacts on the new silk route. PierNext. Retrieved from: <https://piernext.portdebarcelona.cat/en/logistics/a-brake-on-the-china-europe-train/>

GARRIDO, J. (November 2019) Container-ship size: What dimensions can we expect to see? PierNext. Retrieved from: <https://piernext.portdebarcelona.cat/en/mobility/container-ship-size/>

BLANCO, P. (January 2022). La carga aérea mundial cierra 2021 con su segundo mejor resultado de la serie histórica. El Mercantil. Retrieved from: <https://elmercantil.com/2022/01/25/la-carga-aerea-mundial-cierra-2021-con-su-segundo-mejor-resultado-de-la-serie-historica/>

Meeting the Challenges of Mediterranean Maritime Traffic: Supporting and Implementing a Collective and Sustainable Vision/Strategy by 2031

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Introduction

Although it only covers 2.5 million km², the Mediterranean Sea is nevertheless significantly affected by the growth of maritime flows crossing it. Indeed, located at a strategic crossroads between the Strait of Gibraltar, opening onto the Pacific Ocean and the Suez Canal, it is home to an area of intense transit and activity. This space now faces many challenges. During the period 2010-2019, maritime trade to and from the Mediterranean countries increased by 284 million tonnes.

As maritime traffic and offshore oil and gas (O&G) exploration and production have reached significant levels, their pollution generates different pressures on the marine environment: loss or discharge of solid waste contributing to pollution by marine litter, emissions of gaseous pollutants and particles into the atmosphere, emission of continuous and impulsive underwater noise and vibrations, discharge of oil and other contaminants, introduction of invasive species through ballast water and hull fouling. In the context of climate change, it is now more important than ever to provide an effective and coordinated response to these key issues for present and future generations., the different transport actors in the Mediterranean have decided to adopt a common vision: the Mediterranean Strategy for the prevention, preparedness, and response to marine pollution from ships (2022-2031)¹.

This strategy, in line with the theoretical and practical contributions of the last bienniums, enables progress to be made but with a new level of and effective implementation thanks to action that is intended to be strengthened with the ac-

tors. This regional strategy is to be understood within the framework of the Sustainable Development Goals developed by the United Nations. In particular, in the Mediterranean, action should be taken in the framework of the Goal 13 in order to combat climate change and its repercussions, and Goal 14 in order to conserve and sustainably exploit the oceans, seas and marine resources for the purposes of sustainable development.

If this strategy (2022-2031) responds to a coordinated vision necessary at the present time in order to address current and future challenges rapidly, this paper is also an opportunity to question its practical deployment over the long term - the 2031 horizon -, thanks to its action plan and the key response elements proposed in technical sessions with experts. A more specific example is that of the decision in 2022 by the International Maritime Organisation to designate the Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides (Med SOX ECA) to reduce air pollution causing many negative externalities on health and the environment.

From the Recognition of the Environmental Challenges in the Mediterranean to a Vision for the Mediterranean: the Strategy (2022-2031)

Building a sustainable vision for the Mediterranean

The effective implementation of the preservation of the Mediterranean environment in the face of anthropogenic

¹ Mentioned next as "the Strategy (2022-2031)"

actions resulting from maritime navigation responds to a vision for the Mediterranean by 2031. Adopted by the Contracting Parties to the Barcelona Convention in 2021 (Decision IG.25/16)² at the 22nd meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, the Strategy (2022-2031) offers a common thread in the active approach to the preservation of this space backed by a concrete Action Plan.

Aiming to produce clear guidelines, this Strategy (2022-2031) is broken down into a series of common objectives (CSOs) to be achieved by 2031. This Strategy (2022-2031) aims to align the work of the Contracting Parties to the Barcelona Convention with the direction given by the United Nations 2030 Agenda for the sustainable development and the ecological health of the Mediterranean Sea and its coastline.

In order to prevent, reduce and control pollution of the marine environment, the Strategy (2022-2031) applies to a set of key operational players in the region: ships, port reception facilities, terminals, offshore facilities, handling facilities and seaports.

Backed by the Strategy (2022-2031), an Action Plan defines a series of specific actions necessary to achieve the seven CSOs of the Strategy (2022-2031). These are broken down into actions on people, infrastructure and in the context of sharing information and knowledge.

In particular, these actions support and encourage open and collaborative net-

works between all stakeholders, build capacity, help Contracting Parties ensure that they have the knowledge, expertise and experience to implement the Strategy (2022-2031). Alternatively, it is necessary to ensure that the surveillance and monitoring facilities needed to prevent and detect illegal discharges and emissions from ships, to exchange monitoring information and to assist in combating marine pollution incidents, are available and strategically located throughout the Mediterranean region.

From the study of trends in the Mediterranean to a need for a response

The need to implement an operational vision in the Mediterranean area is explained by the fact that maritime traffic in the Mediterranean is not without significant and harmful effects on health and the environment, which must be curbed.

Indeed, according to the "Study on trends and outlook for marine pollution from ships and activities as well as maritime traffic and offshore activities in the Mediterranean" (REMPEC, 2021a), maritime traffic constitutes a real vector of marine pollution in the Mediterranean basin (discharge of solid waste and hydrocarbons, emission of particles into the atmosphere, emission of underwater noise, invasive species). This study defines five axes corresponding to frameworks affecting more particularly the Mediterranean correlated to the main subjects mentioned.

² Decision IG.25/16 Mediterranean Strategy for Pollution Prevention, Preparedness and Response Marine from Ships (2022-2031) September 27, 2022, https://wedocs.unep.org/bitstream/handle/20.500.11822/37138/21ig25_27_2516_eng.pdf?sequence=1

The increase in maritime traffic means that there is a greater risk of pollution caused by shipping. Although environmental regulations are strict, notably under the MARPOL Convention (International Convention for the Prevention of Pollution from Ships), polluting substances continue to be discharged into the sea. Shipping activities generate various chemical pollution pressures through the discharge of oil and other chemicals. Spills can occur in accidents, during routine operations, in ports, as well as at sea. They may be deliberate or accidental, resulting from human decision making, human error or technical failure.

Marine litter is a regional issue, from its origin to its spread in the marine environment. It is estimated that more than 90 million tonnes of plastics have accumulated in the world's oceans, with an estimated 5 to 13 million tonnes added each year. In fact, marine debris enters the seas from both land and marine sources and about 60-80% of it is plastic. It has various potentially harmful implications for marine ecosystems and human activities at sea. Every year, millions of species that live in the oceans are weakened, maimed and killed by marine litter. Marine litter also poses a risk to human health and has significant implications for human well-being, negatively impacting vital economic sectors such as tourism, fisheries, or aquaculture.

Maritime transport is highly dependent on fossil fuels. Approximately 3.5 million barrels of high-sulphur residual fuel oil (bunker fuel) per day were consumed by the sector in 2017, accounting for about 50% of global fuel oil demand. Most of these fuels have a high sulphur content, resulting in the emission of sulphur oxides into the atmosphere. Emissions from ships are spread over hundreds of

kilometres in the atmosphere, contributing to the deterioration of air quality on land, even if they are emitted at sea. They come mainly from ship exhaust.

With the increased mobility of people and goods worldwide, the spread of invasive species (NIS) has accelerated over the last decade with a growth rate of 200% over ten years. The Mediterranean Sea is one of the seas most affected by NIS, in terms of high rate of introduction, number of taxa recorded and duration of permanence (macrophytes, fish, molluscs, polychaetes, bryozoans and crustaceans).

Changes in Mediterranean marine biodiversity linked to the introduction of NIS have been reported in recent years, mainly linked to maritime transport, the main route of introduction, mainly in ballast water or as fouling on ship hulls. NIS impact both the environment, human health and activities. For example, the jellyfish *Rhopilema nomadica* has been reported to negatively affect coastal power generation facilities, as well as impacting fisheries, human health, and tourism.

Noise from human activities at sea travels long distances underwater, causing increases and changes in ocean noise levels. Increased noise levels can have a negative impact on marine species and ecosystems that can reduce the ability of species to hear environmental signals that are vital to their survival, ranging from temporary reductions in hearing sensitivity and behavioural effects to more dramatic effects such as death.

Thus, the response to the environmental challenges in the Mediterranean physical space with regard to transport is embodied in the Strategy (2022-2031) and is put into practice through an Action Plan

that is regularly revised and adapted to the contextual and environmental evolution of this space.

An Example of Implementation in Line with this Vision: the Designation of the Mediterranean as an Emission Control Area for Sulphur Oxides (Med SOX ECA)

This vision for the Mediterranean makes it possible to theorise and propose appropriate measures to meet current challenges. This coordinated approach to propose a common approach is reflected in multiple decisions such as the decision by the International Maritime Organisation (IMO) in June 2022 to set up an emission control area for the Mediterranean Sea for sulphur oxides and particles. This decision, which is part of the strategy (2022-2031), represents a significant step towards a more sustainable maritime sector in terms of transport-related pollution and opens the way to new and more sustained environmental prospects.

From tangible health and environmental effects to a coordinated air quality transition in the transport sector

Among the issues previously identified by the study on trends, air pollution has been a major part of this year's Mediterranean-related decisions and the 2025 agenda, due to the decision to discuss the adoption of a SOx reduction zone at the next MEPC 79 in December 2022.

This specific issue has many health and environmental effects that need to be addressed in a sustainable way. In the vicinity of densely populated coasts, pollutants from ships and particulate matter (PM) from fuel combustion, including sulphur oxides (SOx), cause serious dangers to human health and marine ecosystems. Emissions from ships are transported directly into the atmosphere over hundreds of kilometres, causing deterioration of air quality on land and at sea.

One of the effects of this pollution generated during the combustion of marine engines is the formation of SO₄ aerosols interacting with other particulate matter (PM), which can penetrate deep into our lungs as well as those of other living organisms leading to risks such as lung cancer, cardiovascular diseases or asthma. In terms of the environment, this pollution contributes through wet and dry sulphate deposits to the acidification of aquatic systems and general visibility through the appearance of fogs. World Health Organisation (WHO) reports also indicate that air pollution levels in the Mediterranean are among the highest in the world, leading to an increased level of risk.

Designate the Mediterranean Sea as an Emission Control Area (Med SOx ECA), within which specific requirements will be imposed (Dec. 2022)

A solution being implemented to reduce the level of pollution and the effects mentioned above, within the framework of the general sustainable development objectives of the Strategy (2022-2031), is the designation of an extended control area for the level of SOx, CAE and PM emitted, where effective establishment and monitoring measures can be implemented.

The Med SOx ECA, from its creation to effective practice

The Med SOx ECA is the result of several years of coordinated work with all relevant Mediterranean stakeholders. To understand its practical implications, it is important to look at the construction of this specific regime.

In February 2022, a joint and coordinated proposal on the designation of the Med SOx ECA was proposed to the IMO, followed by the approval of this proposal and a draft amendment to MARPOL Annex IV on the designation of the Med SOx ECA proposed at MEPC 78. This decision to bring into force the amendment to regulation 14 of MARPOL Annex VI was considered for approval in December 2022 at MEPC 79, with a planned date of application of 1 January 2023.

These developments follow several years of progress and capacity building to coordinate a collective decision. In particular, 2020 saw the entry into force of a new global regulation limiting the sulphur content in fuel oil used on board ships to 0.5%, which is the IMO sulphur limit. It has resulted in tangible global benefits, notably the annual reduction of about 8.5 million metric tonnes of sulphur oxides released into the atmosphere. Further results are now expected from the implementation of the new limit. The idea is to reduce emissions by 79% for sulphur oxides and 24% for particulate matter.

With a proposed entry into force of the Med SOx ECA on 1 January 2025, no ship entering the Mediterranean Sea would use fuel with a sulphur con-

tent higher than 0.1% m/m and monitoring will be applied on compliance with this rule. The reduction in emissions is correlated with the need for countries to implement this decision, assisted by REMPEC, and for shipping companies and other key players in the Mediterranean industry to move towards sustainability with technological upgrades and cleaner energy sources.

In terms of understanding its effective implementation, as ship exhaust contributes to global air and sea pollution, ships are facing an increasing number of rules and regulations, as well as voluntary remedies from international, national and local legislators. Some solutions have been proposed to improve air quality in coastal areas and ports. These include the establishment of reduced speed zones, emission control zones and the adaptation of shore-side electrification technologies for ships while at berth.

The effects of these measures

In addition to the impact that this measure will have in terms of practical implementation of regulations and adaptations required for ships, the Med SOx ECA fits in with the objectives for the Strategy (2022-2031) in a broader framework. Indeed, this implementation allows a general improvement of air quality and the prevention of several health and environmental conditions.

In the technical and feasibility study conducted by REMPEC (REMPEC, 2021b), the conclusions highlighted that the Med SOx ECA would improve air quality with an annual reduction of about 8.5 million tonnes of SOx discharged into the atmosphere

(emissions 78.7% lower for SO_x and 23.7% lower for PM_{2.5}, compared to the IMO sulphur cap (0.5%)). In this sense it would prevent 1100 premature deaths related to air pollution and 2300 cases of childhood asthma each year.

It would also prevent acidification and its impacts on aquatic systems through wet and dry sulphate deposition which would be reduced by 1.16% and 1.95% respectively. In terms of identified risks to navigation, it would allow a reduction in haze with improved visibility thus avoiding maritime incidents and improving tourist attractiveness.

Thus, the implementation of the Med SO_x ECA provides an effective example of the implementation of the Strategy (2022-2031) by putting into practice CSO 3: Reduce and monitor atmospheric emissions from ships to a level that is not harmful to the marine environment or the health of the coastal population of the Mediterranean.

Conclusion

In recent years, several coordinated initiatives have been launched in the Mediterranean, which, thanks to the collective mobilisation of key actors, will allow several theoretical advances to be implemented by 2031. These measures are contained in the development of the Strategy (2022-2031) for the Mediterranean, which highlights the priorities for reducing pollution and its consequences in terms of oil pollution, marine waste, invasive species, particularly from ballast water, underwater noise and air pollution. This last point has also seen progress this year concerning the re-

duction of SO_x and PM which we have had the opportunity to develop in this paper. The reduction of emissions from ships is correlated with the need for countries to implement the Med SO_x ECA regulation in a coordinated manner, including ship operations and industry more broadly, to emphasise a coordinated and practical collective transport transition with technological upgrades and cleaner energy sources, leading to cleaner air and better human and natural health.

Taking this sustainability approach to cleaner shipping in the Mediterranean further means considering the implementation of this vision for the Mediterranean and its follow-up. This is made possible by the Action Plan attached to the strategy (2022-2031). This Action Plan defines the specific measures to be implemented within each CSO according to "zones of influence" (People, Institutions, Infrastructure; and Information and Knowledge Sharing) which are informed by support objectives for each of the zones. These CSOs are progressively oriented according to the results linked to the objective at the biennial meeting in the first year of each biennium. This allows for reporting and evaluation of the progress made in the implementation of the Strategy (2022-2031). This is complemented by a mid-term review and evaluation through regular monitoring in a consultative process with the Contracting Parties to the Barcelona Convention and relevant regional and international organisations. At the end of each five year period, the Strategy (2022-2031) and its Action Plan will be revised on the basis of an analysis of the progress of its implementation and the results of discussions on emerging issues. In this sense, the cur-

rent vision for 2031 will be evaluated in 2026 with a view to possibly adopting a revised strategy in 2027.

The key to this transition towards a more human and ecosystem friendly Mediterranean transport is thus embodied in a strengthened inter-partner action, in order to move to-

wards the common goal for present and future generations of "a clean and healthy Mediterranean marine and coastal environment with a sustainable and pollution-free maritime sector, supported by a strong enforcement system and enhanced multi-sectoral cooperation, for the benefit of present and future generations".

Bibliography

REMPEC (2021a). *Study on trends and outlook of marine pollution from ships and activities and of maritime traffic and offshore activities in the Mediterranean*. Mediterranean Action Plan – Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC). Floriana, Malta. Retrieved from <https://www.rempec.org/en/knowledge-centre/online-catalogue/studyontrends2022.pdf/@@download/file/StudyOnTrends2022.pdf>

REMPEC (2021b). *The technical and feasibility study for the designation of Med SOx ECA*. Note by the Secretariat. Mediterranean Action Plan – Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC). Floriana, Malta. Retrieved from <https://www.rempec.org/en/knowledge-centre/online-catalogue/2019/rempec-wg-45-inf-9-technical-and-feasibility-study-to-examine-the-possibility-of-designating-the-mediterranean-sea-or-parts-thereof-as-sox-eca-s-under-marpol-annex-vi-english-only>

REMPEC (2021c). *Mediterranean Strategy for the Prevention, Preparedness and Response to Marine Pollution from Ships (2022-2031)*. Decision IG.25/16 adopted by the Contracting Parties to the Barcelona Convention. Retrieved from <https://www.rempec.org/en/knowledge-centre/online-catalogue/med-strategy-2022-2031-1.pdf>

REMPEC (2021d). *Draft joint and coordinated proposal on the designation of the Med SOx ECA to the IMO*. E-Med SOx ECA 2021 WG 50-5. Note by the Secretariat. Mediterranean Action Plan – Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC). Floriana, Malta. Retrieved from <https://www.rempec.org/en/knowledge-centre/online-catalogue/e-med-sox-eca-2021-wg-50-5-draft-joint-and-coordinated-proposal-on-the-designation-of-the-med-sox-eca-to-the-imo.pdf>

REMPEC (2019). *Road Map for a Proposal for the Possible Designation of the Mediterranean Sea, as a whole, as an Emission Control Area for Sulfur Oxides Pursuant to MARPOL Annex VI, within the Framework of the Barcelona Convention*. Decision IG.24/8 adopted by the Contracting Parties to the Barcelona Convention. Retrieved from <https://www.rempec.org/en/knowledge-centre/online-catalogue/decision-ig-24-8-road-map-for-the-med-sox-eca.pdf>

Recent Developments and Human Resource Needs in Transport and Logistics in the Western Mediterranean

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Professions in the logistics chain in Western Mediterranean countries went through very difficult times during the COVID-19 crisis. The consequences of the COVID-19 were the shutdown of global value chains, reduced traffic and the closure of several global production plants, ports and airports. However, essential flows by sea and road were maintained in an uncertain and risk-ridden environment.

And yet, right after the lockdowns were lifted, the structural vulnerability of various professions in the logistics value chain became evident: bankruptcy of small road hauliers, changes in attitudes towards the professions of lorry driver, seafarer and logistics operator, and structural shortages of lorry drivers, logistics operators and seafarers in the countries on the northern shore of the Mediterranean. Can these structural problems be solved with labour from the southern shore of the Mediterranean? If so, how? It must be emphasized that the solution to the current human resources crisis in logistics transport must naturally respect environmental requirements, while at the same time mastering new technologies such as automation, digitalisation, and artificial intelligence.

The Situation of Professions in the Logistics Chain on both Shores of the Western Mediterranean

Maritime transport

Social conditions of seafarers during the COVID-19

Seafarers were trapped aboard isolated boats and separated from family

and friends. Every month, 200,000 seafarers are rotated to ensure safe and sustainable working standards. However, 400,000 seafarers were blocked on board ships for bureaucratic reasons, thus threatening the collapse of vital supply chains. Other seafarers could not be employed because they were unable to embark. The International Maritime Organisation (IMO), the International Labour Organisation (ILO), the Federation of National Associations of Ship Brokers and Agents (FONASBA) and other entities tried to persuade member states to find solutions for these thousands of seafarers of various nationalities (e.g. Philippine, Chinese, nationals of Central and Eastern European countries).

Social situation of seafarers in Europe

Despite the crisis, the weight of the maritime sector continues to be important in the EU. The ILO Maritime Labour Convention of 2006 (MLC 2006) mainly sets the standards at international level. It complements the regulatory framework on maritime safety adopted by the IMO through the International Convention for the Safety of Life at Sea (SOLAS), the International Convention on Standards of Training, Certification and Watch Keeping for Seafarers (STCW) and the International Convention for the Prevention of Pollution from Ships (MARPOL). The MLC was transposed into European legislation, in particular by Council Directive 2009/13/EC, and entered in force on 20 August 2013. It establishes a minimum set of standards that paves the way to better protection for seafarers in terms of living and working conditions, fair employment and social protection (e.g. social security, pensions).

However, current maritime transport policy favours economic agents, es-

pecially at social level. We should remember that 40% of the world fleet is owned by European shipowners. However, only 40% of their employees come from member states. Shipowners rely mostly on seafarers from outside the European Union.

It is common for seafarers to be employed by third countries at a lower rate, even on board ships flying the flag of an EU member state. The European maritime labour market is also characterized by the aging of its national professionals. Nevertheless, the countries on the northern shore of the Mediterranean continue to offer high-level training in a number of maritime training institutes and schools. In addition, the EU member states remain committed to the concept of a “strategic fleet”.

The challenge involves striking a balance between the necessary competitiveness and the need to create more skilled and highly skilled jobs for European seafarers. The European Commission announced in 2018 the launch of the Skillsea Project, which started in 2019 and will run for a period of four years, as part of a consortium of 27 organisations from 16 European countries. The aim of this project is to unify the various stakeholders of the European maritime industry in order to monitor the structural changes the industry is going through. This project consists of six work packages (WP), the first of which are on identifying qualification needs (WP 1) and preparing education and training for the future (WP 2).

Seafarers on the southern shore of the Mediterranean

In the countries on the southern shore, the problems are different for many so-

cioeconomic reasons, including the decline of fleets in the Maghreb countries. Indeed, the number of seafarers is limited due to the discontinuation or decline of national fleets. Traditional training institutes are blocked by the lack of training ships to recruit young cadets on board national fleets. Cadets entering the labour market are forced to embark on ships under flags of convenience.

Road cargo transport

Situation in the countries on the northern shore of the Mediterranean

In terms of road transport, despite the European Commission’s regulations and intervention, the COVID-19 has had a major impact on a vulnerable sector and highlighted the shortcomings of the European road transport policy. Social dumping destabilises the road transport market: European companies use loopholes in European regulations to set up subsidiaries in Central European countries and employ drivers from these countries for European traffic outside their countries of origin under working conditions that do not even respect minimum legal requirements. The 2020 Mobility Package certainly aims to bring some order to this socially unregulated European area. It remains to be seen where the human resources will come from to enforce this new regulation against social dumping. This social inconsistency in the European road transport and the recent attempt at regulation conceal a structural element: the shortage of drivers (ageing population).

Road cargo transport is a sector that has difficulty recruiting staff. The profession now has a bad image, is no longer attractive in terms of wages, working conditions or job security. In

addition, many professionals have left the sector due to the COVID-19. According to the International Road Transport Union (IRU), "400,000 new drivers are needed to ensure operations of the transport system and goods supply in the European area" (Perrodou, 2021). The road transport sector is therefore suffering from a structural recruitment crisis that is expected to worsen in the future due to an unfavourable age pyramid.

Situation in the countries on the southern shore of the Mediterranean

The Maghreb countries suffer from a shortage of qualified and experienced professional drivers. A transition phase is currently under way, designed to possibly cover these needs, but there is still the issue of training (insufficient number of training hours and lack of practical classes). There is definitely a lack of well-trained drivers. Many available drivers are not hired because of their inability to perform the tasks of professional drivers (e.g. vehicle management, safeguarding goods, customer relations). Transport companies hesitate to hire them for fear of entrusting an expensive truck to incompetent drivers, not to mention the issue of road safety. At present, a career as a professional driver does not seem very attractive and the only professionals on the market demand very high salaries. Most qualified drivers do not have a stable contract and move from one haulier to another, which leads to uncontrolled increases in wage costs. Despite this, thousands of young people looking for employment are tempted by this profession. Many of them have received theoretical training to pass the test to obtain a licence to drive a heavy goods vehicle (HGV) but have not been trained on the ground by the profession or training institutes.

Logistics professions

It should be noted that a large proportion of the resources and means in the supply chain is concentrated on time-consuming tasks with little added value. Warehouse and retail jobs are often very physical (carrying loads, long distances) and particularly prone to musculoskeletal disorders. These positions have increased considerably with digitalisation (e-commerce) and the steady rise in the number of references, distribution channels and formats. The application of technology (mainly automation) can compensate for staff shortages. Therefore, those involved in heavy and repetitive logistical tasks are partially or fully exempted from these tasks and can be reassigned to development, maintenance or even piloting activities. Technology enables migration from a traditional, manual organisation to a mechanized, robotic one. This makes it necessary to recruit new profiles on a par with these innovations. Employees should also receive regular training in these rapidly evolving technologies. As is often the case, the hard part is not the technology. It is ensuring that the organisation is able to adapt to change. Despite these innovations, there are still labour shortages on the northern shore of the Mediterranean.

Generational Change and the Search for Skilled, Mobile Personnel

The generational change in the labour market and transport-logistics companies is evident and irreversible. In an ageing society like Europe, which wants to stay dynamic, the focus is on the problems of hiring young workers, as well as employee retention and the production skills of relatively older workers.

This requirement is naturally reinforced by the demographic ageing of the working population (workers over 50).

The professions of driver, logistics operator, and seafarer must therefore be able to attract as many young people as possible, despite their limitations. However, for true generational change to take place in these professions, structural measures must be adopted that lead to better working conditions and a better quality of life for the parties involved. New technologies could certainly encourage some young Europeans to choose these professions, provided that the social environment is favourable. However, Europe's demographic structure will make it necessary to rely on young people from the southern shore of the Mediterranean.

The transport-logistics sector requires relatively young profiles physically prepared for these demanding professions and able to quickly assimilate new technologies. Unfortunately, ageing is structural in the countries on the northern shore of the Mediterranean. The demographic structure of the two shores of the Mediterranean clearly shows that ageing on the northern shore will be offset by the youth of the southern shore. Using these human resources in the South could make it unnecessary to hire drivers from countries as far away as India.

Towards a Smart Circular Migration Policy Supported by Innovative Vocational Training

For smart circular migration

The International Organisation for Migration defines circular migration as “a

form of migration in which people repeatedly move back and forth between two or more countries” (IOM, 2019). However, implementation of this circular migration approach is currently severely limited by the development of a discourse that places the struggle against irregular migration at the heart of EU migration policies. However, there are a number of programmes and initiatives to encourage both regional and national labour migration. Firstly, at regional level, the European Blue Card scheme is a harmonized, fast-track procedure for obtaining a residence permit valid throughout the European Union by any non-European professional who accepts a highly qualified post in an EU member state (except Denmark and Ireland). At the same time, some EU countries have set up national mechanisms to encourage labour migration from the Balkans and Southern Mediterranean countries. In this context, the concept of circular migration is of interest, as it reconciles economic imperatives and public concerns about migration policy.

This Euro-Mediterranean movement is not defined in terms of time and can take the form of seasonal migrations (of less than one year) or longer stays in a country. However, circular migration is by definition temporary migration and involves migrants returning to their country of origin.

A number of improvements could be made to circular migration schemes to make them more attractive to all stakeholders. Longer periods of residence and/or repeated migration of the same person should be permitted so that road hauliers, maritime carriers and logistics service providers can retain their temporary workers for

an extended period of time. This would help these employers recoup the cost of recruiting and training foreign workers, while providing greater security and stability for migrants.

Cooperation in the area of skills validation will need to be strengthened. Mobility in the Mediterranean basin is, in fact, currently held back by the lack of regional frameworks for skills recognition, which would allow workers in the logistics transport sector to join different labour markets and employers to benefit from a larger pool of potential candidates. Bilateral agreements on mutual recognition of qualifications could therefore be another starting point for further harmonization of national qualification frameworks in the supply chain. Interconnected migration and training policies will encourage young people from the southern shore of the Mediterranean to participate in mobility initiatives between the countries on both sides of the Mediterranean and, in general, more effective mobility of workers within the entire area.

Innovative training: project for the creation of a Euro-Mediterranean training network in logistics transport

Circular migration in transport and logistics requires a carefully selected, well-trained labour pool. A common training policy would be thus indispensable. The studies and work carried out by the Centre for Transport Studies for the Western Mediterranean (CETMO), the Union for the Mediterranean (UfM), the European Commission (EC), and the European Investment Bank (EIB) should be

taken into account in order to create innovative training that corresponds to highly evolving areas.

It would be necessary to define the circular migration policy specific to the logistics transport sector in order to identify training needs. This training policy should be consistent with all EU projects, such as Skillsea, LogisMed-TA, and the ILO Guiding Principles (guidelines) on promoting decent work and road safety in the road transport sector. Finally, the creation of an institution to manage these formations appears to be essential.

For example, a good idea would be the creation of a Euro-Mediterranean training centre for transport and logistics in a country that is advanced in this field and has a variety of vocational training centres and institutes specialising in all logistics and transport activities. The need for professional trainers could be considered in light of the needs identified on the northern shore of the Mediterranean. Validation of diplomas, certificates, etc., would be similar to the method used in Europe. This centre could work as a network. Although the issue of networks is complex, it could be clarified by specifying the role of the centre.

There are many anticipated network effects on training. The creation of a Euro-Mediterranean transport and logistics training centre, around which other specialised training units would be set up, would require a suitable organisation with a light, flexible structure. This structure could benefit from Europe's irrefutable contribution in terms of teaching methods, equipment, and trainers.

Conclusion

This project may seem utopian to some, but it forms part of the desire to build a Euro-Mediterranean area of peace with human capital at its basis. The needs in terms of human resource of the northern

shore of the Mediterranean logistics chain can potentially be met by the countries on the southern shore. Mobilising them calls for a smart, circular migration policy based on innovative training that includes digitalisation, automation, and artificial intelligence.

Bibliography

BECKOUCHE, P., LE BRAS, H. (2008), Passer des migrations aux mobilités, IPE-MED. Retrieved from http://www.ipemed.coop/adminIpemed/media/fich_article/1315907212_IPEMED_PasserdMigrationsauxMobilites_fevrier2011.pdf

DAMIENS, J. ; RIHAL J. ; HOURY Z. ; BALLÉ, T. (2020), La digitalisation des activités de transport comme levier de différenciation. Adameo. Retrieved from https://ftp.adameo.com/Livres_Blancs_adameo/Digitalisation_transport_oct20.pdf

DG MOVE (2020). Study on social aspects within the maritime transport sector, Final report. European Commission, Luxembourg: Publications Office of the European Union. Retrieved from <https://op.europa.eu/en/publication-detail/-/publication/e565f109-bf30-11ea-901b-01aa75ed71a1>

EL KHAYAT M. (2015), Gouvernance de la logistique et compétitivité, Revue marocaine d'audit et de développement, n° 42, Rabat : Imprimerie El Maârif Al Jadida

ELLIS, N.; WADSWORTH, E.; SAMPSON, H. (July 2021) Cartographie des professionnels de la mer ; Vers un système européen de collecte de données exhaustif. Fédération européenne des travailleurs des transports (ETF) & l'Association des armateurs de la Communauté européenne (ECSA). Retrieved from https://www.etf-europe.org/wp-content/uploads/2021/09/MapMarSummary_layout_FR.pdf

HSBA (2018), Seafarers and digital disruption. Hamburg School of Business Administration. Retrieved from <https://www.ics-shipping.org/wp-content/uploads/2020/08/ics-study-on-seafarers-and-digital-disruption-min.pdf>

HÜGEL, J. (2020). Perspectives du transport routier sur les opportunités et les défis de la pandémie, CETMO & IEMed. Barcelone. Retrieved from <https://www.cetmo.org/fr/COVID-19-impact-transport-routier-opportunités/>

CETMO (2021), Transport et logistique méditerranéens dans une ère post-COVID 19 : perspectives et opportunités. 34ème session annuelle. Groupe de travail sur les tendances et l'économie des transports WP5, ITC, UNECE. Retrieved from https://unece.org/sites/default/files/2021-09/Agenda3a_c_d_e_f_Transport_Logistique_M%C3%A9diterran%C3%A9ens_Post_COVID19_Perspectives_Opportunit%C3%A9s.pdf

IFC (2020), The Impact of COVID-19 on Logistics. International Finance Corporation. Retrieved from https://www.ifc.org/wps/wcm/connect/2d6ec419-41df-46c9-8b7b-96384cd36ab3/IFC-COVID19-Logistics-final_web.pdf?MOD=AJPERES&CVID=naqOED5

IOM (2019), Glossary on Migration. Retrieved from https://publications.iom.int/system/files/pdf/iml_34_glossary.pdf.

IRU. (2021). *The future of TIR is digital*. Retrieved from <https://www.iru.org/what-we-do/facilitating-trade-and-transit/tir/future-tir-digital>.

MCKINNON, A.; FLÖTHMANN, C.; HOBERG, K.; BUSCH, C. (2017). *Logistics Competencies, Skills, and Training: A Global Overview*. World Bank Studies; Washington, DC: World Bank. Retrieved from <https://openknowledge.worldbank.org/handle/10986/27723>

NACIRI, A.; PACHÉ, G. (dir.) (2021), *Penser le Maroc logistique*, Presse Universitaire d'Aix-Marseille

OCDE (2021), *Intégration régionale dans l'Union pour la Méditerranée : Rapport d'étape*, Éditions OCDE, Paris, Retrieved from <https://doi.org/10.1787/3a41651e-fr>

PACHÉ, G. (2021), *La société malade de la COVID-19, Regards logistiques croisées*, Presse Universitaire d'Aix-Marseille

PERRODOU, R. (Dec. 2021). *Quand la chaîne économique est brisée par son maillon le plus faible, le transporteur*. Le Journal du Net. Retrieved from <https://www.journaldunet.com/economie/transport/1507135-trm-quand-la-chaine-economique-est-brisee-par-son-maillon-le-plus-faible-le-transporteur/>

SAVY, M. (2022), *Logistique et société, document de travail*. Chroniques dans la revue Transports, Infrastructures et Mobilité

CONCLUSIONS

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The collection of contributions presented above shows the state and trends of transport and logistics in the Mediterranean at a time of multiple changes and offers interesting proposals to take advantage of the existing opportunities. As a consequence of multiple disruptions and transformations since the COVID-19 pandemic, important processes of change have been initiated or intensified in global transport, production, and consumption systems. Moreover, new challenges arising from major geopolitical tensions have emerged, not to mention the increasingly urgent need to act on climate change. It can be asserted that the current moment appears as a point of no return of a structural transformation in which the decisions and strategies that are adopted will mark and define both the organisation of transport and logistics in the Mediterranean in the medium and long term and the capacity of the region to emerge strengthened and integrated in the face of this disruptive moment that is being experienced.

A comprehensive reading of the articles in this volume corroborates the idea that we are at an important turning point and exposes possible strategies, measures or lines of action for the Mediterranean countries to successfully face the current challenges. From the joint consideration of these measures, a strong idea emerges: the need for cooperation and collaboration between the many different actors in the Mediterranean, which is fundamental for the development and exploitation of the opportunities that arise. Therefore, it is necessary to highlight the integrated vision at the Mediterranean level of the different challenges and

opportunities and the shared effort to confront them.

A Time of Disruption and Change

Considering intra-Mediterranean maritime connections, these are currently immersed in a process of transformation towards a more ecologically and economically efficient model that allows for greater competition with road transport and, therefore, greater sustainability of the transport system as a whole. This transformation refers both to the reduction of polluting emissions, the transition towards new energies, and greater multimodal integration. These transformations appear to be the premises on which a new model of maritime relations in the Mediterranean should be based, allowing for greater integration of trade and production systems on both shores.

This transformation in maritime connectivity in the Mediterranean cannot be separated from other disruptive processes that have occurred and are occurring in the field of maritime transport on a global scale. While the global transport system was able to provide an exemplary service at the height of the COVID-19 pandemic, in the recovery process that followed, a number of factors disrupted the logistics chains that had underpinned the globalisation process until then. The increase in freight costs to unprecedented levels and a decrease in the reliability of maritime services are the most notable consequences of this alteration, which have forced a process of adaptation on the part of the actors involved in them. This adaptation includes changes in production and

supply patterns in the sense of relocating and diversifying the origin of the components of the production chains, the internalisation of the control of logistics services or the change in the management of stocks. These transformations are fundamentally aimed at increasing the resilience of supply chains in the face of foreseeable disruptions in the logistics chain. It is precisely this restructuring of supply chains that should be considered a historic opportunity for the Mediterranean.

This transformation of global supply chains and maritime connectivity patterns finds a new element of change when the environmental variable is taken into consideration. The logistics sector is already immersed in a set of actions aimed at limiting its harmful effects on the environment. Their full implementation together with the adoption of future measures already envisaged will have a considerable impact on current operational patterns.

Another historic decision is the implementation of the African Continental Free Trade Area, which is an opportunity for North Africa, and thus for the Mediterranean region as a whole. The effective implementation and development of this free trade space should help North African countries to extend their supply chains, strengthen their hitherto weak regional integration, position themselves in global value chains for goods and services, and ultimately promote private sector modernisation.

Finally, another potentially disruptive factor is the situation of the transport and logistics labour market in the Mediterranean. This sector is affected by a structural crisis that the effects of COVID-19 and the subsequent re-

covery process have only accentuated. This crisis refers both to the problems of the working conditions of seafarers, the shortage of trained professionals and the lack of generational renewal of the workforce and, therefore, its ageing.

The challenges posed undoubtedly require sectoral solutions, but the high degree of interrelation between them cannot be overlooked, especially the proposed adaptation actions.

Shared Proposals for Dealing with Change

While the current situation undoubtedly involves profound transformations in the field of transport and logistics, the challenges arising from these transformations also present opportunities. Overcoming these challenges requires determined and ambitious action by a wide range of actors, but also, and above all, coordination and collaboration between them.

The opportunity outlined for diversification and regionalisation of supply chains to make them more resilient would imply increasing productive integration between the European Union and the countries of North Africa, which in turn would need to improve the efficiency of intra-Mediterranean exchanges by improving the economic and environmental efficiency of maritime and land transport. This improvement in economic and environmental efficiency must result from measures such as the promotion of motorways of the sea or the effective consideration of the external costs of road transport. These activities require public action, but also the collaboration of private actors and especially the involvement of

maritime and rail actors in the creation of new chains that are more economically and environmentally efficient.

Along the same lines of promoting trade integration, especially that of the North African countries, the creation of the African Continental Free Trade Area appears to be a noteworthy opportunity. However, taking advantage of this potential opportunity requires the modernisation of North African countries' economic structures, which in turn will require not only the involvement of the productive sectors of these countries, but also coordination between different international actors involved in regional development.

It becomes evident that collaboration, in this case, between customs offices is once again the basis for facilitating intra-Mediterranean trade. Such collaboration must serve to harmonise and reduce procedures linked to the import/export of goods and enable the opportunities offered by the digital transformation to be fully exploited.

Similarly, the definition of joint strategies in the maritime field is an essential element for progress towards the sustainability of maritime transport in the Mediterranean Sea and, therefore, coordination between countries to improve the environmental aspects of shipping.

Finally, the creation of a common training structure for transport and logistics, as well as the facilitation of the conditions of movement of workers between the EU and the countries on the southern shore of the Mediterranean also requires collaboration and agreement between countries. These actions are proposed to overcome the different crises affecting the transport and logis-

tics labour market in both the southern and northern shore countries.

Integrated Rather than Isolated Proposals

This variety of proposals should not be seen as a set of isolated and individual measures, but rather they should be viewed together and the multiple intersections between them should be pointed out.

Perhaps the clearest example is how the environmental element is integral to various areas of transport and logistics improvement. If the sustainability of the transport system can be considered as an objective in itself, with the improvements brought to the environment, health and the mitigation of climate change, it is no less true that it is configured as a central element in the efficiency and modernisation of both future supply chains and production systems. Moreover, the possibilities that the current scenario offers for true trade integration in the Mediterranean rest on these two elements, supply chains and production systems.

Digital transformation is other measure that should be noted for its cross-cutting nature. It is not only a question of digitising the data exchange processes linked to flows, but this transformation also encompasses aspects as diverse as the content of training for transport professionals, improving the energy efficiency, and therefore the environmental efficiency, of land and maritime vehicle fleets or the productivity base of economic sectors aimed at sustaining greater regional and global integration of the Mediterranean. And in the case of such integration, beyond trade facilitation measures, efficient transport and logis-

tics systems, modernisation of economic sectors and training and mobility of professionals appropriate to the multiple challenges that arise are necessary.

Conclusion

The different contributions in this volume highlight the uniqueness of the moment, in which different crises or disruptions pose multiple challenges and diverse opportunities. The vision of

an integrated, efficient and sustainable Mediterranean entails a wide range of decisions that require the shared assumption of challenges and opportunities. In other words, dialogue, coordination, cooperation and multilateralism between different actors, whether state, regional or international, public or private, on both shores of the Mediterranean are necessary if the present disruptive moment is to be successfully faced.

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