

Interreg - IPA CBC
Italy - Albania - Montenegro



LASTING

A stylized map of Europe in white and light blue, set against a dark blue background with a network of white lines and dots. A blue circle highlights the Balkan region, specifically covering Albania and Montenegro.

GUIDELINES OF THE LA-PIMS STRATEGIC PLAN

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LASTING

Lower Adriatic Sea - Transit Intermodal Networking Grid

The main goal of LASTING (Lower Adriatic Sea - Transit Intermodal Networking Grid) project and the related LA-PIMS (Lower Adriatic - Passenger Integrated Mobility System) Strategic Plan is to foster regional coordination and streamlining of passenger flows within the Lower Adriatic area and into the Trans-European Transport Network (TEN-T), calling for the relaunch of the Pan-European Corridor VIII.

The project aims to improve the multimodal system of connections, based on analyses of passenger mobility in the Lower Adriatic, as well as to improve the connections between the main cross-border transit infrastructures and the trans-European corridors.

Guidelines of the LA-PIMS Strategic Plan

Abstract

The Lower Adriatic region represents a strategic area to develop routes that could increase not only the connections among territories and cultures but also the economic development in terms of people and goods mobility. The aim of these guidelines is to identify potential strategies and calls to action that the Countries involved could develop in order to enhance multimodal connections within the area, make them more efficient and user-friendly.

Drawing upon the research part that highlighted the difficulties faced by passengers and their expectations for the future, the proposed guidelines will consider the different interests of the multiple stakeholders involved in a more efficient transport network. First, for each strategy both the aspects for people and companies will be discussed as well as the policy implications. For example, investors need to assess the prospective profitability of the strategic improvements, the infrastructure (port, airport) operators need to increase the service capacity or to introduce advanced technology to improve the efficiency, the political authorities are to determine how to plan the local economy structure to properly integrate in order to ensure the long-term prosperity of their territory.

Key points in the strategic development of the connection within the Lower Adriatic region aim to identify the actions:

- to integrate the terminals in a connected network, following the logic of an intermodal system that could grant not only an efficient mobility of people and goods but also a better widespread diffusion of positive effects, whether economic or social;
- to properly design the role and functions to improve on two

different levels: at the inbound level to connect the coast with the inland and at the outbound level to connect with the TEN-T network;

- to improve the connections between the infrastructures to increase the intermodality and the easiness of the transport/travel experience; for example, the connection between the port and the airport or station of Bari;

- to improve both at the infrastructure and managerial level; for example, within the Maas logic and fostering the integration and cooperation between terminals such as making mobility more sustainable (i.e., greener, more efficient and healthier), using innovation, data and artificial intelligence for intelligent mobility, and enhancing transport safety.

Indeed, these guidelines will require not only a pure demand-side development policy, but also as facilities able to enhance face-to-face interactions and hence productivity in a labor-intensive industry like the service or tourism sector.

Transport can help promote cohesion, reduce regional disparities, and improve connectivity and access to the internal market for the areas involved.

Introduction

Mobility, whether of people or of goods, has a wide range of effects on the economic, social, and environmental development of a place.

Nowadays it is strategically important for a country to develop cross-border agreements in order to “promote cohesion, reduce regional disparities and improve connectivity and access to the internal market for the regions involved. Transport infrastructures are widely and historically recognized as a key factor capable of fostering territorial cohesion, mitigate economic disparities, favor economic development, and convergence” (Bottasso et al., 2014).

Fostering the exchange of people and goods calls for actions to direct more activities towards more sustainable transport modes, in particular by increasing the number of rail passengers and commuters using public transport and active modes of transport, as well as by transferring a significant amount of goods transport on rail, inland waterways and short sea transport routes.

The importance of infrastructures as economic catalysts of the places they serve has been widely stated, highlighting the positive social and economic benefits due to the integration of different economic industries and the agglomeration of services they foster (e.g., Funke & Yu, 2011; Yu et al., 2017). The intermodal connection among them and the routes designed to be more efficient needs the identification of transportation hubs, assembly points, distribution centers and spokes to enhance or stimulate an efficient flow of people and goods. Initiatives such as the Belt and Road, Corridor VIII, aim to improve the infrastructure along the line including ports, railway and airports with ambitious investments.

Multiple stakeholders have different interest orientations in such a decision context. For example, investors need to assess the prospective profitability of the strategic improvements, the infrastructure and transport operators need to increase the service capacity or to introduce advanced technology to improve the efficiency.

The government authorities, instead, are to determine how to plan the local economy structure to properly integrate with the transport infrastructure development to ensure the long-term prosperity of their territory.

In fact, the link between the infrastructure activities and local development has been widely discussed from different perspectives and with various methodologies (e.g., Arvis et al., 2012; Akhavan, 2017; Camagni & Capello, 2013; Daamen & Vries, 2013; Gervasoni, Del Giudice & Sartori, 2006; Hall & Jacobs, 2012; Heijman, Gardebroek & van Os, 2017; Merk, 2012; Percoco, 2010; Purwanto, 2010). Not only the cities and regions in which the infrastructure exists but also the surrounding countries benefit from a dynamic relationship between the benefits of the infrastructures and their economies (e.g., Heijman, Gardebroek & van Os, 2017). However, it is not a pure economic effect, whether demand-or supply-side driven, but also – and more importantly – capital and knowledge intensive given by the face-to-face interactions measured in terms of connectivity with other places (Brueckner, 2003). In fact, local economic development includes not only GDP but also other key factors, such as population, area, intellectual properties, which can measure the interaction between the benefit of an infrastructure and regional development (Bottasso et al., 2014).

The benefits of the connectivity

The link among the transport infrastructure endowment, the level of regional connectivity, and the international freight and people flows has various important challenges that need to be strategically addressed to contribute to the development of the low Adriatic area.

Access to international markets

The creation of transport networks aims at improving connectivity with international markets.

The nodal infrastructures are considered as a strategic economic endowment able to connect global and local markets favoring globalization.

Different transport systems – and related infrastructure – affect regional competitiveness and trade openness in a number of ways, as shown by various studies concerning the role of air transport connectivity (e.g., Graham, 1998), land modal solutions (e.g., Cosar & Demir, 2016) and maritime transports (e.g., Wilmsmeier, Hoffmann & Sanchez, 2006).

Moreover, the logistics that links together the different transport networks, enhances international production chains (e.g., Bensassi et al., 2015; Hesse & Rodrigue, 2006).

In such a context, the beneficial effects have been proved to derive from travel costs and knowledge flows. Improved territorial accessibility has a significant impact on gross domestic product, employment levels, regional inequalities and investment growth (Zhang & Graham, 2020).

The beneficial link between transport infrastructures and economic development is mostly based on their relative efficiency, which is generated by reduced time and transport costs that in turn can have different implications such as higher productivity of other inputs, Lower production costs, greater specialization, growth of trade, more intensive competition, enlargement of relevant markets, improvement in the division of labor, better access to foreign intermediaries and exploitation of scale economies. The containerization of the freight has favored the diffusion of new practices such as hub and spoke strategies, traffic concentration and service rationalization, while the increasing tertiarization of most economies and high value-added products require a more intermodal transport, mixing road, air and rail.

Also, the globalization process has induced the relocation of some manufacturing activities towards countries characterized by Lower production costs, thus requiring a reorganization of the freights routes in order to have better accessibility to diverse economic systems (e.g., Grobar, 2008; Lee, Song & Ducruet, 2008).

The inter-sectoral spillovers generated by the infrastructures may propagate outside the city and region spreading the effects across the countries.

Indeed, greater accessibility and Lower transportation costs contribute to raise the market potential of different locations (Condeco-Melhorado, Gutierrez & Garcia-Palomares, 2011; Niebuhr, 2006).

Passenger mobility

The increase in terms of passengers moved by a more efficient and intermodal transport system has a beneficial effect on face-to-face interactions which is likely to enhance productivity especially in the service sector. In this context, a transport network is increasingly considered to be key factors in local development.

By making long-distance commuting more efficient and easier, both the distribution of economic activities and the transmission of knowledge can be redistributed from developed to less developed locations.

The better connection among countries that derives from a transport network will affect its market potential and contribute to reduce regional disparities. However, it might happen that the disparities may increase (the so-called straw effect) unless the prices of non-tradables (e.g., land rent, housing costs) are much higher in the developed region.

The passenger mobility that contributes to face-to-face contacts have a wider effect within a business community, whether from and to the head office location or simply knowledge exchange among people in terms of cultural exchange. Although codified and mediated information is available everywhere and anytime due to information and communication technology, some important knowledge can be transmitted only by face-to-face contact (Williams, Rodriguez & Makkonen, 2020; Wickham & Vecchi, 2008).

In particular, in the case of service-related, young, and high-tech firms which conduct activities requiring considerable interpersonal contacts that are often only possible with high-quality transport (Iammarino & McCann, 2013; Zhang & Graham, 2020).

Moving people, especially professional mobility, signals a strategic strength in corporate strategy and flexibility and reactivity of an economic system

(Aguilera, Guillot & Rallet, 2012). However, the physical mobility of people from a place to another can represent a huge cost especially in terms of travel time (Williams & Balaz, 2009). Therefore, an efficient intermodal system has to consider acceptable distances between infrastructures and places of interest (whether or not companies). Therefore, the land-side accessibility, on the basis of the travel time from a region to another, from an infrastructure (e.g., port) to another (e.g., airport or station), serves as a proxy of the actual catchment areas. (Halpern, 2020; Lian & Rønnevik, 2011).

Policy implications

In general, policy makers have always considered transport infrastructures as a key factor capable to foster territorial cohesion, mitigate economic disparities, favor economic development and convergence. “Roads, high speed rail lines, freight shipping ports, and airports financed through Trans-European Transport networks schemes are expected to bring about major EU-wide transformations, not only by removing bottlenecks and breaks in the EU transport system, but also in terms of improving regional GDP per capita, promoting employment, facilitating mobility, and enhancing accessibility, as reflected in the assessment criteria for these policy measures” (EspoN, 2009).

Improving a country’s logistics system and the coordination among transport policies should be a priority in the coordination among different transport authorities and logistics stakeholders, together with the presence of institutional barriers, limit the development of an efficient transport system. In accordance with the research findings, current practices generate disparities that could make the integration among different transport and logistics systems more difficult in the Lower Adriatic region.

These barriers negatively affect most of the international trade operations, generating bias due to the “face-to-face” operations (e.g., custom clearance) that also affect the reliability of the overall transport system.

Also, the negative effect of the congestion caused by traffic growth should

be considered in the development of the right policies to develop an efficient transport system. This implies to consider the potential reduction of the attractiveness of infrastructure neighboring areas and the consequent relocation processes of activities and related services.

Since the economic benefits of a transport infrastructure tend to be increasingly concentrated outside the region where the infrastructure is located (Ducruet, 2009; Monios & Wilmsmeier, 2012; Musso et al., 2000), the agglomeration power of transport nodes is commodity specific and depends on regional specialization (Tabuchi & Thisse, 2002).

The multiplicative positive economic effects of a transport network stem from the infrastructure activity and sprawl to an area often wider than the region. However, the main issue is the determination of possible spillover effects in the neighboring regions. The negative externalities also in terms of social costs have to be considered and addressed.

At all levels (national, regional and panregional) policies should be set to increase the accessibility of regions, especially in the context of TransEuropean

Network corridors, by investing especially in intermodal, sustainable transports. Sustainability means not only to reduce the use of fossil fuels – by introducing more zero-emission vehicles and by promoting the use of renewable and low-carbon fuels – but also using innovation, data and artificial intelligence for intelligent mobility and infrastructure maintenance.

On the pure economic side, external costs should be internalized by applying the “polluter pays” and “user pays” principles as well as enhanced transport security, which would make the system more efficient.

Therefore, regional and local resources should be allocated on economic welfare, safety & security, modernization and foreign investment attraction. In combination with the Pan-European Corridor VIII, efficiency and safety should be highlighted.

Strategic planning should start with the modernization of existing networks in order to reach a better accessibility and, consequently, greater travel flows (e.g., the connection between the port area of Bari and the freeway

Bologna-Taranto). The consequent flexibility of the transportation system will have an effect on the reduction of the costs for passengers and of the time both for companies and people.

In relation to safety, instead, this strategy should be developed from multiple perspectives:

- Safety in terms of the structural aspects: for example, through the adoption of drainage surfaces on all roads rather than through the application of lane-side sound bands not only to highways but also to suburban roads;
- Awareness campaigns aimed at promoting safer driving behaviors, reducing traffic jams and accidents that can block the traffic;
- Promotion of a transportation system that is more in line with the European policies, thus improving the reputation of the area and targeting a more social responsible segment both at the individual and at company level.
- Improve the procedures for travel between the countries of the Lower Adriatic area, connecting in a network not only the transports but also the related industries (e.g., hospitality, xxx): the higher flows of people would be beneficial for the local economies both in terms of revenues and promotion.

Proposals (Key points of the strategic plan)

Key points in the strategic development of the connection within the Lower Adriatic region aim to identify the actions:

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mobility of people and goods but also a better widespread diffusion of positive effects, whether economic or social;

- to properly design the role and functions to improve on two different levels: at the inbound level to connect the coast with the inland and at the outbound level to connect with the TEN-T network;
- to improve the connections between the infrastructures to increase the intermodality and the easiness of the transport/travel experience; for example, the connection between the port and the airport or station of Bari;

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The creation of a Lower Adriatic area corridor should not only have good and well-maintained transport infrastructure, but also smooth implementation of agreed legal frameworks, transit rules and policies and transport and trade facilitation measures.

First, a technical and legal framework is crucial to develop an efficient intermodal transport network with correlated services.

The framework should identify the railway and road lines to be used for intermodal transport, important terminals, border crossing points and ferry links.

It should also establish international infrastructure standards and minimum performance standards for intermodal and combined transport services.

Therefore, coordination is a critical element to design and implement integrated services along the routes. A LA Corridor Management Group (CMG) should be created with the aim to set up corridor interoperability

priorities and monitor their implementation, operational targets and monitor them, as well as propose corrective action.

The CMG should establish corridor specific work plans and operational targets, specific key performance indicators, pooling of rolling stock, containerized transport units etc.

In relation to the use of data and AI to modernize the transport network, it could be possible to create a Network Observatory, which could use benchmarking data and practices from the member States but also from other similar initiatives. This Observatory could be developed with the Universities of the countries involved that can provide machine learning tools to help with infrastructure maintenance, demand prevision and harmonization of various initiatives on the electronic exchange of data among the transport companies and control agencies.

The possibility of expeditiously completing operational and regulatory requirements could affect the efficiency of processes at the border crossings. To do so it is fundamental to identify good practices, performance indicators and possible multilateral arrangements.

Within the Observatory specific study projects could be developed in order to test and better understand the potential activities and solutions to the development of the transport network within the Lower Adriatic area.

For example, a potential project should understand the use of fully automated vehicles as part of smart transport systems within the general objective of making transport and trade connectivity sustainable, contactless, seamless and collaborative.

They can significantly reduce the economic, social and environmental costs of passenger and freight transport, while enhancing its overall quality and resilience. At the same time, their implementation in the area is far from being considered for various reasons, the main of which is the trust in fully automated vehicles.

Another potential study project in line with the objective to strengthen the intra- and inter-regional transport connectivity, could be how to develop the capabilities for sustainable transport connectivity.

The Lower Adriatic area could represent a key region in connection continental Europe with the Balkans in order to have access to farther markets and cultures, given its convenient location on transit routes between these two areas.

Therefore, the network would enhance not only trade exchanges but also the socio-economic development of all involved countries.

Activities for the development of the LA-PIMS Strategic Plan

The steps for the development of the LA-PIMS Strategic Plan are reported as follows:

- Step 1 - Identification of terminals (ports, airports, bus or railway stations, etc.) and main nodes (point of the main road network, etc.) of the multimodal transport network in the Lower Adriatic area, with the definition of the role and function carried out in the multimodal transport network (access point to Ten-T network, node of regional network, etc.);
- Step 2 - Identification of the main infrastructures (roads and railways) pertaining to the multimodal transport network in the Lower Adriatic area, with the description of the performance provided by these elements (capacity, travel times, etc.);
- Step 3 - Identification of the passenger transport services (ferries, railways, air and buses services) connecting the terminals of the multimodal transport network in the Lower Adriatic area, with the description of the performance provided by these services (route, frequency, travel times, fares, etc.);

- Step 4 - Identification of the improvements necessary to upgrade the infrastructures of the multimodal transport network in the Lower Adriatic area for the lack of physical connections or the low level of the performances provided;
- Step 5 - Identification of the improvements necessary to upgrade the passenger transport services of the multimodal transport network in the Lower Adriatic area with the aim to increase the intermodality and the easiness of the transport/travel experience;
- Step 6 - Identification of innovative policies and management actions for promoting more sustainable mobility solutions, increasing the economic and social benefits correlated with the transport system, fostering the integration and the coordination between terminals in the Lower Adriatic area.

Step 4, 5 and 6 are correlated among them and therefore have to be developed in the same time frame for coordinating and overlapping proposed mobility solutions.

The Network Observatory and the CMG could be created also to address, support and validate the construction phase of the LA-PIMS Strategic Plan.

Concluding Remarks

Transport connectivity policies need to consider not only the infrastructure density and travel speeds, which corresponds to faster modes of traveling and quantitative improvements, but also qualitative improvements such as increased passenger convenience and comfort.

The main aim of these policies and interconnected systems should be improving accessibility.

Therefore, evaluation and planning practices reflect traffic-based (vehicle movement) and/or mobility-based (people and freight movement) analyses

associated with solutions favoring the improvement of an ever-increasing flow of freight and passengers. However, these actions can result in Lower benefits and higher costs due to the expanding transportation networks and freight and passenger traffic.

In such a context transport accessibility means alternative transport modes, improved mobility management, intermodality, better and swifter information provision for transport users and more efficient land use.

In such accessibility-oriented approach, people are at the center of the transportation system thus calling for additional actions such as the improvement of alternative transport modes, intermodality, and incentives to change travel behavior.

The integration of the transport system requires an optimal use of all the transport modes thus benefitting from scale economies and comparative advantages.

The optimal modal split of freight and passenger transport depends also on a country's geographic, demographic, economic and historic conditions.

However, major modal shifts are unlikely without substantial changes in costs/pricing or strong regulatory measures.

Freight transportation markets match service needs to modal characteristics. Road, rail, water and air transport offer different advantages/disadvantages in speed, reliability, accessibility, affordability, and safety. Instead, the use of intermodal facilities by passengers needs appropriate alternatives to the car and appropriate infrastructure to allow travelers to use different modes.

Well-integrated, well designed and organized transport interchanges, frequent public transport connections would facilitate the passengers' flows as well as increase social inclusion.

In conclusion, policy measures that may affect transport mode choices include economic instruments (e.g., fuel taxes, congestion and/or emission charges), labor and safety regulations and investments in infrastructure and service improvement.

Research

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