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Mediterranean Short-sea Shipping

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This report attempts to analyze the information collected from our CODE-TEN partners (CESUR, INRETS, TRT, CTC, INCERTRANS) on their countries' shortsea shipping frameworks. The main objectives are to provide an overview of the current situation in the Mediterranean and the Black Sea, to recognize major trends and perspectives and on this basis, to identify pragmatic development alternatives, which will eventually be assessed using the framework of the CODE-TEN methodology.

Part I - General Framework

The first part of the report concentrates on the major elements of the policy and economic environment of shortsea shipping in the Mediterranean and the Black Sea. In particular, it focuses on the content of policy initiatives and the interaction of policy actors within the policy-making process. Analysis then turns to the market characteristics, pressures for development and the level of adjustment of the Mediterranean shortsea sector to the new economic situation.

1. Introduction

The distinctive characteristics of short distance operations, and the development of geographical regions characterised by a substantial interchange of traffic flows, have led to an additional differentiation between deep and shorsea shipping. Since there is a lack of a universal definition[1], for the purposes of this study, Mediterranean shortsea shipping is understood to cover all sea transport in the region (including the Black Sea), which does not require ocean-crossing voyage. Thus, Short-sea ships are sea-going cargo-carrying of less than 5000 GT[2]. Ships of less than 100 GT, non-propelled vessels, and harbour or inland waterway service vessels are not included. It may include a voyage leg on rivers, lakes or canals.

Shortsea shipping plays a vital role in the international movement of goods and passengers within the Mediterranean, a role that is increasingly recognized and understood by European

[1] In 1970, shortsea shipping was conceived as the part of maritime traffic which is operated among countries without ocean connections and excluded seaborne trade conducted within national borders. More recently, La Saponara (1993) anticipates that a workable definition *"must cover the whole of the trading and shipping operations – traditionally termed international and cabotage shipping – carried on in a comprehensive geographic area characterised by a substantial interchange of traffic flows and by similar production techniques in the field"*, The Institute of Shipping and Logistics (ISL, 1993) provides a practical definition of Mediterranean shortsea shipping *including "all the maritime traffic in the area stretching from Gibraltar in the West to the Black Sea and the Suez canal in the East"*.

[2] Searching for an accurate criterion, Grilley & Dean (1992) prefer the 5000 gt upper limit, but Peeters (1995) favours the 6000 gt. Yet, when these ships do not operate exclusively in shortsea routes, some bigger vessels operate in the shortsea market.

policy makers. Shortsea Shipping enjoys increasing attention, as a promising and alternative transport mode, notably from policy makers and national governments and EU institutions.

Shorsea shipping in the Mediterranean, which is the reference space for this case study, takes place within or between EU Member States, or between the Black Sea or the Middle East and Northern Africa countries bordering the Mediterranean Sea.

There are three main factors pointing to the increasing development of the Mediterranean short-sea shipping[3]:

- Political developments
- Economic growth, which results in ever, more bottlenecks in land transport modes and the increasing demand for transport services.
- Natural advantages over transport modes as being the most cost effective with regard to investments/capacity, environmental friendliness, energy efficiency, effectiveness for development of peripheral areas and the natural infrastructure.

During the last few years, the European Union has put a strong emphasis on shortsea shipping by recognizing it as one of the transport modes besides rail, truck and barge.

2. The Policy Environment

2.1 The Early Years of EU Policy Initiatives

An EU policy addressing the Mediterranean shortsea market became a component of the EU agenda in 1991. Before this, shortsea shipping has not been recognized as a genuine economic sector with its own significance and attributes. The considerably different geopolitical structure of the Mediterranean was a variable that constrained the scope of thinking of all trade flows in the region within a unified pan-Mediterranean dimension. Maritime exchanges between the EU and the East European nations were subject to the total of the relationships between the two blocs, so the need for the policy differentiating between short and deepsea maritime operations with state trading countries around the world was limited.

The geopolitical changes produced by the collapse of the economic efficiency and political institutions in Central and Eastern Europe played a very important role in the re-definition of shipping strategies in the Mediterranean. For most of the 20th century the division of Europe into East and West and the major differences in the economic systems restricted economic activities, limited policy cooperation, and played a negative role on thinking about transport issues or designing shortsea shipping policies in pan-Mediterranean and Black Sea terms. A totally different situation has been evolving since 1989. In economic terms, the liberation of the East-West relationships generated demand for shipping services, as well as the opportunity to provide them, on a unified basis.

[3] European Shortsea Shipping: Proceedings from the First European Research roundtable conference on Short-sea Shipping,1993

Neither was there any EU activity regarding the policy framework governing the considerable maritime flows between Mediterranean countries before the middle of the 1980s. From 1957 to 1974 this absence can be ascribed to the exclusion of the maritime mode from the CTP. Maritime traffic between or within the two of the six founding members of the EU neighboring the Mediterranean (i.e. France and Italy), was relatively unimportant contributing to the non-appearance of any supranational policy making interest. Yet, there was no change after the first EU enlargement (1973) and the legal confirmation of the Commission's maritime transport policy-making authority (1974). The importance of the internal maritime transport market increased but its regulatory framework remained subject to national policies and/or bilateral agreements. Nevertheless, the Brussels package (1979) had a certain impact on the operation of the internal maritime market: it provided that liner trade between the Mediterranean member states would not be covered by the UNCTAD[4] Code cargo sharing formula, but would be redistributed among them on the basis of commercial criteria. Apart from its market consequences, the provision was substantial in policy terms. In essence, it recognized that maritime relations within the internal market could be developed under a distinctive EU regulatory framework rather than the international.

2.2. The New Policy Developments

2.2.1 Freedom to provide services

The turning point was the 1984 European Court of Justice's (ECJ) judgement that the Council has failed, *inter alia*, to ensure the freedom in the sphere of international transport and to lay down the conditions under which non-registered carriers may operate shipping services in a member state in the Mediterranean. By ruling that the Commission was obliged to elaborate relevant proposals, the ECJ led to the first EU initiatives intrinsically related to the Mediterranean shortsea market. In 1985 the Commission proposed the application of the freedom to provide services in both intra-Mediterranean and cabotage maritime trade (Commission of the European Union –CEU-, 1985).

The proposals focused on the need to converge the heterogeneous national policy frameworks in line with the transport title of the Rome treaty. Following national traditions, which preceded the inception of the EU, intra-Mediterranean maritime flows between member states were subject to several cargo reservations[5]. Maritime cabotage trade was liberalised in the North states but all five Mediterranean states (France, Greece, Italy, Portugal and Spain) allowed the provision of services only to their national flags. To the Commission, opening competition and creating a wider Mediterranean market would be a much-needed assistance for the expansion and efficiency of the mode. However, none of the proposals was easy to

[4] United Nations Conference on Trade And Development.

[5] France, Spain and Portugal, reserved "government" cargoes to national flag ships. France reserved 66% of her crude oil imports and 40% of her coal imports to French cargoes. Spain reserved oil, cereal and tobacco to Spanish fleets (Davis, 1992).

progress. Although an agreement regarding intra-Mediterranean states' trade finally became part of the 1986 regulatory measures, the removal of cabotage restrictions was made more controversial, and following further discussions positively concluded in 1992.

The Commissions proposals mobilized stakeholders to articulate their interests via two routes. Within the national arena, interest groups tried to influence the positions of their national administrations. As regards the Mediterranean states, shipowners enjoying the advantage of protected national markets, even subject to manning requirements and price controls, supported the continuation of the *status quo*. Precisely because cabotage restrictions were accompanied by strict manning requirements and crews composed only by nationals, trade unions opposed liberalization as a means of securing jobs and called for the co-operation of national administrations to protect national employment. The less, or not at all, organized shippers at local, or national level, - a not so rare phenomenon in the Mediterranean region – were not mobilised against regulated prices and frequent services. These views empowered national administrations to retain their objections, and informed counterproposals.

The diversity of national policies produced analogously different positions of national governments. The protected cabotage was clustered in the Mediterranean states and all these countries were in favour of retaining these restrictions as a mean to fulfill public service obligations to islands and remote regions. However, the additional reasoning, and subsequent positioning, advanced by some of these governments differed from others. Italy, Spain and Portugal subordinated liberalization to harmonization of social costs and employment conditions, in order to present their national fleets and seafarers' jobs. France initially rejected the whole idea of liberalization but during the discussions, this attitude changed. Then, France, Portugal and Spain demanded a long phase out period before the abolition of their intra-Mediterranean cargo reservations. The fifth Mediterranean state, Greece, argued for the immediate liberalization of intra-Mediterranean trade but opposed the cabotage proposal on the grounds of strategic location and national security derived from the long-term troublesome relations with Turkey.

Although the 1986 Council failed to unanimously agree on cabotage, following further contacts with both stakeholders and national administrations, the Commission recognized the severe objections for an immediate and, most critical, unconditional abolition of national restrictions. The Regulation[6], that after a long period of intensive negotiations, came into force in January 1993, satisfied the "freedom to provide services" principle, as it was stated that any vessel flying the flag of a member state is able to provide cabotage services within the EU states in the Mediterranean. National administrations retain the ability to maintain public service contracts on specific routes, under which they may regulate capacity, quality, and rate, obligations through a non-discriminatory basis in respect to all EU-flagged vessels. A special implementation regime spans over a period of 12 years allowing considerable time to adjust to the incoming conditions, a provision that satisfied skeptical shipowning views. In contrast,

[6] Council Regulation 3577/92, of 7.12.1992

with its "national security" argument the Greek objections on market peculiarities were taken into account so this is the last member state to implement the Regulation in 2004. Besides, the regulation provided that ships operating in island cabotage should apply the manning rules of the state in which the vessel is performing a maritime transport service, rather than the rules of its flag-state. This satisfied trade unions which maintain a privileged position, *vis-à-vis* non-EU Mediterranean nationals, in the liberalized cabotage trades. Given all these exemptions, the more protective EU states in the region are expected to face less reactions in their domestic arenas.

2.2.2. A common shortsea shipping framework

In September 1991, a Commission communication to other EU institutions put on the agenda the need to develop an EU policy framework dealing explicitly with the integral shortsea shipping sector. Although it did not include regulatory proposals, the document advocated a new strategy to prepare the EU maritime transport system in the Mediterranean for the benefit of the Single European Market. On the grounds of the already high trade and shipping demand in the Mediterranean, and expecting their further increase due to the competition of the internal market and the transition process in the Black Sea countries, the Commission documented its aim as to promote the competitiveness and encourage the greater use of *"transport along the Mediterranean's geographic coastline plus Black Sea coasts"* (CEU, 1991). In 1992, the White Paper on CTP strategy expressed a similar aim. Analysis derived from three strong trends; the growing demand for transport services; the increasing imbalance between the different modes; and the stagnation of the investments in maritime transport infrastructure. This intention was re-addressed in 1992 Green Paper wherein shortsea shipping was identified as a priority field, especially in the Mediterranean and the Black Sea where the need to reconcile transport demand with the requirements of the environment, is pressing. Motivated by the environmental and energy efficiency advantages of the mode, the Commission indicated that the potential shift of cargo from land modes to the maritime mode should be fully developed.

Shipowners welcomed this initiative, however, the Commission expected them to react more positively than other industries, as by nature shipowners have much more to gain by boosting shortsea shipping in the Mediterranean, than ports or shippers. Indeed, shippers perceived it as a policy serving purposes other than those of their immediate interests[7].

2.2.3. Specific Policy Actions

This preliminary phase of a common policy has led to the publication, in summer 1995, of a Commission document outlining specific policy actions to be undertaken at EU level and where appropriate by national, regional and local authorities, even the industries themselves,

[7] Shippers want to use good shipping services and only secondly are concerned whether these services are provided by European shipping or not.

in order to improve the quality and efficiency of shortsea shipping in the Mediterranean (CEU, 1995). The first axis of this project was directed to the port element, and especially infrastructure, involving European institution in devoting funds and Mediterranean member states contributing through the submission of projects and the distribution of the available regional funds. Therein, the Commission declared, that because of the difficulties in designating ports of European interest in the Mediterranean, it would not list a defined strategic or priority network that should be constructed within a set time. Furthermore, the Commission announced its decision to study the transparency of port accounts and publish guidelines on state aids to ports.

Although the document did not result in a comprehensive shortsea shipping policy, the supportive of its content, shipoweners emphasised the confidence that it has given on the effectiveness of the consultation process. In this vein, they welcomed its presence. Unconvinced actors such as the port industry underlined the "negative" implications of the process, stressing that the Commission document and the European Parliament's support, raise the profile of shortsea shipping in the Mediterranean at the commercial level as a viable mode. But this is not necessarily right as it implicates tremendous amounts of risk and money, when businesses do not know how they are going to compete. Arguing that the document simplistically overemphasizes port deficiencies, they object the study and development of guidelines on port tariffs, on the grounds of *"difficulties in defining what is state aid"*, or *"where a port starts or ends"*. Finally, to trade unions the determination of the Commission to put forward a clear framework could prove more useful if it would overcome omissions on the social side.

3. The New Economic Environment

As in the policy arena, the economic environment of Mediterranean shortsea shipping has changed dramatically over the last decade. Some of the changes are the products of intrinsic market developments, derived mainly from changing behaviors of the market actors either on the supply or the demand side. Others are attributable to external factors, largely beyond the control of shortsea market forces. In conjunction, they have created a new economic environment within which Mediterranean shortsea shipping operates.

3.1. Quantitative and Qualitative Market Changes

Two of the most appreciable market developments are the remarkable expansion and the structural modification of European seaborne trade. During the second half of the 1980s western Europe experienced one of its longest post-war booms[8]. The economic expansion of the 12 member states was accompanied by a 4.8% annual trade growth. Importantly for this

[8] From 1985 to 1990 the economies of the 12 EU member states grew annually by a rate of 3:1 comparing to averages of 2.5 and 1.4 for the periods 1974-79 and 1980-84 respectively (average annual percentage change of real GDP at constant prices; based on 1985 price levels and exchange rates; Source: OECD, *Basic Indicators*, Annual publication).

analysis, trade between member states grew remarkably faster than economic output. Proportionally, intra-EU trade represented 53% of the total EU trade at the end of the 1970s, reached 55% in 1985 and topped 60% in 1990. In 1992, it accounted for 62% of the total and for 13% of the EU GDP[9]. Apparently, this augmentation accelerated, both in absolute and proportional terms, since the relaunch of European integration. The interest in the completion of the Single European Market (SEM) was followed by a progressive (hitherto incomplete) elimination of non-tariff barriers advancing the unrestricted circulation of goods inside the EU. Notable examples are the lessening of border controls and the mutual recognition of technical regulations and standards. The exact magnitude of the static and dynamic integration effects is not possible to determine, since the rapid growth of the intra-EU trade is bound to be influenced by many factors. Nonetheless, the stimulation of the cross-frontier flows previously discouraged by non-tariff barriers and a national market attitude drove to a sharp intra-EU trade expansion.

3.1.1 Expansion of the Mediterranean Seaborne Trade

The already substantial intra-EU market began to grow having evident effects on the traffic growth of the Mediterranean region. This uninterrupted traffic growth has been accompanied by a steady increase (at around 5% per annum) of general cargo and containerised commodities[10]. Figure 1 illustrate the changing division of Mediterranean maritime cargo. Overall, 15.2% of the total intra-EU maritime flows are recorded as intra-Mediterranean movements. Unitised intra-Mediterranean traffic in 1996 was twice as much as in 1990. Throughout the period between 1990 and 1995 container trade from Northern and outside Europe countries increased by 4.4%, a substantial part of which arrived at a major Mediterranean port (Algeciras, Gioia Tauro, Genoa, Barcelona, Piraeus, Marsaxlokk, Damietta or Limassol) and then was transhipped to another port. In general, the region's ports (see figures 2A, 2B) have been lagging behind their northern competitors in terms of investment, pricing efficient management, and physical accessibility to large markets.

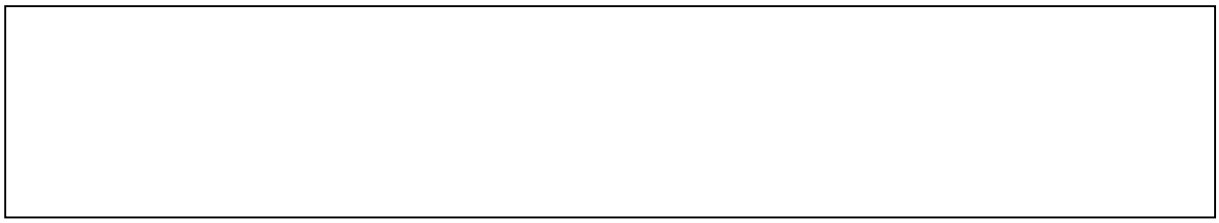
It should be pointed out that a high proportion of the trade growth in the Mediterranean has been in low value products, once shipped in bulk, but now treated as containerisable. Such products are sugar and chemicals. It is the low value of these products that has been instrumental in making freight rates, at best, stable. It is this reduction in prices that has lessened the competition of trailer operators, whose transit times are marginally better, but whose rates are very significantly higher than shipping lines. Over the past two years, rates to Israel for example, have declined by up to 30%, while to Turkey by up to 50%. Rates are also being depressed by new production systems substituting direct calls through hub & spoke systems using for example Gioia Tauro as a hub and spokes are as far along the eastern Mediterranean as Israel.

[9] Sources: Eurostat, Basic Indicators; CEU, Panorama of EU Industry, annual publications.

[10] While total traffic levels have risen, there has been little change in the basic trade patterns which sees manufactured and consumer goods go southbound, and agricultural products and seafood northbound.

Whilst it is recognised that volume growth in the trades is at a steady rate, it remains impossible to gauge the amount of capacity on offer. This is because the hub and spoke operators, which account for around 33% of the services on offer, have flexible allocations for these markets.

Figure 1: *Freight and Passenger turnover in 1996 per country.*



Source: Green Paper on Sea Ports and Maritime Infrastructure

Figure 2A: *West Mediterranean ports*

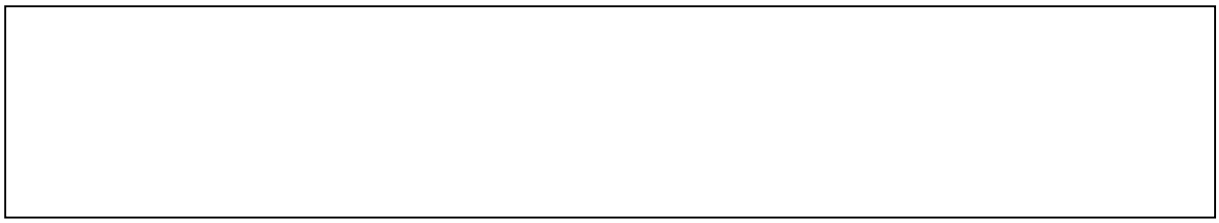
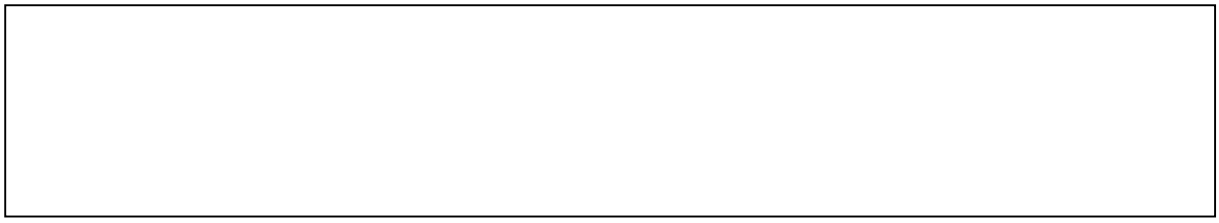


Figure 2B: *East Mediterranean ports*



3.1.2 Market Diversity

The Mediterranean region is one of great complexity and contrasts. There are enormous differences in scale, development and trading relationships and for most of the region development and cohesion are important issues.

In order to have a better understanding of the above, the shortsea framework should be systematically structured and studied. From a first look, it can roughly be divided into two quite distinct markets:

1. *Feeder operators* inter-connect seaports on behalf of deepsea shipping lines which need to re-position their containers. The feeder business has grown during the last decades and have taken over the task to serve Mediterranean ports. In general, they are not involved in hinterland activities.
2. *Regional operators* also labelled *door-to-door operators* serve genuinely regional transport demand, e.g. between Northern Europe and the Mediterranean. They are in

direct competition to overland transport modes such as road and rail and often organise the complete transport chain including the land transport legs. It should be noted that these intra-European shortsea voyages may be direct calls or may be routed via transhipment hubs resulting in rather complex trip schedules.

As deepsea lines move steadily to larger vessels, calls are reduced to one port in each trading area, hence, a strong intra-Mediterranean feeder trade to and from the outports develops[11]. The increase of the feeder activity contributed to a remarkable growth of containers handled in Mediterranean ports. With this and Ro/Ro traffic being the most expanded market niches, the current split between them is well in advance of feeder services for relatively long distance voyages, and of Ro/Ro mainly for short distance, coastal shipping.

Italian owners were amongst the Ro-Ro pioneers of the late 1960s, when freight ferry services between mainland Italy and the islands of Sicily and Sardinia were developed. The Mediterranean Sea is a very important Ro/Ro service area with shares of about 50 % each of the western and eastern Mediterranean. Because of the long coast-lines of the countries in the West Mediterranean, there exists a substantial share of domestic trades. Moreover, there are several operators offering Ro/Ro services on a mixed liner/tramp basis, which can hardly be attributed to individual countries (total capacity of 127 vessels with 715,000 gross tons[12]). In the Mediterranean, the majority of Ro/Ro services is observed in either domestic traffic to Spain and Italy (33 %) or South Europe/North Africa (40 %) and other intra-Mediterranean trades (26 %). The remainder consists of services either between Baltic Sea and the Mediterranean or between Belgium/France-Northern Africa.

Based upon 1994 data published by Ocean Shipping Consultants[13], feeder traffic for eastern Mediterranean trades amount to about 723,000 GRT. About 13 % of total capacities are related to trades between the East Mediterranean and North Europe and 23 % to those between East Mediterranean and Black and Red Sea, respectively.[14]

In the eastern Mediterranean the situation is rather confusing with Damietta, Limassol, Larnaca, Alexandria and Piraeus all enjoying some success in the transhipment market, without doing enough to assume undisputed regional superiority, or even to establish that the eastern Mediterranean will ever be able to develop a major transhipment centre which is independent of the larger volume ports in the western half of the region.

3.1.3 Structural Modifications of the Mediterranean Seaborne Trade

Structural changes are furthered by reforms in goods production and distribution. The increasing application of logistics is an element affecting the profile of the demand for

[11] The feeder market carries cargoes to the requirement of their customers, and also undertakes the carriage of empty containers for deepsea lines where the trade is imbalanced and container repositioning necessary.
[12] G.P. WILD (International) Ltd.: *The Ro-Ro Market*, London 1994, p. 40.
[13] Ocean Shipping Consultants: Market Prospects for European Continerisation, Chertsey 1995, p. 12
[14] M. Zachcial, *"Land/Sea Transport flows in Europe"*

shortsea shipping in the Mediterranean, but also transforming the organization of the maritime process *per se*. Production practices move steadily from the conventional mass production and economies of scale towards a process dominated by focused manufacturing of specific parts with earlier steps being conducted by outside suppliers. Thus, new operational concepts are driving factors for changes in industrial enterprises' operations. They imply a just-in-time manufacturing and procurement strategy, which is the supply of the exactly required items at exactly the required quality, in exactly the required quantities at exactly the requred time. Those involved in this chain, from early suppliers to final customers, favour the synchronisation of the whole transport operation to serve an unbroken management of physical lows[15].

The integration of shortsea shipping into more sophisticated just-in-time systems remains a permanent problem in the Mediterranean Sea. Transit times may be inaccurate and delivery times from port to importer premises are subject to lengthy delays in customs clearance. Customs clearance is still a big problem in Turkey, Egypt and Syria and it is reckoned that, in some cases, delivery from port to importers premises can take as long as the whole sea voyage.

Of the eastern Mediterranean ports, it is felt that Beirut and Limassol are among the most efficient. Other ports can still be problematical in terms of both congestion and customs clearance delays. In the case of Turkish ports, there are also problems due to instability in stevedoring costs. Inaccessibility, customs delays, general bureaucracy and corruption temper the development in the Black Sea.

By introducing a new trading context, where transportation is an integral part of production and marketing strategies and efficient industrial functioning is endangered whenever bottlenecks and delays are caused by the transport system, logistics alter the industry-transport relationships. Least cost is no longer the only criterion for selecting a transport mode. Modern capacity, more frequent consignments, reliable predefined schedules, and services integrated to the other parts of the transport network represent additional factors that concern cargo owners. When logistics determine between 10 to 30% of all costs in industrial enterprises and more than a quarter of these costs is generated by transport activities (Caspers, 1992), shippers are also interested in quality and reliability. This is an added dimension with critical repercussions on ship design, cargo handling, communication technologies, the role of ports, and the importance of integrating transport modes. The impact may not be the same in all the segments of the market[16], but neither individual market actors, nor single industries, can remain competitive if the whole system does not demonstrate an ability to revitalize the new types of demand.

[15] US-based companies, in particular, have been among the first to take this view with many of them selecting a single Mediterranean port of entry, to serve a wider geographical market through a just-in-time process. According to a World Bank (1995) survey, by 1990 some 28% of all shipments in the US and EC were carried on a just-in-time basis and the portion projected for 1995 was over one-third.

[16] For instance, logistics do not affect tanker operators and oil distribution.

The intensification of competition between transport modes for the same consignment is another feature that characterizes the Mediterranean environment. The expanding general cargo figures, particularly their most profitable unitised part, represent commodities exposed to sharp modal competition. Road and air are two modes already involved in business logistics. Rail also competes strongly for around-Mediterranean traffic. Excluding the cases where geographical characteristics impose shortsea as the unique viable choice, the competition has been sharpened by developments to other transport modes. The construction and operation of high-speed distribution networks within and between areas in the Mediterranean and the Black Sea, once mainly served by sea shipping, introduce prospects of growth in highly flexible low-cost inland transport modes. Moreover, road, rail, and waterway junctions are designed or implemented to join together infrastructural networks, creating continuous land routings and reducing transit times over long journeys. Together with the plans for connecting high-speed railways, originally designed merely on a domestic basis, to combined international transport networks, they provide the impetus for further development of modal techniques that exclude the maritime mode. The distinct feeder market provides an illustrative example. Feeder lines are more flexible than other modes insofar as they react quickly with unscheduled movements to meet changes imposed by a customer and absorb large traffic volumes. However, on certain routes road operators now compete effectively, an example being the Benelux – Spain service where the main feeder traffic is developed without using see feeders.

3.1.4 Pressures for Development

In such a multidimensional environment, the demand for a process oriented treatment of goods and information, logistics, and new types of cargo, inaugurates a new role for the Mediterranean ports. The traditional conception of a "gate" simply providing the facility of transferring cargoes between ship and quayside becomes no longer adequate. Along with conventional operations, ports need to work as load centres providing a range of complementary storage and distribution services. The cargo generating capacity remains a powerful element but other qualitative factors - i.e. inland connections or provision of electronic data information - come into play. In their absence, ports cannot meet the demand for commodities to be delivered (or transhipped) quickly and predictably, and the user considers the employment of the mode as a disadvantage of the production function. In order to compete in this changing environment, Mediterranean ports have to adjust quickly, become bigger in terms of infrastructure, and increase their handling capacity by introducing new and sophisticated equipment. All these should be accompanied by a more flexible constitutional, fiscal and operational framework.

As port authority reformation evolved during the last decades, several different models of port constitution have emerged, in particular privatization, corporatization and commercialization. Privatization, which is in some ways the most transparent of the above, has become the most fashionable trend and after the dramatic and controversial restructuring of the UK port

industry in the early 1980s, many Mediterranean countries have pledged to increase the role of the private sector in their ports (e.g. Italy). Some others have already completed the actual implementation of the deregulation policies (e.g. Spain), while others are still pondering the best way forward (e.g. Greece). The growing number of Mediterranean and Black Sea countries that have indicated the intention to introduce some degree of private sector involvement in their national ports industry, support the view that most governments (even those with centrally planned economies) have now come to recognize the fundamental difference between port administration and management. Thereby they implicitly admit their incapacity to promote an entrepreneurial culture in public port bodies, generate adequate resources to modernize their ports, keep up with trade developments and technological change and satisfy the users' fast changing demands.

Eventually, in a privatized environment, shipowners and the port industry will become more interdependent than ever. To ports, the means to win traffic and secure the continuity of costly adjustments presupposes closer cooperation with the shipping lines. Such modernisation is of equal importance to shipowners. It influences the variation of the costs associated with the port interface[17] and improves the speed of shortsea shipping. Due to the latter, the range of the potential freights expands, and operators who invest in modern and larger shortsea vessels can increase their competitiveness and profitability.

A growing interdependence also marks the relationship between shippers and shipowners. As chain transportation implies a series of operations frequently supplied by different modes, the emphasis is not just on the operation of each link but the coordination between the various stages as well. Several shipowners attempt to keep in pace trough their transformation to multimodal operators. To compete successfully they have their own road haulage, establish schedule cooperation with rail networks, or operate port terminals. The objective is to control the complete chain and offer profitable, integrated to the inland network, services. To establish this control they need sufficient knowledge that the risks associated with product innovation are sufficiently minimized trough the readiness of shippers to employ it. On the other hand, relatively higher value goods are travelling via shorter sea distances. The satisfaction of cargo owners' needing reliable, flexible, and cost-effective transport arrangements is eventually dependent on the options and the quality of the services supplied.

In this context, market forces have to strive for innovation in order to compete. Besides ports, a major innovation relates to the type of vessel providing shortsea services in the Mediterranean. Along with larger ships to accommodate the expanded demand, the greater use of vessels that employ sophisticated technologies and work as functional machines for the purposes of carrying cargoes (and/or passengers) on the sea leg of an intermodal movement, becomes more necessary. Innovation diffusion may double speed, lessen delivery time, lower logistical costs, increase frequency potential with the same number of ships and, not least, act as a psychological catalyst, similar to the one the introduction of fast trains has been to the use

[17] Which according to shipowners, currently stand on average above the total shortsea transport costs.

of railroads. In part, the know-how for ships loaded and discharged under the control of computerised systems is already available (i.e. Ro/Ro units, cellular containerships), although innovative vessel designs, such as catamarans and other high-speed ships, have to be further developed.

The need to modernise vessels upgrades the importance of quality manning. Automation at sea decreases the size of crews but also redefines their roles. More qualified and experienced, less "pure" shipping men represent a presupposition for the enhancement of superior services. The shore-based part of the operation also presumes certain levels of technical knowledge. The premise that all tomorrow's seafarers would be supplied from low-paid unqualified labour forces is challenged by a pattern where qualified labour produces operational savings that compensate for its increased price to the employer. The tendency to employ untrained seafarers holds, yet the reliance of innovation on skilful employees indicates that the commercial future and competitiveness of the sector increasingly rests on the assumption that qualified seafarers exist and operate sophisticated ships.

3.1.5 Tracing the Level of Adjustment to the New Economic Environment

In summary, a new economic dynamic has been developing, creating adjustment pressures on the Mediterranean shortsea shipping sector. The considerable quantitative and qualitative changes come with the acquisition or loss of market shares, the break-up of previous market balances, and fresh inter-industry relations. On the one hand, they trigger intra-modal competition. On the other hand, they are forces transforming the commercial relationships between the market players by creating, for a variety of reasons, a growing interdependence of the market actors. None of the players in the Mediterranean can stimulate its competitive position if the others do not show the same level of adaptability. It is the entire shortsea sector that needs to improve the internal structure to remain competitive within the new reality.

Still, the essential adjustments are only partially in place. Shortsea shipping is well established in various Mediterranean corridors but a large part of its market share results from compelling geographical circumstances, or mechanical economic reasons (i.e. low value bulk commodities which benefit from scale economies). The mode has yet to compete effectively in all intra-Mediterranean markets. For instance, no-bulk trade between countries with major container ports such as France and Spain is seldom carried in containers by sea.

The size of the vessels has increased[18] but kept up with technological achievements only in limited routes. Obsolete ships are still in operation and several market sections lack the services of available technologies. The structure of the Mediterranean shortsea fleet reveals that shortsea operators continue to use multipurpose general cargo or all-round Ro/Ro vessels, but cellular containerships, characterised by a high flexibility in their operational possibilities, represent only a minor part. The significant higher average age of shortsea vessels than that of

[18] The 1988 average size over 3000 dwt per vessel was more than twise the size of ten years before. That said, there is not a clear cut of vessels operating in the Mediterranean shortsea market.

deepsea fleet confirms a slow replacement cycle. Notably, the nationality breakdown of the fleet ownership is highly concentrated, with owners from three Mediterranean countries controlling 41.5% of the EU and 22.4% of the total European owned ships operating in the Mediterranean.

Table 1: *European Shortsea fleet by Ownership*

	%-of total EU fleet	%-of total European fleet	%-flag			Type		
			EU	RE	RW	Liquid	General cargo	Other cargo
Greece	22.0	11.9	63	15	22	23	45	32
Italy	12.8	6.9	na	na	na	32	29	39
Spain	6.7	3.6	84	2	14	10	53	37
Total	41.5	22.4						

RE: Rest of Europe; Rest of World; ships of 500 grt and above; as of 1/1/92
Source: Grilley and Dean (1992)

Although ports specialisation implies substantial investments in infrastructure, the level of these investments in the Mediterranean has followed a negative trend, whether it is expressed as a share of the total of the investments in transport infrastructure, or as a percentage of the GDP. The aggregate European OECD[19] investments in transport infrastructure declined from 1,5% of the GDP in 1975 to the relatively low 1% throughout the 1980s with the share of ports decreasing from 5% to 3.5% of the total (ECMT[20], 1991). True, the absence of conventional capacity infrastructure is not a generalised problem and, largely due to the vigorous competition that takes place even between ports within the same country, most of the Mediterranean ports have covered such needs. But at the end of the 1980s even the most successful Mediterranean ports needed further modernisation to integrate into the logistical systems. Moreover, in some Mediterranean regions and in the Black Sea, ports have not kept pace, but they need to do so to overcome their less efficient and less specialised facilities.

The adjustment process has not been facilitated by the national policy frameworks that have either neglected or been ineffective at building up the external environmental parameters that would improve the competitiveness of the sector. In some cases - i.e. Greece (where all ports are public entities), the national administration has followed a "road-addicted" investment policy in transport infrastructure failing to modernise port facilities (Pallis, 1998). There is also an issue of adequate monitoring effects of policies, and assessment of external costs in markets, implicating even the maintenance of information regarding the current modal accommodation of demand. Recent reviews of all Mediterranean national transport policies concluded that comprehensive statutory requirements for environmental assessment seldom exist, and practical experience is limited.

It appears then, that shortsea shipping in the Mediterranean has received little or no recognition as a potential joint contributor to the solution of the environmental problems. As a

[19] Organization for the Economic Cooperation and Development

[20] European Conference of Ministers of Transport

recent study in several Mediterranean countries concludes, although the attitudes of stakeholders towards various transport modes are, in principle, neutral, the tendency of national transport policies to display a comparatively more positive regulatory behaviour towards alternative modes is among the critical socio-political factors that reflect an unfavourable mood for shortsea shipping (Table 2). When external, not-controllable by the market, variables contribute to a context that allocates a greater social importance to the future of the sector, and market changes demand radical improvements of its internal characteristics to better its competitive position, national policies have not been channelled in a way that would induce positive changes in the environmental framework characteristics faced by shortsea shipping.

It must be noted, however, that due to the trends in manufacturing, supply, and distribution processes the dimension of the shortsea operations in the Mediterranean is experiencing increasing internationalisation. Expansive international trade and growing multimodal operations of a wide geographical scale cannot be easily administered by national authorities. It was in the second half of the 1980s and within this context that the various EU policy initiatives were introduced.

Table 2: *National Governments and Shortsea Shipping**

	Greece	Italy
Government regulation towards alternative modes**	+	+
Relationships of shortsea operators with regulators	E	E
Attitudes of stakeholders towards various modes	E	E

* *A 5-point scale is used: (+) attractive (E) neutral*
** *A high score for alternative modes reflects an unfavourable mood for shortsea shipping*
Source: Peeters et al, 1995

4. Special Characteristics of Shortsea Shipping in the Black Sea

The Black Sea occupies an area of about 411,540 km^2 and together with the Azov Sea, it exceeds 461,000 km^2. The maximum distance between coasts is 1,125 km on the East-West, and 600 km on the North-South direction.

Navigation is possible throughout the year, exempt for the northern part of the Azov Sea, where, during heavy winters, icebreakers are needed for no more than two months. Three major navigable rivers flow into the Black Sea, the Danube, the Niper and the Don, extending considerably what can be called “the Black Sea maritime hinterland”. Together with the Rhine, the Danube forms a navigable corridor, which crosses Central and Western Europe to the North Sea. The Volga - Don Canal allows for ship navigation up to the Caspian Sea and then, through Russian inland waterways, to the White Sea, passing from the Moscow and the St. Petersburg area. The Black Sea is connected to the Mediterranean through the Bosphorus and Dardanelles and then, to the Atlantic Ocean through Gibraltar and to the Asia/Pacific region through the Suez Canal. Major continental corridors (IV, VIII, IX) are also connecting

the Black Sea to the European hinterland. Corridor IV's section towards Sofia has an outstanding importance as it provides (with corridor VIII and via-Egnatia) an East-West link to the Adriatic Sea.

The Black Sea forms a natural border of 6 countries: Romania, Ukraine, Russia, Georgia, Turkey and Bulgaria. These six countries, together with Greece and Albania have created a zone of Economic Co-operation in the Black Sea (BSEC), having as their main focus the development of transport in the region.

There are more than 35 ports on the Black and the Azov Sea (table 3). About one third of these ports are accessible to middle and large capacity ships. Such ports are: Constantza, Odessa, Novorosiisk, Poti, Samsun, Istanbul etc., as well as the ports situated on the Danube, namely Sulina, Tulcea, Galatzi, Braila in Romania and Reni, Ismail in Ukraine. The planned port of Giurgiulesti in the Republic of Moldavia, will soon be part of these ports.

***Table 3**: Ports in the Black Sea and the Azov Sea*

No	Country	Port	Depth on entrance (m)
1	Romania	Sulina Midia Constantza Mangalia	-7.30 -10.00 -23.00 -20.00
2	Bulgaria	Varna Burgas	East -10.98 West -10.00 -12.50
3	Turkey	Eregli Zonguldak Inebolu Samsun Ordu Trabzon Fatsa Giresun Hopa Rize Sinop Istanbul	-12.80 -10.00 -8.00 -11.90 -10.00 -12.00 -8.00 -14.00 -15.00 -8.00 -12.80 -12.50
4	Gruzia	Suhumi Poti Butumi	-7.80 -13.00 -13.00
5	Russia	Novorosiisk Tuapse Soci Taganrog	PMV –12.80 PP –20.00 * * *
6	Ukraine	Odessa Sevastopol Ialta Feodosia Kerci Nicolayev Kerson	-14.50 * * -8.00 * * -2.20

		Ilychevsk	*
		Belgorod-Dnestrovskiy	-6.50
		Bredians	*
		Zhdanov	-8.80
		Iujnii	-14.00

The important political and socio-economic changes that occurred in Europe and the former Soviet Union during the last decade, have favoured the expansion of intercontinental trade between the EU and the CEEC/CIS. This has also increased the necessity for the creation of a logistic zone in the Black Sea, which will facilitate the efficient connection of the European and the Asian trade flows. International businesses have already expressed their interest for investments in the area, which is considered as highly attractive and favourable for development.

Nevertheless, the coherence of regional maritime systems needs to be further facilitated by upgrading existing infrastructure, introducing new technologies and applying a common code of practice. In the light of this, at the Meeting of The BSEC Working Group (1995, October 18-19th, Anapa-Russia), the following were decided:

- To investigate the possibilities of a further expansion of Ro/Ro systems operating between the Bulgarian ports of Varna and Burgas and the Port of Poti in Georgia, and between the port of Constantza in Romania and Istambul in Turkey. Also to identify the merits of a rail-ferry connection between Constantza (Romania) and Samsun (Turkey) which very soon will be open to traffic;
- To integrate the navigable route Moscow-Rostov/Don-Novorosiisk to corridor IX;
- To create and develop container terminals;
- To upgrade the road and rail connections to the major ports;

The above developments are expected to play an important role in the promotion of shortsea shipping in the Black Sea basin. They are also expected to contribute towards reducing the gap with their Mediterranean competitors and in so doing, to attract more traffic and achieve higher utilisation rates for the available infrastructure. More detailed discussion on the possible interaction of the various development initiatives in the Black Sea can be found in the Greek country report in the Appendix.

Part II

Main Routes & Corridor Development Alternatives

The objective of this part of the report is to take into account the information outlined in part I and, on this basis, syntesise the country specific data given in the Appendix with a view of identifying the relevant Corridor Development Alternatives at a strategic Mediterranean level.

1. Main routes

Within the policy and economic environment presented above, important trade routes have been developed over the years, linking major trade centres in the Mediterranean and the Black Sea vicinity. From a particular point of view, these trade routes could be seen as “the least resistant paths” with cost and legislative constraints being the main impedance.

In order to apply the CODE-TEN methodology in the Mediterranean shortsea case study, there should first be a conceptual “bridge” linking the notions of “trade route” (commonly used in shipping) and “corridor” (the backbone of the proposed assessment methodology).

An important concept in shortsea shipping that could become such a bridge is what is known as the “main routes”. Each main route is defined not as a prescribed sequence of port visits, but rather as a set of geographical clusters that are internally linked by a network of ship lines.

Thus, a “main route” (or maritime corridor) can be thought as the equivalent of an inland corridor, with its characteristics depending on the geopolitical status of the connected regions, the different administrative and legislative frameworks, the market environment and other factors defining its operating context.

For the scope and the strategic focus of CODE-TEN, these main routes were identified with the trade routes of strategic importance. The main routes, serving especially freight flows, in the Mediterranean and the Black Sea (fig. 3), are:

- the Gibraltar-Suez,
- the Gibraltar-Black Sea,
- the Black Sea-Suez and
- the Adriatic-Suez axis

Of the above, the most important is the Gibraltar-Black Sea axis. This main route plays an important role in the planning for the expansion of EU towards the CEEC/CIS linking major ports of the south of Europe with the Black Sea. The following tables provide the evidence on which this route is considered of strategic importance i.e. a selection of shipping lines and operators for the sailing areas of the east Mediterranean and the Black Sea.

Figure 3: *The most important main routes in the Mediterranean*

***Table 4**: Europe - Eastern Mediterranean/Black Sea Trades*

Line (end-to-end carriers)	Frequency (weekly = w)	Sea ports served in the eastern Mediterranean or Black Sea
Access	W	Piraeus, Turkey, Egypt, Libye, Tunis, Algeria, Adriatic Sea
Andrew Weir Shipping	W	Ashod, Haifa, Limassol, Malta, Beirut, Istanbul, Izmir, Mersin, Alexandria, Tunis, Tartous, Port Said, Salerno, Palermo, Piraeus
Adamis	W W W	Piraeus, Limassol, Alexandria, Beirut, Israel, Salerno, Leixoes, England Barcelona, Marseille, Genova, Piraeus Istanbul, Izmir, Piraeus
Adriamed	W Monthly Fortnightly	Piraeus, Ravenna, Ancona Piraeus, Mersin, Beirut, Lattakia, Tartus Piraeus, Libye, Tunis, Algeria
Armada Container Lines	W	Istanbul, Izmir, Piraeus
Borchard Lines	W	Alexandria, Beirut, Izmir, Istanbul, Salerno, Ashdod, Haifa, Limassol, Piraeus, Salerno
Balcan	W	Thessaloniki, Malta, Istanbul, Izmir, Mersin, Beirut, Piraeus, Varna, Bourgas, Alexandria, Limassol, Heraklion, Ashdod, Haifa
Cargo Book	W W W	Piraeus, Istanbul, Gemlik Piraeus, Mersin, Limassol, Beirut Piraeus, Alexandria, Port Said
Contaz Line	10 days	Istanbul, Izmir
Constar	W W W	Valencia, Barcelona, Marseille, Genova, Istanbul, Gemlik, Izmir, Piraeus Alexandria, Beirut, Istanbul, Gemlik, Izmir, Mersin, Piraeus Istanbul, Gemlik, Izmir, Valencia, Barcelona, Marseille, Genova, Piraeus
Compagnie Tunesienne	W	Tunis
DSR-Senator Lines	W	Istanbul, Izmir, Alexandria, Port Said, Tartous, Beirut, Mersin, Tunis, Piraeus
Dealmar	Fortnightly Monthly	Piraeus, Odessa, Constanza, Istanbul La Spezia
Denval Marine	W	Koper, Bar, Durres
Deutsche Nah-Ost Linien	W	Istanbul, Izmir, Alexandria, Port Said, Tartous, Maersin, Tunis, Beirut, Piraeus
Eastmed	W W	Limassol, Beirut, Piraeus Limassol, Tartus, Piraeus
Egyptian Navigation Co	Monthly	Koper, Alexandria
Ellastir	W	Piraeus, Limassol, Haifa
Felix Kauki	W	Piraeus, Turkey

	W W	Piraeus, Egypt Piraeus, Spain. Portugal
Gracechurch Container Line	W	Alexandria, Beirut, Izmir, Istanbul, Salerno, Ashdod, Haifa, Piraeus, Malta, Limassol
Iscont Lines Ltd	W	Limassol, Ashdod, Haifa
Kallitsis	W W	Piraeus, Turkey Piraeus, Fos, Barcelona, Valencia, Portugal
K Line	W	Haifa, Ashdod via Haifa
Mediterranean Shipping Co.	W	Alexandria, Beirut, Istanbul, Izmir, Thessaloniki, Salerno, Piraeus, Ashdod, Haifa, Limassol, Black Sea ports via Piraeus
Medcargo	W	Piraeus, Alexandria, Port Said
Medtrans	W	Pireus, Izmir, Istanbul, Mersin, Beirut, Alexandria, Tunis, la Spezia, Barcelona, Marseille, Valencia
Metz Container Lines Ltd	W	Tunis, Beirut, Tartous, Alexandria, Mersin, Salerno
MFL Limassol	20 days	Koper, Ravenna, Gioia Tauro, Malta, Piraeus, Lattakia, Tartous, Beirut, Mersin
MISR Shipping Co	Monthly	Alexandria
Morline	10 days	Mersin, Izmir, Salerno, Heraklion, Piraeus
MXI Genova	W	Koper, Ravenna, Gioia Tauro, Malta, Piraeus, Lattakia, Tartus, Beirut, Mersin
Navrom	W	Thessaloniki, Istanbul, Izmir, Alexandria, Piraeus, Constantza
Neptune	W	Piraeus, Barcelona
Norasia Line	W	Izmir, Alexandria, Port Said, Istanbul, Mersin, Limassol, Beirut, Gemlik, Lattakia, Thessaloniki via Piraeus
Poilas	W	Piraeus, Limassol, Haifa
Polish Ocean Line	10 days	Alexandria, Beirut, Tartous
Samatour Shipping Co	W	Beirut, Tartous
Sarlis-Aggelopoulos	W W	Piraeus, Egypt Piraeus, Kastilli, Valencia, Barcelona
Sea Transport	W	Piraeus, Turkey, Black Sea
Servizzi Marittimi Venezia	W	Koper, Ravenna, Piraeus, mersin, Limassol, Beirut, Lattakia, Tartus
Sloman Neptun Mediterranean Services	Fortnightly	Tunis
Swedish Orient Line	10 days	Alexandria, Mersin, Piraeus, Ashdod, Haifa, Limassol
Tarros International SpA	W	Tunis, LaSpezia, Izmir
Turkish Container Lines	W	Istanbul, Izmir, Mersin
UBS Liner Services	W	Tunis, Beirut, Mersin, Istanbul, Izmir, Piraeus, Alexandria, Tartous, Port Said
Valfracht Maritime	W	Tunis, Beirut, Mersin, Malta, Piraeus, Lattakia, Limassol
Van Uden Levant Line	Fortnightly	Mersin, Istanbul, Alexandria, Beirut, Tartous, Malta, Limassol, Piraeus, Lattakia
Vista	W	Piraeus, Napoli, Livorno, Cadiz
Yangming	W	Haifa
Zim Israel Navigation	W	Alexandria, Thessaloniki, Malta, Istanbul, Izmir, Piraeus, Ashdod, Haifa, Salerno, Constantza, Odessa, Limassol, Palermo

***Table 5**: Europe - Eastern Mediterranean/Black Sea Trades - A selection of hub & spoke carriers*

Line (hub & spoke carriers)	**Frequency (weekly =w)**	**Sea ports served in the eastern Mediterranean or Black Sea**
Blue Container line (Koper via Piraeus)	W	Thessaloniki, Constanza, Odessa
CMB Transport NV	W	all markets via Gioia Tauro
Croatia line Koper via Gioia Tauro	W W	Istanbul, Izmir, Mersin Haifa, Ashod, Port Said, Beirut, Alexandria
Compagnie Maritime d´Affretement	W	all markets via Damietta
Contship Container Lines	W	all markets via Gioia Tauro
Evergreen Line	W	all markets via Gioia Tauro
Hanjin Shipping Co	W	all markets via Malta
Hapag Lloyd	W	all markets via Malta
Hyundai Merchant Marine	W	all markets via Malta
Maersk Line	W	Piraeus, Izmir, Thessaloniki, Mersin, Beirut, Alexandria, Varna via Gioia Tauro/Algeciras
Montana Lines (Koper via Gioia Tauro)	15 days	Mersin, Beirut
Lloyd Triestino di Navigazione	Fortnightly	all markets via Gioia Tauro
NYK Line	W	all markets via Malta
P&O Nedlloyd	W	all markets via Gioia Tauro
UDP Izmail/DSMS Vienna (Koper via Gioia Tauro)	15 days	Alexandria, Beirut, Lattakia, Piraeus
Sea-Land	W	Piraeus, Izmir, Thessaloniki, other markets via Gioia Tauro

2. Corridor Development Alternatives (CDA)

In elaborating the CDAs for the shortsea shipping example, attention has to be given to the following:

- shortsea shipping development involves major infrastructure upgrading and introduction of new policy initiatives, especially in the area of port deregulation and privatisation.
- development alternatives can only mark minor changes in the Mediterranean shortsea shipping arena.
- the construction/upgrading of port infrastructure and/or the introduction of certain policy measures can be subject to constraints that are independent of the shortsea framework (e.g. road-rail networks).

In order to finalise the identification of the CDAs it was necessary to synthesise the information provided by the case study team members. In particular:

- the CDA templates
- the relevant actors in each country
- the expert interviews

In the light of this information the following can be summarised for each country:

2.1. Greece

The weights of the policy objectives used in the Greek case were the following:

Policy Weights:

Goals	**Countries**
	GR
1. Apply environmental legislation (standards)	1
2. Pricing schemes for internal costs	1
3. Pricing schemes for external costs	0
4. Promoting intermodality	1
5. Promoting interoperability	0
6. Accessibility	3
7. Regional development	3
8. Increase cross-border traffic	3
9. Restrict local road traffic	1
10. Reduce accidents	3
11. Liberalisation	2
12. Deregulation	1
13. Infrastructure investment	3
Fits ...	TPS A TPS B

There is emphasis on the promotion of accessibility and regional development and less emphasis on interoperability and the application of environmental legislation.

The above policy weights describe the general Greek position to transport policy, which does not necessarily correspond to the regional transport policies.

The score of the “suitability” of the main Greek projects along the Gibraltar-Black Sea main route (against the above policy goals), is given below:

Suitability Test

Project	Scores on Policy areas (weighted)													
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**Total score**
P_A	+5	+5	0	+5	0	+15	+15	+15	-5	0	0	0	+15	*3,2*
F_V	+5	+5	0	+5	0	+15	+15	+15	-5	0	+10	+5	+15	*3,8*
COR	*1.0*	*1.0*	*0.0*	*1.0*	*0.0*	*1.0*	*1.0*	*1.0*	*-1.0*	*0.0*	*0.5*	*0.5*	*1.0*	

Note: Total project score is calculated by adding the individual weighted scores and dividing by the sum of the weights. Maximum + 5.
Total corridor scores (COR) are calculated by dividing the sum of the weighted scores against possible maximum weighted score on that policy goal. Maximum 1.

List of projects:
P_A – The new Port of Alexandroupolis
F_V – Construction of the International Freight Village in Chios

The last column shows the weighted scores of each Greek project along the Gibraltar-Black Sea main route. Both projects display a good score with the International Freight Village of Chios scoring higher than the port of Alexandroupolis. In most policy areas they score almost the same exempt policy objectives 11 (liberalisation) and 12 (deregulation).

In terms of liberalisation, the port of Alexandroupolis scores lower than Chios because it is controlled by the public state and the law putting forward the privatisation of Greek ports has not yet been finalised. The same does not hold for the Freight Village of Chios which has been initiated by a non-governmental institute, aiming to attract private investments.

As concerns deregulation, the port of Alexandroupolis is subject to restrictions derived from the fact that is owned by the state. This does not apply for the Chios Freight Village where the market mechanism is the determining factor, playing the most important role.

Adaptability Test

Policy monitoring for the "adaptability" test was done as follows:

Projects	**Phase of implementation**					
	Conceptual	**Planning**	**Decision**	**Implementation**	**Expected time of realization**	**Combined information**
P_A				√	Year 2005	Suitable & feasible
F_V	√				-	Suitable & feasible

Projects	**Typology of Conflicts and Barriers**									
	SECA		**ENV**		**REGIO**		**TECH**		**FIN**	
	C	B	C	B	C	B	C	B	C	B
P_A						√				√
F_V		√		√		√		√		√

A detailed discussion of the nature of conflicts and barriers are presented in the Greek country report in the Appendix.

2.2. Bulgaria

The weights of the policy objectives used in the Bulgarian case were the following:

Policy Weights:

Goals	**Countries**
	BU
1. Apply environmental legislation (standards)	1
2. Pricing schemes for internal costs	1
3. Pricing schemes for external costs	1
4. Promoting intermodality	1
5. Promoting interoperability	1
6. Accessibility	1
7. Regional development	1
8. Increase cross-border traffic	3
9. Restrict local road traffic	1
10. Reduce accidents	3
11. Liberalisation	3
12. Deregulation	3

The score of the "suitability" of the main Bulgarian projects on the Black Sea (against the above policy goals), is given below:

Suitability Test

Scores on Policy Areas (weighted)													
Project	**1**	**2**	**3**	4	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total Score**
	1	1	1	1	1	1	1	3	1	3	3	3	
BURG_CONT1	+5	0	0	+5	+5	+5	+5	+5	0	0	0	0	*1,5*
BURG_CONT2	+5	0	0	+5	+5	+5	+5	+5	0	0	0	0	*1,5*
BURG_CONT3	+5	0	0	+5	+5	+5	+5	+5	0	0	0	0	*1,5*
BURG_CONT4	+5	0	0	+5	+5	+5	+5	+5	0	0	0	0	*1,5*
VARN_WEST	+5	0	0	+5	+5	+5	+5	+5	0	0	0	0	*1,5*
VARN_EST	+5	0	0	+5	+5	+5	+5	+5	0	0	0	0	*1,5*
VARN_LAC	+5	0	0	+5	+5	+5	+5	0	0	0	0	0	*1,25*
COR	1	0	0	1	1	1	1	0,857	0	0	0	0	*10,25*

The last column shows the weighted scores of each Bulgarian project on the Black Sea. All projects display a moderate score.

All the proposed projects score almost the same, except the Container Terminal at Varna lake. This, which is rather a long term project, it is still covered with uncertainties and it is not yet entirely clear whether it will meet all the objectives to an acceptable degree.

Adaptability Test

Policy monitoring for the "adaptability" test was done as follows:

Project	Typology of Conflicts and Barriers									
	SECA		ENV		REGIO		TECH		FIN	
	C	B	C	B	C	B	C	B	C	B
BURG_CONT1	0	0	0	0	0	0	0	0	0	0
BURG_CONT2	0	0	0	0	0	0	0	0	0	0
BURG_CONT3	0	0	0	0	0	0	0	0	0	0
BURG_CONT4	0	0	0	0	0	0	0	0	0	0
VARN_WEST	0	0	0	0	0	0	0	0	0	0
VARN_EST	0	0	0	0	0	0	0	0	0	1
VARN_LAC	0	0	0	0	0	0	0	0	0	1
COR	0	0	0	0	0	0	0	0	0	2

0: No, 1:Yes

A detailed discussion of the nature of conflicts and barriers are presented in the Bulgarian country report in the Appendix.

2.3. Romania

The weights of the policy objectives used in the Romanian case were the following:

Policy Weights:

Goals	Countries
	RO
1. Apply environmental legislation (standards)	1
2. Pricing schemes for internal costs	1
3. Pricing schemes for external costs	1
4. Promoting intermodality	1
5. Promoting interoperability	2
6. Accessibility	1
7. Regional development	1
8. Increase cross-border traffic	3
9. Restrict local road traffic	1
10. Reduce accidents	3
11. Liberalisation	3
12. Deregulation	3

The score of the "suitability" of the main Romanian projects on the Black Sea (against the above policy goals), is given below:

Suitability Test

Scores on Policy Areas (weighted)													
Goals	1	2	3	4	5	6	7	8	9	10	11	12	Total Score
National scores on Goals	1	1	1	1	2	1	1	3	1	3	3	3	
Project													
Ro_CB	0	0	0	5	10	5	5	15	-5	0	0	0	***1,7***
Ro_CFT	0	5	5	5	0	5	5	15	0	0	15	15	***3,3***
Ro_NM	0	0	0	0	10	5	0	15	0	15	0	0	***2,1***
Ro_PF	5	5	5	5	10	0	0	0	-5	0	0	0	***1,2***
Ro_GT	0	0	0	5	10	5	5	15	-5	0	0	0	***1,7***
Ro_PT	0	0	0	5	10	5	5	15	-5	0	0	0	***1,7***
Ro_CT	0	0	0	5	10	5	5	15	-5	0	0	0	***1,7***
Ro_LPG	5	0	0	0	0	0	5	15	-5	-15	0	0	***0,2***
COR	*0,3*	*0,3*	*0,3*	*0,8*	*0,8*	*0,8*	*0,8*	*0,9*	*-0,8*	*0,0*	*0,1*	*0,1*	*0,3*

The last column shows the weighted scores of each Romanian project on the Black Sea. All projects display a moderate score, exempt the second (Modernization of Constantza Free Trade Area) and the third (Completion of the works for the North Breakwater of Constantza South Port) projects that have a higher score. The Ro_LPG project (Construction of a liquefied petroleum gas terminal in Constantza South Port) has a relativelly low score.

Adaptability Test

Policy monitoring for the “adaptability” test was done as follows:

ROMANIA - SSS			
Project		**Year**	**Stage**
Ro_CB	Modernization of container terminal in Braila Port	2001	I
Ro_CFT	Modernization of Constantza Free Trade Area	2000	I
Ro_NM	Completion of the works for the North Breakwater of Constantza South Port	1999	I
Ro_PF	Construction of new port facilities on Constantza Port	2005	I
Ro_GT	Construction of a new grain terminal in Constantza South	2001	D
Ro_PT	Construction of a passenger terminal in Constantza Port	2001	D
Ro_CT	Construction of a new container terminal in Constantza South Port	2002	I
Ro_LPG	Construction of a liquefied petroleum gas terminal in Constantza South Port	2001	I

I: Planning, D: Decided

Projects	**Typology of Conflicts and Barriers**									
	SECA		**ENV**		**REGIO**		**TECH**		**FIN**	
	C	**B**	**C**	**B**	**C**	**B**	**C**	**B**	**C**	**B**
Ro_CB	*0*	*0*	*1*	*0*	*1*	*0*	*0*	*0*	*0*	*1*
Ro_CFT	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1*	*0*
Ro_NM	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*0*
Ro_PF	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*
Ro_GT	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ro_PT	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*
Ro_CT	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ro_LPG	*1*	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*1*	*0*

A detailed discussion of the nature of conflicts and barriers are presented in the Romanian country report in the Appendix.

2.4. Portugal

Because of the geographical location of Portugal (on the Atlantic coast of Europe) and due to the extend and nature of most of the development plans for the country’s ports, no significant changes are expected that might influence the Mediterranean maritime traffic patterns. If one also considers the role that the Spanish mother-ports play in the area, it becomes even more difficult for the Portuguese ports to attract traffic from the Mediterranean. Since there is no substantial effect on the maritime corridor in question (Gibraltar-Black Sea), and due to the fact that the Portuguese ports’ development plans are rather small, the Portuguese team did not perform the suitability and adaptability tests.

2.5. France

The weights of the policy objectives used in the French case were the following:

Policy Weights:

Goals	Countries
	FR
13. Apply environmental legislation (standards)	3
14. Pricing schemes for internal costs	2
15. Pricing schemes for external costs	1
16. Promoting intermodality	2
17. Promoting interoperability	1
18. Accessibility	3
19. Regional development	3
20. Increase cross-border traffic	2
21. Restrict local road traffic	1
22. Reduce accidents	2
23. Liberalisation	1
24. Deregulation	1
25. Infrastructure investment	2

The score of the "suitability" of the main French projects on the Gibraltar-Black Sea corridor (against the above policy goals), is given below:

Suitability Test

Scores on Policy Areas (weighted)													
Projects	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***	***11***	***12***	***Total Score***
	3	*2*	*1*	*2*	*1*	*3*	*3*	*2*	*1*	*2*	*1*	*1*	***22***
PMA1	*0*	*0*	*0*	*+10*	*+5*	*+15*	*+15*	*+10*	*0*	*+10*	*0*	*0*	***+2,95***
PMA2	*0*	*0*	*0*	*+10*	*+5*	*+15*	*+15*	*+10*	*0*	*+10*	*0*	*0*	***+2,95***
COR	***0,00***	***0,00***	***0,00***	***1,00***	***1,00***	***1,00***	***1,00***	***1,00***	***0,00***	***1,00***	***0,00***	***0,00***	***+0,50***

The last column shows the weighted scores of each French project on the Gibraltar-Black Sea corridor. All projects display a relatively high score.

Both projects are planned and meet the goal of applying environmental legislation, promoting intermodality and interoperability, increasing accessibility and cross border traffic, promoting regional development and increasing safety.

Adaptability Test

Policy monitoring for the "adaptability" test was done as follows:

Projects		**Year**	**Status**
PMA1	*Modernisation of Port of Marseille-East - Mediterranean vocation*	*2010*	*D*
PMA2	*Modernisation of Port of Marseille-West - International vocation*	*2010*	*D*

D: Decided

Projects	**SECA**		**ENV**		**REGIO**		**TECH**		**FIN**		**Project overall scores**	
	C	*B*	*C*	*B*	*C*	*B*	*C*	*B*	*C*	*B*	*C*	*B*
PMA1		*1*								*1*	***0***	***2***
PMA2		*1*								*1*	***0***	***2***
TOTAL:	***0***	***2***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***2***	***0***	***4***

0:No, 1:Yes

A detailed discussion of the nature of conflicts and barriers are presented in the French country report in the Appendix.

2.6. Italy

The weights of the policy objectives used in the Italian case were the following:

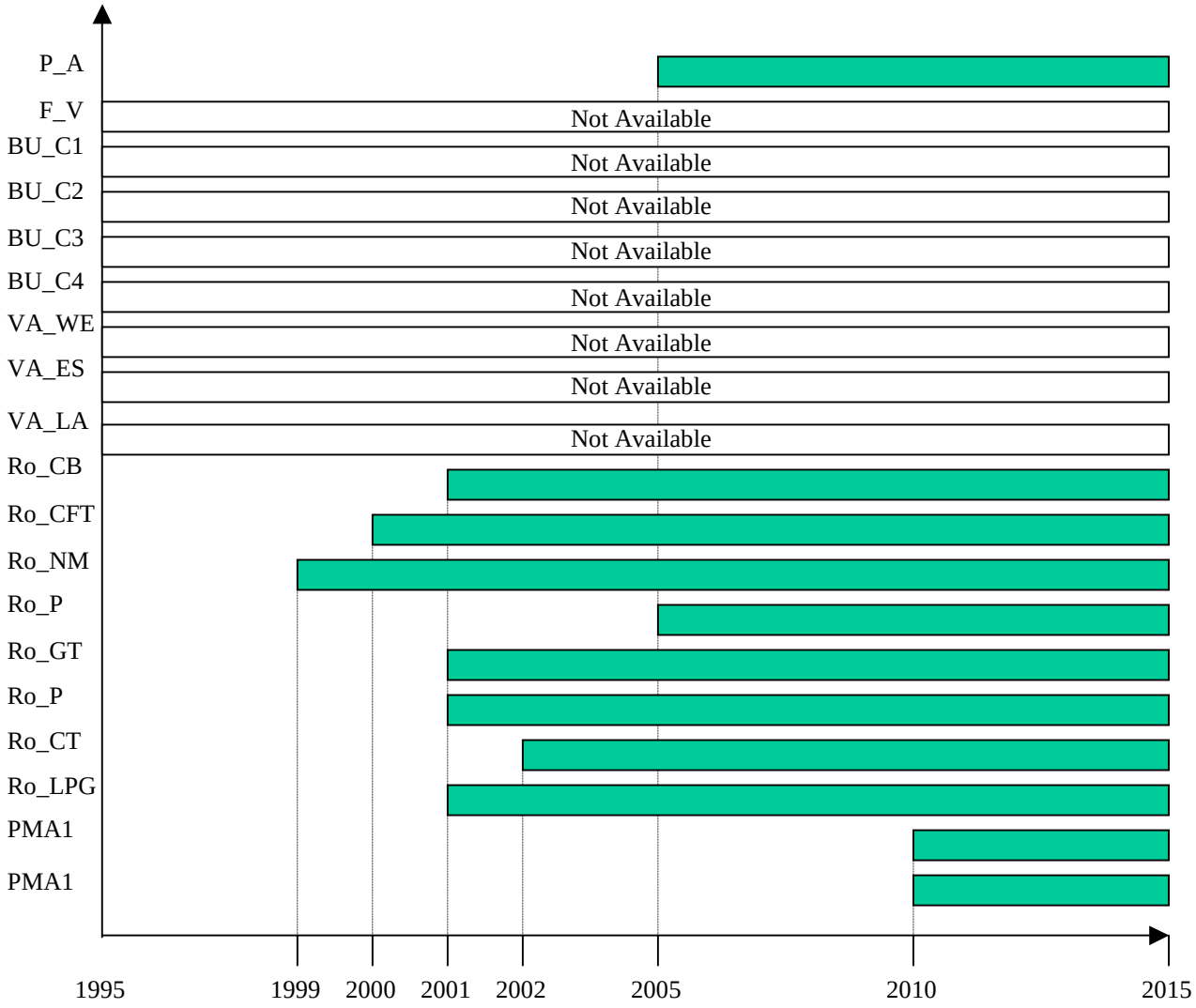
Policy Weights:

Goals	**Countries**
	IT
26. Apply environmental legislation (standards)	2
27. Pricing schemes for internal costs	3
28. Pricing schemes for external costs	0
29. Promoting intermodality	2
30. Promoting interoperability	1
31. Accessibility	1
32. Regional development	3
33. Increase cross-border traffic	3
34. Restrict local road traffic	1
35. Reduce accidents	2
36. Liberalisation	0/3
37. Deregulation	0/3
38. Infrastructure investment	3

Although some Italian ports may continue to apply for public investment to become more competitive, it is hard to consider capacity expansion a sensible policy nowadays in Italy. Competitive operation and/or commercialisation skills are by far more important for a port to attract traffic. Thus, as discussed in detail in the Italian county report (see appendix), no major

port restructuring neither improvement of their inland connections are planned for the future and therefore, no suitability and adaptability tests were conducted for this case study.

2.7. Time horizon for the implementation of the main projects



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