

Transport Economies in the Euro-Mediterranean Region (Study on Key Indicators of Arab Regional Transport Integration in the Euro-Mediterranean Area)

Hamri Noudjoud¹, Selmi Nassira²

Abstract

In the global economy, economic opportunities and the economic success of any country or region are linked to the quality of transport infrastructure, which enables the safe and efficient movement of people and goods. Transport economies are therefore essential for the development and sustainability of international trade. This study confirms that regional integration of transport systems in the Euro-Mediterranean region relies on integrating interoperability and logistics concepts at the project design stage, benefiting all partners. The study concludes that geographic proximity will only be meaningful if the maritime routes of Southeast Mediterranean countries are integrated with the European interface, and sustainable transport integration in the Euro-Mediterranean region will not be achieved unless these countries are actively involved in an efficient regional transport network supported and financed by Europe.

Keywords: *Transport industry, regional integration, transport economies, Euro-Mediterranean region, sustainable transport systems.*

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Introduction

Transportation is widely recognized as one of the most pivotal sectors within national economies, given its role in enabling the movement of passengers and goods both domestically and internationally. It forms the lifeblood of the supply chain and constitutes its most essential component. The selection of an appropriate mode of transport ensures the seamless flow of delivery operations and the timely arrival of consignments at their designated destinations. Today, transportation has evolved into a self-standing industry that serves as a fundamental pillar supporting national development agendas, owing to its substantial role and effective contribution to gross domestic product (GDP). In many industrialized economies, this sector accounts for nearly one-fifth of total GDP. For instance, the transport sector constitutes 17% of GDP in the United States, 17.8% in Germany, and 25% in France.

While various international transport corridors exist, maritime transport remains the backbone of global trade and economic development, with approximately 80% of world merchandise transported by sea. Consequently, maritime transport is of critical importance to all nations—particularly those of the Euro-Mediterranean region—due to its essential function in facilitating mobility, international trade, and regional integration. Today, the economic development of countries in the southern and eastern Mediterranean increasingly depends on the expansion and enhancement of transport infrastructure, both within the Mediterranean partner states and between these states, the region, and the European Union.

The Euro-Mediterranean region's proximity to major global markets, coupled with sustained population growth and ongoing economic expansion, underscores the crucial importance of modern, well-planned transport infrastructure for the region's future. Such infrastructure enhances the competitiveness of Mediterranean partner countries within the global trading system. Furthermore, efficient transport infrastructure has far-reaching social, economic, and environmental implications. Enhanced mobility acts as a catalyst for job creation across various sectors of the real economy by attracting investment into the region. Simultaneously, regionally coordinated transport infrastructure increases market accessibility for goods and people while strengthening social cohesion. Additionally, the development of sustainable

¹ Faculty of Economic Commercial and Management Sciences, department of commercial sciences, University of Mohamed Boudiaf, M'sila, Algeria. Email: hamri.noudjoud@gmail.com

² Faculty of Economic, Commercial and Management Sciences, department of commercial sciences, University of Mohamed Boudiaf, M'sila, Algeria. Email: nacira.salmi@univ-msila.dz

transport infrastructure plays a major role in mitigating the effects of climate change. The transport sector—both domestically and internationally—is responsible for approximately 20% of global greenhouse gas emissions, a figure that may rise to 60% by 2050. For this reason, the World Bank seeks to guide the sector toward greater environmental sustainability by strengthening transport system resilience, improving infrastructure and service efficiency, and reducing unnecessary freight flows.

Accordingly, the central research question underpinning this study can be formulated as follows: **What efforts are being undertaken within the Euro-Mediterranean region to advance comprehensive regional integration of transport systems within the global trading framework?**

The study rests on the fundamental hypothesis that comprehensive regional integration of transport systems in the Euro-Mediterranean region can be achieved through further reforms and the development of unified national strategies that encompass all regulatory and financial measures, including those pertaining to the southern Mediterranean countries.

Significance of the Study

The significance of this research derives from the pivotal role of transportation as a principal driver of globalization, which refers to the increasing interconnectedness and interdependence of countries through the exchange of goods and services. This is particularly relevant for the Euro-Mediterranean region, where economic integration within the transport sector constitutes one of the key strategic options for enhancing transport systems and logistics services for partners on both shores.

Objectives of the Study

This research aims to underscore the fact that transport infrastructure connectivity occupies a prominent position on the policy agenda of the Union for the Mediterranean, which has long acknowledged the necessity of enhancing regional integration by improving transport infrastructure linkages, thereby ensuring that all member countries of the Union benefit from economic integration.

Methodology of the Study

The study adopts the descriptive–analytical method, as it is the most suitable approach for examining the guiding map of the Mediterranean transport network, integrating international standards of technical and administrative interoperability into projects, and focusing on performance indicators and their outcomes, particularly in the countries of the South-East Mediterranean. The study is divided into three main sections:

Section One: The economics of international transport and its role in global trade (a historical and contemporary perspective).

Section Two: International transport and logistics services in the Euro-Mediterranean region.

Section Three: Integrative impacts of transport systems in the Euro-Mediterranean region.

Section One: The Economics of International Transport and Its Role in Global Trade (A Past–Present Perspective)

International transport is considered the backbone of global trade and one of its principal pillars. Its importance emerged as early as the era of Mercantilism, continued through the Industrial Revolution with the application of trade principles and the international division of labor in the nineteenth century, and extended into the mid-twentieth century with the advent of air transport, reaching the third millennium with the era of globalization and the growing movement of international tourism and trade in goods and services.

The Concept of International Transport

The Essence of the Transport Process

In literature related to transport, it is difficult to find a single, precise definition of the process. For a clearer understanding of the concept of transport, several definitions have been proposed, including:

1. The *Dictionary of Logistics Terminology* describes transport as “a set of procedures associated with the movement of persons and physical goods using appropriate means.”ⁱ
2. Transport (from the Latin *transportare* — to carry, to move) refers to the movement of persons and goods through space using suitable modes of transportationⁱⁱ.
3. Transport, as an extension of communication, is a field of economic activity that increases the utility of goods by moving them through spaceⁱⁱⁱ.
4. According to Kepling, “transport is civilization”, making it one of the most significant characteristics of developed societies^{iv}.
5. Aldous Huxley described the function of transport as “one of the noblest functions of humankind.”^v
6. Transport is the mechanism through which markets can expand and previously unused human and material resources can be exploited, enabling increased production and improved quality by moving goods from areas of lower demand to those of higher demand.

Based on the definitions above, transport from an economic perspective refers to the provision of chargeable services, the outcome of which is typically the movement of people and goods from one place to another, whether within the borders of a single country or across national boundaries.

International Transport

International transport is the mechanism that enables the global exchange of products. In practical terms, it encompasses all forms of importing and exporting goods from one country to another. Similar to domestic transport, international transport constitutes a core component of the supply chain system and is partially managed by logistics service providers, who ensure the quality of goods being delivered and their arrival at the intended destination.

The Concept of the Transport Industry

The term *transport industry* does not imply the production of any tangible good; rather, it refers to the provision of a service. A review of the history of international trade and the transport industry clearly reveals the strong interdependence between the two, as no movement of exports or imports of goods can occur without international transport. Although transport is a service with no physical form and cannot be stored, it possesses distinctive characteristics that make it tradable in the same way that goods are bought and sold. These characteristics include:^{vi}

1. **Movement:** The transfer of the service itself, which ensures speed, repeatability, and reliability.
2. **Mode of Transport:** The mode used affects how the shipment is prepared, its size, and the costs of loading and unloading.
3. **Asset Utilization:** The owner of the transport asset seeks to keep it in continuous operation in order to generate revenue.

4. **Transport Service Costs:** These are borne by the beneficiary and may include packaging, refrigeration, storage, and damage-related costs.
5. **Productive Activity:** Transport is a productive activity in the economic sense, as it creates added economic value by moving goods, merchandise, and persons from one place to another—thereby generating *spatial utility*. This added value represents the difference between what the importer pays and the costs incurred by the exporter, taking into consideration:
 - the amount of value added to the good or service as it moves along the transport chain;
 - the burden of costs borne by the producer of the good or service at each stage of the transport process.

The Role of the Transport Industry in Global Trade

The transport industry can rightly be described as the *heart of globalization*. Indeed, the concept of globalization would lose much of its meaning without the ability to move goods and people across the world. The continuous expansion of global trade depends on the efficiency of transport infrastructure and the growing use of multimodal transport, which involves two or more modes of transportation (land, air, sea, or rail). Engagement in international trade and investment is contingent upon the recent reforms to the rules governing global trade, which aim to level the playing field and ensure that goods can be delivered from factories or warehouses in the country of origin to markets around the world without undue delays and at reasonable cost^{vii}.

According to UNCTAD, the volume of global trade reached approximately USD 31 trillion in 2023. This development is largely attributable to the revolution in the transport industry, which has played a pivotal role in connecting countries, firms, and individuals, and in enabling the smooth movement of goods and services across locations. Historically, the high cost of transporting bulk commodities over long distances meant that economic production was only efficient near major natural resource sites. Among the key factors that helped break these constraints was the transformation of the transport industry, which progressed through three fundamental stages:^{viii}

First Stage

The first major transformation occurred between the sixteenth and eighteenth centuries with significant improvements in the design and efficiency of sailing ships. Although transoceanic transport remained expensive at that time—except for goods such as coffee, cocoa, spices, and precious metals—maritime transport gradually connected the coastal regions of North and South America, Africa, and Asia with Europe, leading to the emergence of a *global economy* for the first time.

Second Stage

The second transformation took place in the mid-nineteenth century with the introduction of steam power to land and maritime transport. This development revolutionized the economics of transporting low-value goods cheaply over long distances. It greatly expanded incentives for foreign trade, exploration, and investment, and substantially widened the scope of industrial expansion. As a result, transatlantic transport costs fell by nearly 60% between the 1870s and the early twentieth century.

Third Stage

A further revolution in transport technology occurred after the 1950s with the dramatic increase in the average size of commercial vessels. The closure of the Suez Canal in 1956–1957 (and again in 1965) played a crucial role in triggering this transformation, as the shipping industry decided to invest in massive, specialized bulk carriers and in the port facilities necessary to accommodate these new vessels. The average deadweight tonnage of oil tankers 16,000 DWT in the early 1950s—exceeded 100,000 DWT by the 1990s,

while today's *ultra-large crude carriers* surpass 500,000 DWT and are capable of transporting more than three million barrels of oil.

In general, every 35 to 50 years, a new development emerges within the transport industry that propels economic growth forward. All these transformations have significantly contributed to the expansion and evolution of global trade volumes. This trend can be illustrated in the following table:

Table 1: Global Exports and Imports of Goods and the Share of Transport Services (Trillion USD)

Years	2023	2020	2018	2015	2012	2009	2008	2005	2003	2000
Exports of Goods	23.90	74.17	19.65	16.64	18.60	12.66	15.85	10.58	7.63	6.49
Share of Transport Services in Total Services Exports	17	17	17	18	20	19	23	22	21	21
Imports of Goods %	22.95	17	19.01	15.96	17.84	11.98	15.59	10.16	7.30	6.27
Share of Transport Services in Total Services Imports %	21	20	21	21	25	23	26	26	25	26

Source: Author's calculations based on IMF data, *Balance of Payments Statistics Yearbook*, and *Data Files 2023*.

The table above shows an increase in the value of global exports and imports during the period 2000–2008, followed by a decline in 2009 due to the global financial crisis, which dampened global demand and led to a decrease in the share of transport services in total services exports and imports. Transport services include all modes of transport—maritime, air, land, inland waterways, space, and pipeline—provided by residents of one economy to residents of another. These services encompass passenger transport, freight movements, chartering of carriers with crews, and related support and auxiliary services.

However, global exports and imports quickly recovered from the crisis and resumed their upward trajectory until 2020, when the world economy faced the most disruptive crisis in modern history: the COVID-19 pandemic. The pandemic caused unprecedented disruptions globally, summarized as follows:

- **Market risks:** Demand collapsed for certain products and services.
- **Operational risks:** Supply chains were disrupted, hindering production and investment.
- **Financial risks:** Borrowing costs rose for several industries, and many customers defaulted on payments.

In 2020, foreign direct investment in greenfield projects related to the Sustainable Development Goals (SDGs) in developing countries fell by 33%. International project finance declined by 42%. Every SDG-related investment sector experienced unprecedented reductions compared to pre-pandemic levels: health (–54%), agriculture and food (–49%), transport and infrastructure (–54%), and water and sanitation (–67%), with the exception of telecommunications, which expanded significantly during the pandemic, recording a 27% increase in investment^{ix}.

The Importance of the Transport Industry in Global Trade:

Transport is the largest “invisible industry” in the world. Modern society relies entirely on transportation to sustain its way of life, and it is constantly present in our daily environment. Global trade derives much of its importance from the transport sector as an active and supportive industry. Its significance can be summarized as follows:^x

Facilitating the Movement of Goods

Transport is essential for moving goods across vast distances, whether raw materials are being transported from resource-rich regions to manufacturing centers, or finished products are being shipped to consumer markets.

For example, the global supply chain of the smartphone illustrates this clearly: components are manufactured in different countries such as China, South Korea, and Taiwan, then transported to assembly plants for integration and packaging. Finally, the assembled smartphones are shipped to distribution centers and retail outlets worldwide. This complex process depends heavily on multiple modes of transport including ships, aircraft, trucks, and trains—to ensure the smooth flow of goods along the supply chain.

Enabling International Trade

Transport is a critical enabler of international trade, allowing countries to specialize in the production of goods and services based on their comparative advantages and export them to other nations. For instance, countries with abundant natural resources—such as oil-producing nations in the Middle East and North Africa (e.g., Algeria)—depend on transport infrastructure to export their resources to countries lacking them. Similarly, countries with advanced manufacturing capabilities can transport their products to global markets, thereby expanding their customer base and increasing economic output.

Reducing Trade Barriers

Efficient transport systems help reduce trade barriers by lowering the cost and time associated with moving goods across borders. Improved infrastructure—such as well-maintained roads, modern ports, and efficient customs procedures—can significantly enhance the speed and efficiency of international trade.

Supporting Globalization

Transport is a major driver of globalization, which refers to the increasing interconnectedness and interdependence among countries through the exchange of goods, services, information, and ideas. Globalization has been made possible by advances in transport technologies that allow for faster and more efficient movement of people and goods. This has led to the emergence of global supply chains, multinational corporations, and the expansion of e-commerce platforms. Without reliable transport systems, global economic integration and connectivity would not be possible.

Promoting Cultural Exchange

In addition to its economic importance, transport plays a critical role in promoting cultural exchange and mutual understanding among nations. The movement of people across borders allows for the exchange of ideas, knowledge, and cultural practices, helping to foster mutual respect and appreciation.

Key Concepts in Transport Economics

1) Definition of Transport Economics: ^{xi}

Transport economics is a branch of economics concerned with the allocation of resources within the transport sector and the implications of transport policy. It encompasses the study of various modes of transportation—including road, rail, air, maritime, multimodal, and pipeline transport—while taking into account factors such as cost, demand, infrastructure investment, and the environmental impacts of transport.

Its primary focus is to understand how to optimize the efficiency of moving goods and people while minimizing costs and negative externalities such as pollution and congestion.

2) Importance of Transport Economics

Efficient transport systems enable trade, facilitate labor mobility, and ensure access to essential services, thereby exerting a significant influence on the economic growth of a region and the overall quality of life.

Moreover, transport economics provides insights into how transport systems can be designed and managed to balance user needs with environmental sustainability. It assists policymakers in assessing the cost-effectiveness of infrastructure projects and regulatory interventions, with the aim of creating more efficient, equitable, and sustainable transport landscapes.

Additionally, with rising global concerns about climate change, the role of transport economics in developing strategies to reduce the carbon footprint of the transport sector has become increasingly important, supporting the advancement of cleaner and more sustainable modes of transport.

3) Assessing the Efficiency of a Transport System^{xii}:

Economists evaluate the efficiency of transport systems using a range of metrics, including cost–benefit analysis, productivity indicators, and performance standards. They assess both the direct and indirect costs of different modes of transport relative to the benefits they provide, taking into account factors such as:

- time savings;
- reductions in vehicle operating costs;
- positive environmental impacts;
- analysis of supply and demand dynamics;
- service quality;
- and the degree of competition within the market.

Second Section: International Transport and Logistics in the Euro-Mediterranean Region

The Euro-Mediterranean Partnership (EUROMED):

Europe and the countries of the Mediterranean region share deep historical, geographical, and cultural ties—and, more importantly, common aspirations to build a future grounded in peace, democracy, prosperity, and human, social, and cultural understanding. To achieve these shared goals, the participating partners agreed to pursue peace and cooperation with renewed dynamism, to explore common challenges, and to translate good intentions into concrete actions within a revitalized partnership for progress.

The Mediterranean Basin: Security and Economic Significance: ^{xiii}

The Mediterranean Sea, though quite small on the world map—almost the size of a large lake—functions as a strategic crossroads for three major maritime corridors:

1. **The Strait of Gibraltar**, providing access to the Atlantic Ocean and the Americas.
2. **The Suez Canal**, a major maritime gateway connecting through the Red Sea to Southeast Asia.
3. **The Bosphorus Strait**, leading to the Black Sea and onward to Eastern Europe and Central Asia.

Although the Mediterranean represents barely 1% of global maritime surface area, it handles:

- nearly 40% of global maritime traffic,
- 25% of global container line services,
- 30% of global oil flows, and
- 65% of the European Union's energy inflows.

The region also represents a market of 700 million consumers, accounting for roughly 10% of global GDP, which has been growing at an average annual rate of 4.5%.

Global interest in this small yet highly strategic maritime space is illustrated by the surge in Chinese investment: within a single decade, Chinese investments increased from USD 16.2 billion in 2001 to USD 185 billion in 2020. Despite its limited size, a significant portion of global stability and security is shaped by developments in this basin.

A substantial number of global crises originate in the Mediterranean region, including the threat of ISIS, instability in Libya, the Syrian conflict, tensions in the Eastern Mediterranean, militia activities, and migration crises. As these risks persist, stronger cooperation between Europe and NATO in the Mediterranean is expected to yield significant positive effects on regional stability and in addressing multifaceted security challenges.

In the European strategic mindset, the Mediterranean region holds critical importance based on four main determinants:

1. **Migration**: a large share of North African citizens reside in Europe—approximately 15% of the Maghreb population lives in Europe.
2. **Energy**
3. **Trade and economic relations**
4. **Security and counterterrorism**, as Southern Mediterranean countries are often perceived in European discourse as hotspots for radicalization and security threats.

For this reason, Europe has pursued various forms of partnerships with Southern Mediterranean states to transform the Mediterranean basin into a space of dialogue, exchange, and cooperation—ultimately aiming for peace, stability, and the creation of a Euro-Mediterranean Free Trade Area.

The strategic importance of the region is highlighted further by the establishment of an International Day of the Mediterranean, celebrated annually on 28 November since 2021, to promote a shared Mediterranean identity, embrace cultural diversity, and celebrate cooperation across the Euro-Mediterranean space.

The Euro-Mediterranean Partnership

The Euro-Mediterranean Partnership began in **1995** with the **Barcelona Euro-Mediterranean Conference**, initiated by Spain and organized by the European Union to strengthen relations with Mediterranean countries in North Africa and West Asia. The partnership was built on three main pillars:

1. **Political Objective:**

Establishing a shared area of peace and stability through enhanced political and security dialogue, aimed at fostering lasting stability across the Mediterranean basin.

2. **Economic Objective:**

Creating a zone of shared prosperity through economic and financial partnerships, including the gradual establishment of a Euro-Mediterranean Free Trade Area by 2010.

3. **Cultural Objective:**

Bringing peoples closer by deepening cultural, social, and human relations, encouraging intercultural understanding and civil-society exchange among Mediterranean societies.

The Euro-Mediterranean dialogue launched in Barcelona did not achieve its intended goals due to several factors: ^{xiv}

1. Policymakers in Europe prioritized consolidating the “European Common House,” focusing on integrating former Eastern bloc countries into the EU.
2. Euro-Mediterranean cooperation remained heavily restricted to trade, excluding other vital areas.
3. Deep structural disparities between the northern and southern shores of the Mediterranean persisted.

In pursuit of restoring balance and mutual cooperation between the two shores, the idea of the Union for the Mediterranean (UfM) emerged as a necessary framework for establishing a more equitable and functional partnership.

The Union for the Mediterranean (UfM) : ^{xv}

The Union for the Mediterranean (UfM) was established in 2008 as an international intergovernmental organization bringing together 28 European Union (EU) member states and 15 partner countries from the South and East Mediterranean, namely: Albania, Morocco, Bosnia and Herzegovina, Turkey, Egypt, Jordan, Lebanon, Tunisia, Mauritania, Monaco, Montenegro, Libya, Syria, and Algeria, in addition to the Palestinian National Authority. (Syria’s membership is currently suspended, while Libya holds observer status).

Some of these countries are now EU candidate states, while others have bilateral partnership priorities or action plans through the European Neighbourhood Policy (ENP). The 2015 ENP review emphasized the following:

1. Stability in the neighborhood and a differentiated approach toward partner countries.
2. Enhancing policy ownership by all stakeholders.
3. Availability of the Neighbourhood, Development, and International Cooperation Instrument (2021–2027).
4. Financial support for the European Neighbourhood Policy, with a budget of €19 billion allocated for the neighborhood under the geographic pillar alone.

Since 2012, the European Union and Jordan have jointly presided over the UfM.

International Maritime Transport of Goods

Maritime transport represents the backbone of global trade and economic development, with approximately 80% of goods transported via shipping. Between 1990 and 2022, global maritime trade volume more than doubled.

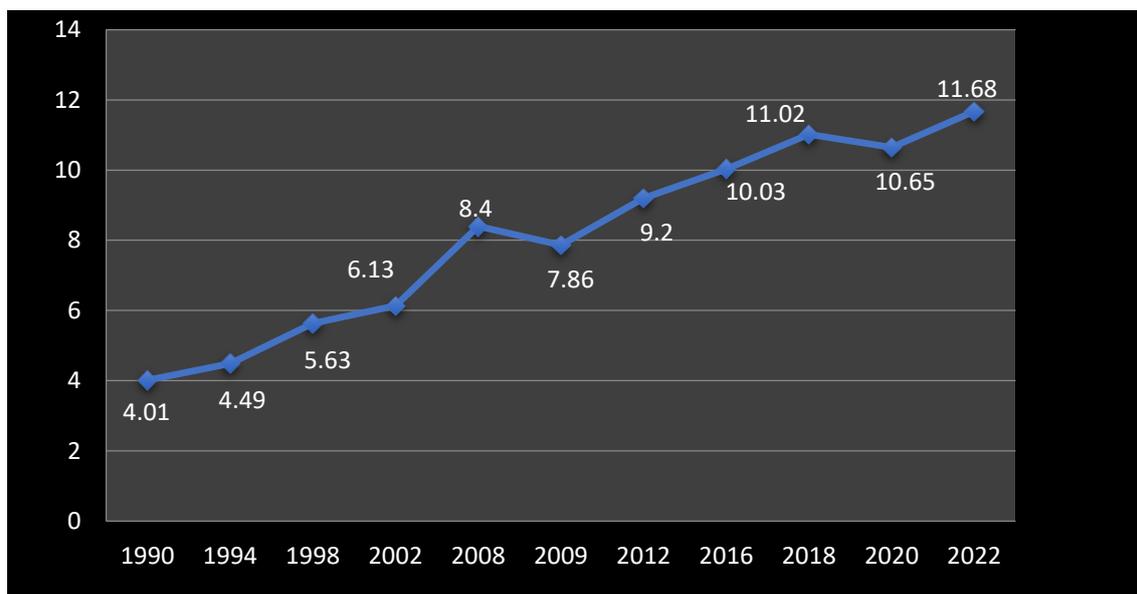
Table 2: Global Maritime Trade Volume, 1990–2022 (Billion Tons)

Year	1990	1994	1998	2002	2006	2008	2009	2012	2016	2018	2022
Maritime Trade Volume	4.01	4.49	5.63	6.13	7.7	8.4	7.86	9.2	10.03	11.02	11.86

Sources: Statista Research Department, Dec 2023; UNCTAD, Trade and Development Report 2022.

The above table and Figure 1 illustrate the development of global maritime trade from 1990 to 2022.

Figure 1: Global Maritime Trade Volume, 1990–2022



Source: Author's calculations based on Table 2

The data show a steady growth in maritime trade volume and shipping demand, albeit moderately, until 2009, when the global financial crisis caused a temporary decline in maritime transport demand. Growth resumed in 2010, reaching 8.4 billion tons, followed by 10.03 billion tons in 2016. In 2020, the Covid-19 pandemic caused a temporary drop to 10.65 billion tons, due to supply chain disruptions, limited supply, and lockdown measures.

By 2022, maritime trade recovered to 11.83 billion tons, indicating that global maritime trade volume nearly tripled between 1990 and 2022. During the same period, the global fleet continued to grow, with an average annual growth of 3.15% in tonnage and 2.47% in the number of ships^{xvi}.

Section Three: Integrated Impacts of Transport Systems in the Euro-Mediterranean Region

Maritime and air transport are considered priority sectors in the Euro-Mediterranean region. Annually, the region handles approximately 720 million tons of international maritime cargo, of which 270 million tons are hydrocarbons. This volume is managed through 45 ports, each with traffic exceeding one million tons per year, distributed as follows: 40% for intra-Mediterranean trade and 60% for trade with the rest of the world. Consequently, the maritime sector accounts for nearly 90% of international shipping trade in the region by volume. Estimates indicate that these flows are expected to double over the next 20 years, while containerized shipments are projected to increase eightfold. Therefore, transport policy in this sector must be comprehensive, covering various aspects: technical and administrative interoperability, management of the entire logistics chain, regulation of supply routes around key ports or hubs, and multimodal connectivity between ports and inland areas.

The air transport sector handles 90% of 100 million international passenger flights in the partner countries of South and East Mediterranean, concentrated across 24 airports, with half of these flights involving EU member states.

Financing Mechanisms for the Transport System in the Euro-Mediterranean Region: FEMIP

On November 10, 2006, the European Investment Bank (EIB) held the first Facility for Euro-Mediterranean Investment and Partnership (FEMIP) conference in Monaco to discuss economic integration in the transport sector of the Euro-Mediterranean region. FEMIP serves as the financial arm of the EIB for the nine Mediterranean partner countries associated with the EU through the Barcelona Process, namely: Algeria, Morocco, Tunisia, Jordan, Lebanon, Syria, the Palestinian Authority, Libya, and Egypt. FEMIP invests €1.4 billion annually to support private sector development, social and economic infrastructure, and regional cooperation projects^{xvii}.

FEMIP is recognized as the leading multilateral financing source in the region, providing partner countries with approximately €4.5 billion in loans between 2000 and 2006, and at least €8.7 billion from 2007 to 2013, nearly doubling the available resources^{xviii}.

Establishing a regionally integrated transport and logistics system requires substantial investment. For example, infrastructure projects identified by partner countries demanded over €20 billion by 2013. Discussions at FEMIP conferences, particularly during the third session in 2015, highlighted a middle-ground approach between fully public and fully private sector models. Implementing mixed-economy or delegated management schemes allows Mediterranean partner countries to adapt their legislative and macroeconomic frameworks to facilitate risk-taking by private investors. Morocco and Turkey have made significant progress in this adaptation.

FEMIP supports this development across all Barcelona Process partner countries, not only by mobilizing substantial financial resources but also by enhancing investment decision efficiency through proper project selection and technical assistance, supported by three local offices in Cairo, Tunis, and Rabat. Given the wide spectrum of needs, FEMIP has set a strategic goal to increase private sector participation in the creation of infrastructure and public services.

Recent Efforts and Developments in Maritime Transport Infrastructure in the Mediterranean

The Mediterranean Sea is a heavily trafficked region, encompassing traffic between Mediterranean and non-Mediterranean ports, as well as short-sea shipping activities connecting two Mediterranean ports. Europe serves as the primary hub for Mediterranean shipping, receiving approximately 40–50% of total traffic outside the Mediterranean.

The accelerated development of maritime transport infrastructure has been achieved through:^{xix}

Expansion of the Suez Canal

The Suez Canal, linking the Red Sea to the Mediterranean, provides ships with a shorter route than traveling around the southern tip of Africa. In 2015, Egypt launched a project to enhance canal capacity and reduce transit time. The project included a new lane allowing two-way traffic and increased the canal's capacity by 50%, enabling passage for 97 vessels per day compared to an average of 47 previously, with expected growth in Mediterranean traffic (both north and south).

Recent statistics (2022–2023) by the Suez Canal Authority report:^{xx}

- Highest annual transit: 25,887 vessels
- Highest net cargo volume: 1.5 billion tons
- Highest annual revenue: USD 9.4 billion

The Suez Canal Authority has become a model of modern management and operational practices, implementing integration mechanisms across all maritime transport components to achieve strategic goals aligned with its 2030 vision, aiming to maintain safe and sustainable global trade flow through a comprehensive set of technological and logistics solutions.

Expansion of the Panama Canal

In June 2016, the Panama Canal was expanded with deeper locks, allowing larger vessels to transit. Approximately 79% of the global fleet's deadweight tonnage can now use the canal. This expansion increased competition with the Suez Canal for cargo movement between Asia and the U.S. East Coast via the Red Sea and Mediterranean. Vessels previously unable to transit the Panama Canal now have shorter routes and reduced delivery times from Pacific Asian ports (east of Hong Kong). However, the Suez Canal still accommodates larger ships, and its route remains the shortest between North America and Asian ports east of Hong Kong.

Regional Transport Action Plans in the Euro-Mediterranean Area

Euro-Mediterranean economic integration in the transport sector has been a key tool for improving transport systems and logistics services. The first Euro-Mediterranean Ministerial Conference on Transport held in Marrakech in 2005 endorsed a Regional Transport Action Plan (RTAP), defining short- and medium-term priorities for transport system development:

RTAP 2007–2013:^{xxi}

Prepared by the Euro-Mediterranean Transport Forum, this plan included 34 measures focusing on two main pillars:

1. Regulatory and planning convergence
2. Implementation of an integrated infrastructure network

The conference emphasized the need for a safe, secure, sustainable, and efficient transport system, based on harmonized standards and a multimodal regional transport network. The plan also allowed monitoring progress in Euro-Mediterranean transport cooperation.

• **RTAP 2014–2020:** ^{xxii}

This plan focused on developing the Mediterranean transport network and linking it with the European network, guiding Southern neighbor countries in national transport regulatory reforms.

Table3 : Selected Cross-Border Projects and EU Assistance (2010–2024)

Project	Implemented by	EU Contribution	Priority	Period
EuroMed Transport Support ETSP	Idom and GIZ	€6M	Road transport organization, urban transport efficiency	2017–Dec 2022
EuroMed Maritime Safety SafeMed IV	EMSA	€4M	Maritime safety	2017–Dec 2021
EuroMed Rail Transport EUMedRail	ERA	€2M	Railway safety and interoperability	2017–Dec 2021
EuroMed Air Transport ETAP	EASA	€3M	Aviation	2020–2024
EuroMed EGNOS	SUB-AREA	€9M	Satellite navigation, RIM station installation	from 2016
LOGISMED Training Activities	EIB/CETMO	€3M	Logistics training	2014–2019
GNSS II Main Contract	Telespazio	€2M	Technical assistance for EGNOS use	2012–2015
SNAP Southern Neighbourhood Transport Support	EIB/ERA	€7.2M	Priority regional infrastructure support	2013–2016
RRU Roads & Rail Urban	SAFEGE consortium	€6M	Support for road, rail, and urban transport	2012–2016
EuroMed Road Safety	FISCR	€1M	Road accident reduction	2011–2014
EuroMed Maritime Transport II	ARUP	€6M	Efficient and regular maritime links	2010–2014
EuroMed Air Transport II	Bureau Veritas	€2M	Aviation safety	2011–2014

Source: UfM, Evaluation Report – Regional Transport Action Plan for the Mediterranean Region (PART 2014–2020), 9 Feb 2023, pp. 155–156.

The table illustrates the variety of EuroMed projects supporting cross-border transport. Southern neighbor countries benefited from EU-backed projects managed by European transport agencies (EASA, EMSA, ERA) in aviation, maritime, and rail transport. Projects like EuroMed RRU and ETSP supported inland transport, while EuroMed GNSS expanded EGNOS satellite navigation coverage to Southern neighbor airspace.

The coordination and integration of EU bilateral and regional assistance were strengthened through packaged tools (regional EuroMed programs, TAIEX, Twinning, etc.). The RTAP included 23 measures based on priority guidelines in maritime, land (road, rail, urban), and air transport, establishing a multimodal integrated transport network across the Mediterranean.

Implementation monitoring was initially handled by the Euro-Mediterranean Transport Forum and its working groups, later taken over by the current UfM Regional Platform for Transport Connectivity, adopted following the Euro-Mediterranean Senior Officials Meeting on Transport in Barcelona on 30 January 2018, which addressed four working groups: road transport, maritime transport, civil aviation, and logistics.

Strategies and Policies for Sustainable Transport Systems in the Euro-Mediterranean Region: ^{xxiii}

Countries in the Euro-Mediterranean region have prioritized reducing the environmental impact of transport, in line with the United Nations 2030 Agenda for Sustainable Development (Resolution 70/1, 25 September 2015) and reflected in the European Green Deal objectives.

EuroMed for Intelligent Transport Systems (ITS):

Partner countries in the Mediterranean continue efforts to establish more efficient transport systems, flexible infrastructure, and improved transport services, accelerating the deployment of Intelligent Transport Systems (ITS) and innovative mobility solutions. Efforts also include:

- Implementing regulations on passenger rights and specific measures for mobility-impaired passengers across all transport modes.
- Developing unified national strategies for satellite navigation (GNSS), focusing on all transport modes and related activities.

National transport strategies and policies must reflect a commitment to achieving the Sustainable Development Goals (SDGs), particularly those relevant to the transport sector, through concrete measures across different transport modes. In this context, priority considerations include:^{xxiv}

- Safety (SDG 3)
- Sectoral training (SDG 4)
- Women's empowerment (SDG 5)
- Energy efficiency, low-emission vehicles, and electrification (SDG 7)
- Infrastructure resilience (SDG 9)
- Sustainable urban mobility and city resilience (SDG 11)
- Environmental protection, alternative fuels, noise, and air pollution standards (SDG 12)
- Climate action and sustainable use of oceans and seas (SDGs 13 & 14)

International organizations' initiatives regarding various transport modes should serve as a basis for national and regional commitments. Additionally, regional cooperation should be encouraged under SDG 17, ensuring alignment with EU environmental policies and strategies.

Enhancing transport system efficiency includes management reforms, liberalization of services, promoting private sector participation, and developing multimodal transport, particularly via rail connections linking ports with road and rail freight networks. Countries adopt appropriate regulatory and financial measures to improve the sustainability of transport systems.

EuroMed for Global Navigation Satellite Systems (GNSS) :

strengthened through the development of a unified national strategy for the Global Navigation Satellite System (GNSS), with a focus on the transport industry and its related sectors. In addition to leveraging the currently available Galileo open services, the project—valued at €2.1 million and carried out between 2012 and 2014—provides technical assistance and infrastructure to encourage the adoption of Global Navigation Satellite System services in the Mediterranean region. The beneficiary countries include Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, and Tunisia. Developing a unified national GNSS strategy centered on all modes of transport and related activities is essential for enabling the integration of global satellite navigation services.

For example, in Algeria, the implementation of the RIMS station has enabled the reception of corrections transmitted by the EGNOS system. This will undoubtedly enhance the benefits offered by EGNOS—particularly in central and southern Algeria—through improved accuracy, availability, integrity, and reliability. Today, the EGNOS system is being expanded in the Mediterranean region using dual-frequency technology, providing services to Mediterranean countries including Morocco, Algeria, Tunisia, Egypt, Jordan, Palestine, Lebanon, Syria, and Turkey ^{xxv}.

The integrative impacts of international transport systems in the Euro-Mediterranean region, as discussed above, are summarized in Tables 04 and 05.

Table 04: Key Performance Indicators for Comprehensive Regional Integration of Transport Systems in the Euro-Mediterranean Region

Results	Indicators	Reference Year 2014	Year 2020	Source
Port efficiency and transparency Countries in a position to better facilitate international trade in goods	Improvement in time savings	-58%	-	UNCTAD
	Improvement in effort savings	-35%	-	UNCTAD
	Bureaucratic procedures	-49%	-	UNCTAD
	Shipping connectivity index	30.74	36.64	UNCTAD
Marine environment	Countries with better tools to protect the marine environment	Number of countries ratifying MARPOL	0	3 (Jordan, Tunisia, Morocco)
Seafarer training and qualifications	Number of countries ratifying the Maritime Labour Convention 2006 (MLC)	1	5 (Algeria, Morocco, Tunisia, Jordan, Lebanon)	NORMLEX, ILO
Maritime high-speed routes (MoS)	Number of MoS projects	8	17	UfM
Passenger rights in maritime transport	Number of countries joining Athens Convention on the carriage of	3 (Jordan, Libya, Egypt)	3	UNTC

	passengers and their luggage (PAL)			
International road transport	Number of partner countries adhering to major UN road transport agreements	35	38	UNECE
	Number of experts attending UNECE events	9	150	UNECE
Road safety	Regional annual road fatalities	23,534	22,792	WHO
Railway safety and interoperability	Countries implementing safety and interoperability measures	0	3 (Algeria, Egypt, Morocco)	Ministries of Transport
	Countries members of COTIF (cross-border rail freight)	None	Algeria, Tunisia, Morocco	Ministries of Transport
	Countries with independent accident investigation authorities	None	Tunisia	Ministries of Interior
Civil aviation – open skies	Number of open skies agreements signed	2 (Jordan, Morocco)	2	Ministries of Transport
Safer aviation practices	Effective implementation of ICAO USOAP (%)	70.99%	66.11%	ICAO CMA iSTARS
GNSS implementation for aviation	Number of Euro-Mediterranean countries officially requesting participation in GNSS agreements	0	5 (Algeria, Jordan, Tunisia, Lebanon, Libya)	UfM
Mediterranean Transport Network (TMN-T)	Approval of Mediterranean transport map	-	Draft proposal since	UfM

linked to TEN-T			2016 (pending)	
Logistics development	Logistics Performance Index (WB) – average score	2.73 / rank 85	2.84 / rank 7	World Bank

Source: UfM , Evaluation report - Regional Transport Action Plan for the Mediterranean region (PART 2014-2020), 9 February 2023, p132-138

Table 05: Transport System Indicators for South-East Mediterranean Countries (Arab Countries) – 2020

Indicators	Algeria	Morocco	Tunisia	Jordan	Lebanon	Palestine	Egypt
Port efficiency & transparency	12.58	62.02	7.18	33.34	43.18	/	61.16
Maritime safety (number of incidents/units)	268	530	99	356	518	/	1650
ICAO recommendations implementation	59.51%	68.03%	59.41%	81.59%	57.81%	/	84.38%
Accession to UN conventions (number)	3	8	11	4	2	2	3
Logistics development – international shipments (rank)	122	103	115	119	70	/	73
Logistics service quality & efficiency (rank)	113	101	123	93	104	/	63
Tracking & tracing (rank)	103	112	71	84	74	/	89
Infrastructure (rank)	96	93	133	70	73	/	58

Maritime High-Speed Routes (MoS) – Selected Routes

Country	Main Routes
Algeria	1-Bejaia→Marseille&Barcelona 2- Oran → Alicante (Spain)
Egypt	1-Alexandria→Trieste (Italy) & Koper (Slovenia) 2-Livorno(Italy)→Alexandria 3- Damietta → Koper (planned)
Jordan	1-Aqaba→Genoa(Italy) 2-Aqaba→Alexandria 3- Aqaba → Marseille, Alexandria & Tangier (in progress)
Lebanon	Beirut → Catalonia (Spain) & Marseille (France)

Palestine	Gaza Port → Port Said or El Arish (Egypt)
Morocco	Agadir → Venders (France)
Tunisia	1-LaGoulette→Marseille 2-LaGoulette→Genoa(Italy) 3-Radès→Marseille 4- Radès → Genoa (Italy)

Source :UfM , Evaluation report -Regional Transport Action Plan for the Mediterranean region (PART 2014-2020), 9 February 2023, 139-.144

Tables 04 and 05 confirm that the priority guidelines set out in the 2014–2020 Regional Transport Action Plan for the Euro-Mediterranean region have, to a reasonable extent, been translated into tangible outcomes. This has been achieved through enhanced cooperation in linking transport sectors and maximizing opportunities provided by the integration of national and regional transport policies, especially in South-East Mediterranean countries.

The coordinated mobilization of all partners around shared strategic objectives has helped the region's economies play a more significant role in global and regional value chains.

Maritime Transport and Ports :Arab countries prioritized the maritime sector, particularly ports, and focused on implementing best practices aligned with European standards. The involvement of the private sector has increased in key ports in Algeria, Tunisia, Morocco, Egypt, and Jordan, and procedures have been simplified to facilitate trade flows.

Despite some cumbersome procedures, these countries recorded significant improvements in port rankings. For example:

Algeria:

- Implemented the IMO FAL Convention in ports and integrated FAL documents into electronic procedures (e.g., ship arrival notices, pre-import declarations, e-payments) via the APCS platform, established under Executive Decree No. 21-147 (17 April 2021).
- Signed a concession agreement with DP World, which upgraded container terminals, increasing capacity to 800,000 TEUs per year and expanded the Djendjen Port (17-meter draft) with a new container terminal of 2 million TEUs/year.
- Established a VTMS system in 2021 covering the entire coastline and commercial ports, managing VTS traffic, port security, and operations.

Marine Environment Protection:Southern Mediterranean countries have adopted services that enhance marine environmental protection. Through SAFEMED III, countries such as Algeria, Jordan, Morocco, and Tunisia have benefited since 2020 from:

- CleanSeaNet
- SAT-AIS

These systems allow early detection of oil spills and facilitate the identification of potential polluters.

International Road Transport:The International Road Transport Agreement was opened to five southern Mediterranean countries:

- Algeria, Jordan, Morocco, Tunisia (7 July 2016)

- Lebanon (8 January 2020)

This initiative has achieved significant regional success, promoting cross-border road connectivity and adherence to international standards.

Conclusion

The main objective of the Euro-Mediterranean regional partnership is to strengthen close cooperation across both shores of the Mediterranean among Mediterranean partners, focusing on:

- Regulatory frameworks
- Transport infrastructure development

Infrastructure connectivity occupies a high priority on the Union for the Mediterranean (UfM) agenda, recognizing the necessity of regional integration through the modernization and improvement of the Mediterranean transport network, which benefits all partners.

Additionally, EU-southern neighborhood trade relations (excluding Libya and Syria) are managed bilaterally via free trade areas under Euro-Mediterranean Partnership Agreements, primarily covering goods trade:^{xxvi}

- Total trade between the EU and southern neighbors: €149.4 billion
 - ✓ EU imports: €58 billion
 - ✓ EU exports: €91.4 billion
- The region accounts for 4.6% of total EU external trade.

The study concluded that achieving tangible results in the Euro-Mediterranean transport system requires:

1. Cohesion and Integration

- ✓ Aligning national and regional transport policies.
- ✓ Coordinating all partners around shared strategic objectives.

2. Coordination and Monitoring

- ✓ Implementing the action plan under the supervision of **Euro-Mediterranean** dialogue structures led by the Union for the Mediterranean (UfM).
- ✓ This covers maritime transport, aviation, the Trans-Mediterranean network, and road transport.
- ✓ Technical assistance projects should continue to support Mediterranean partners.
- ✓ Increasing the involvement of European transport agencies and the European Investment Bank (EIB).

3. Strategic Planning and Infrastructure Development

- ✓ Developing an efficient transport infrastructure network is essential to promote trade, economic integration, and regional cohesion.

Recommendations

1. Develop High-Speed Maritime Routes

- ✓ Southern Mediterranean countries should expand maritime high-speed routes, giving a new dimension to Mediterranean trade by increasing flows and reducing costs.

2. Deep Régional Economic Integration

- ✓ Northern Mediterranean countries should launch a process of “deep regional economic integration”.
- ✓ This helps southern partner countries to:
 - Identify priority transport corridors and axes.
 - Integrate interoperability and logistics concepts at the project design stage.

3. Enhance Knowledge Partnership

- ✓ Strengthen a knowledge-sharing partnership in the Euro-Mediterranean region.
- ✓ This enables South and East Mediterranean countries to benefit from the guiding map of the Trans-European Transport Network (TEN-T).

Footnotes

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