

TOWARDS SUSTAINABLE TRANSPORT POLICY AND HARMONIZING EXTERNAL TRADE BY MODE OF
TRANSPORT: MACEDONIAN CASE

Ph.D Riste Temjanovski, Associate Prof.⁷⁹

Abstract

There is a growing imbalance between modes of transport in all over the world. The increasing success of road and air transport is resulting in ever worsening congestion, while, paradoxically, failure to exploit the full potential of rail. But saturation in certain parts of the European Union must not blind us to the fact that outlying areas have inadequate access to central markets. In this context the main engagement in the trans-European policy is to pursue the optimization of the interregional transport services at the European level through a multimodal approach and interoperability for each transport mode. Coherent transport policy can contribute to reduction of the budget expenses for the transport sector by providing the conditions for efficient management of infrastructure or the instruments for internalization and reduction of transport external costs.

For Macedonia case, transport plays essential role for economic development. Regional co-operation in Western Balkans is of even greater importance today. From a commercial point of view, the Union is the main trading partner for Western Balkans, and its business cooperation with these countries has increased in importance.

But, one mode of transport is consistently predominant. Road transport was the main mode of transport used for trade with European countries. The analysis of external trade shows that road transport was by far the most used mode of transport for trade with 92% by value. But in terms of volume, this accounted for 89% over the five years. Also showing a higher percentage in terms of volume than value, rail transport accounted only between 12-20% by volume and between 5-10% by value.

In addition, the Republic of Macedonia should take advantage of its position, harmonize all transport modes, because such as South-East European country, it is at intersection of routes to Balkans, Mediterranean and Caspian Region and Asia. Corridors VIII and X are expected to be ones of the impulses to generate economic development among countries of Western Balkans.

Sustainable transport is an enormously complex and dynamic subject, and it can be concluded that the transport system in this region can be improved by favoring those transport modes which are more effective and environmentally friendly.

⁷⁹ d-r Riste Temjanovski, vonredni profesor - *Associate Prof. Riste Temjanovski, PhD*, Goce Delcev" University – Faculty of Economics – Stip, R.of Macedonia e-mail: riste.temjanovski@ugd.edu.mk

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Introduction

Transport is a key element in the development of any society. Advances in transport technology have extended the range of markets, enabled new methods of production, fostered specialization and strengthened social, political and economic ties between countries and major geographic areas. Transport creates valuable links between regions and economic activities, between people and the rest of the world.

The demand for transport of people and goods is rising from day to day, and the consequences are reflected in an overburdening of parts of the transport network and an imbalance in the overall transport infrastructure. In the last few years private passenger road traffic in particular has been growing at the expense of other modes of transport, which shows up in the unfavorable ratio in the choice of transport mode.

Transport represents one of the most important human activities worldwide. It is an indispensable component of the economy and plays a major role in spatial relations between locations. The trade of goods, finance, information and people among the world's economies is not new. But in recent decades the international flow of trade and finance has grown to unprecedented levels and become **essential to the world economy**.

Transport is one of Europe's strengths. European transport systems compare well in terms of efficiency with other developed regions of the World and they are an essential component of the European economy. The European countries differ both regarding the level of transport development as well as in the priorities of development plans. On the one hand are the countries of the European Union with developed transport systems, and on the other the countries in transition, that have poorer transport infrastructure and fleet as well as inefficiently organised transport. In transition countries the efforts of institutional restructuring of government management of transport infrastructure are particularly noticeable. However, the developed countries as well deal seriously with issues of privatising the transport sector and the transport infrastructure.

The development and progressive completion of a Trans-European network, as the infrastructure basis for the flows of goods and the free movement of people in the Internal market, remains a vital policy objective for the EU that will bring the Western and Eastern part of the Union together and so creating the future Single European Transport Area.

Trans-European transport policy is key factor to stimulate economic development in Europe. For the countries from Western Balkans integration in the world economy has three aspects:

- a regional one, that involves the economic relations between each other and other countries in Western Balkans and Central and Eastern Europe, (many of which are members of the Central European Free Trade Area - CEFTA);
- a European one that involves primarily their relations with the European Union (EU), by far their most important trading partner and source of direct investment; and
- a global one, that involves their trade relations with the rest of the world.

While in many respects they are giving the European dimension the highest attention because of the importance of their economic links with the EU, they cannot afford to ignore the other two dimensions: their relations with the EU will yield greater benefits, if they are pursued within a liberal trade environment towards the rest of the world; and the same is true for their relations with their neighbors which are also on a path to integrate in the European structures.

Transport systems in the countries in transition differ significantly in both structure and scale. For instance, some carry exceptionally high volumes, if only because of the surface area they cover and the size of the population they serve. In addition, progress with the economic reform process varies widely from one country to another and not all countries are introducing market mechanisms at the same pace, this being the case in the transport sector.

For Macedonia case, transport plays essential role for economic development. Regional co-operation in south Eastern Europe is of even greater importance today, in the aftermath of conflict in former SFRJ, than a two decade ago. Political and commercial ties amongst EU member states and countries from Western Balkans are strengthening rapidly. Political ties are tighter due to the fact that the Western Balkans countries aim to become full members of the Union, and their relations with the Union are based on different agreements bringing them closer to full integration. From a commercial point of view, the Union is the main trading partner for Macedonia, and its business cooperation with these countries has increased in importance.

Macedonia and Core Regional Transportation Network

Republic of Macedonia is a landlocked country located in the south-central part of the Balkan Peninsula. Country area is 25.713 sq km bordering with two EU member states: in the south - Greece and in the east - Bulgaria. The neighbor in the north is Serbia and Kosovo, and Albania in the west.

The economy in Republic of Macedonia is ranging on the list of non-so-successful economies in transition. As a new independent state, it has strived very hard to survive and to maintain macroeconomic stability, while at the same time implementing all the necessary reforms that were requested by international organizations. During the last two decades, Macedonia has been progressively opening its market and has made progress in liberalizing its economy.

The transport sector has an important role in the national economy. In addition, the Republic of Macedonia should take advantage of its position, because such as South-East European country, it is at intersection of routes to Balkans, Mediterranean and Caspian Region and Asia. Republic of Macedonia is promoting the concept of EU Neighborhood Policy into the transport field for better connection the EU with the neighboring countries and regions. External links include all direct links of the Country with neighbouring countries, as they manifest the most direct relations as parts of the obligations to develop good neighbourly relations and intensive exchange and cooperation with the surrounding. The major transnational axes are those which contribute most to promote the international exchanges and traffic as well as to enable regional cooperation and integration. The High Level Group document has determined the EU member states Major Trans - National axes, where the South Eastern axis links the EU through the Balkans and Turkey to the Caucasus and the Caspian Sea as well as to Egypt and the Red Sea. Access links to the Balkan countries as well connections towards Russia, Iran and Iraq and the Persian Gulf are also foreseen as well as a connection from Egypt to the South towards other African countries. SEE axis which are passing through Republic of Macedonia, fully are covering the existing defined Corridor X and VIII. On the existing Corridor X, with a total length of 172 km, passing the country in North - South direction; at about 71% has been already finalized to modern highway standards and the remaining sections accounting 29% of the total being ready for tender procedures.

On the existing Corridor VIII, with a total length of 304 km, crossing the country from East to West, is less advanced in comparison to Corridor X. Only 36.3 % of the total length is already built to modern highway standards. Corridors VIII and X are expected to be ones of the impulses to generate economic development among countries of Western Balkans. In other hand they also play a main role in domain the Economic and Environmental Programs in this regional policy. These corridors would be assisted by the establishment of set of multilateral principles and encourage the transfer of passenger and goods.

Distances from major destinations

Country	Distance in km
Zagreb (Croatia)	815 km
Sarajevo (Bosnia and	450 km

Herzegovina)	
Belgrade (Serbia)	420 km
Sofia (Bulgaria)	250 km
Tirana (Albania)	230 km
Prishtina (Kosovo)	90 km
Thessalonica (Greece)	230 km
Athens (Greece)	700 km

The European Community is supporting the implementation of these projects to attain greater, efficient transport system which reduce regional disparities and effective better balance between European countries.

There is strong political commitment to the development of the regional transport networks is confirmed with the signing of the Memorandum for understanding of the development of the South East Europe Core Regional Transport Network in June 2004. More recent efforts for defining the Core Regional Transport Network are made with in the future Treaty for Establishing a Transport Community between the EU and South East Europe Partners which should be in force by 2011.

Border crossings

The border cross issue is depending mainly on the successful implementation of the modernization of customs regulations, improvement and operability of the cross border buildings, enhancement of the battle against smuggling, corruption and illegal human trade. The other issues are mostly related with the interaction between the public and private sector and strengthening of the regional cooperation.

The number of official border crossings in the Republic of Macedonia towards the neighboring countries is:

a) 15 road border crossings:

3 with Bulgaria (Deve Bair near Kriva Palanka, Novo Selo near Strumica, and Delcevo);

3 with Serbia (Tabanovce, Sopot and Pelince near Kumanovo);

2 with Kosovo (Jazince near Tetovo; and Blace near Skopje);

3 with Greece (Bogorodica near Gevgelija, Medzitlija near Bitola, and Star Dojran near Dojran); and

4 with Albania (Stenje near Resen, Sveti Naum near Ohrid, Kafasan near Struga, and Blato near Debar).

b) 3 railway border crossings:

2 with Serbia (Tabanovce near Kumanovo, and Volkovo near Skopje);

1 with Greece (Bogorodica near Gevgelija).

c) 2 airport border crossings in Skopje (Alexander the Great Airport) and Ohrid (St. Paul the Apostle Airport).

According to the National Strategy for Integrated Border Management, categorization is carried out at border crossings in regards to their operational capacity (current and prospective). Improving the throughput of the crossings, with full respect to the previously mentioned concept of "accessible but secure borders and "Schengen best practice" in this country are implementing the concept of "Single Window" and "One-Stop-Shop". By applying these concepts, will greatly reduce the waiting time at the crossings as well as their transfer, which will produce major positive economic effects. Some of the issues in the near future will be placed among others:

- The harmonization of customs procedures with neighboring countries
- The harmonization of categorization of the borders with neighbors.

The development of border crossings depends largely on successful implementation and modernization of customs legislation, improving the operation of border crossings and intensifying the fight against smuggling, corruption and trafficking of human beings, respecting the basic principles of "accessible but secure borders". Other issues in greater extent are related to the interaction between public and private sector and strengthening of regional cooperation.

National Transportation Network

Transport network of the Republic of Macedonia, structured of several communication sub-systems, has been established through the system of transport and communications, upon which national space is organized. Transportation system of the Republic of Macedonia is composed of road, railway, air, lake transport and post traffic and system of communications consists of telecommunications and radio-diffusion system.

- *Road transport.* Republic of Macedonia has a total of 13.940 km categorized road network, out of which 911 km are national roads, 3771 km regional and remaining 9258 km local roads. Major part of national roads or 553 km are included in the European roads "E" system, while only 251 km of motorways may be included in the TEM TEM (Trans– Europe Motorway) system of roads, these being: Border R.Serbia - Kumanovo - Petrovec - Veles - Gradsko -Negotino - (to Demir Kapija); Skopje - Petrovec; Hipodrom-Miladinovci; Skopje (Saraj) - Tetovo; Tetovo - Gostivar. Out of the total length of categorized national and regional road network, 251 km (4.7%) are at motorway level, 341 km (7.9%) are with tracks width of 7 meters or more, 297 km (6.9%) are of tracks width of 7 meters and less, 1523 km (35.3%) have width bigger than 5.5 meters, 306 km (7.0%) are of width ranging from 4.5 and 5.5 meters, 872 km (20.2%) with width less than 4.5 meters and 774 km (17.9%) are with earth tracks.

The national road network is of a high density with the exception of the highways. Today, the overall road network of the country has a total length of 13898 km. The network itself is a good starting basis for further development.

Table 1: Type of roads and total length in Republic of Macedonia

Type of roads	Total length (km)
Highways	251
Magistral roads	911
Regional roads	3771
Local roads	9258
TOTAL	13940

Source: State statistical Office: Statistical Review: Transport, tourism and other services. 8.4.10.04.669. Skopje: Statistical Office 2010.

Table 2: The assessment of the general conditions of the road infrastructure

	Good	Medium	Poor
Highways (Magistral 2x2)	60%	30%	10%
Magistral (M 1x2)	60%	30%	10%
Regional 1 (R1)	45%	27%	28%
Regional 2 (R2)	20%	30%	50%
Gravel (R2)		50%	50%

The overall condition of the road structure (main and important regional roads) is lower in comparison to European and some Neighboring Countries Standards. The existing constructions are in fact generally strong and of a good quality. The magistral roads, and in particular the highways, which have to carry the higher portion of traffic are in a better condition than those of second importance. The worst conditions can be assessed on low-traffic regional roads; most of them with dead ends. Many of them don't present neither geometric, structural, nor traffic characteristics and not justifying their classification into the regional road network.

- *Rail transport.* The Railway Infrastructure in the Republic of Macedonia was constructed in 1873 with the first Railway Track from Skopje to Thessaloniki in Greece. Today the railways network is about 696 km in single track lines and normal gauge of 1435mm.

There are 53 locomotives, 110 passenger cars, and 1323 freight wagons. In 2009 the railway carried 1.523.000 passengers, equating to 154 million passengers/kms. As for cargo, the railway has carried 2.929.000 tons, equating to 497 million ton-kms of cargo. The railway carries selected bulk commodities including fuels, coals, cokes, steel products and clinker/cement.

The main line on Corridor X from Tabanovci to Gevgelija – via Skopje and Veles is a single-track line, electrified (25Kv, 50Hz) and relay signal system which allows a good exchange of communication by fiber-optic cable. The last renovation on most sections has taken place 30 years ago. The total length of the railway infrastructure in Corridor VIII is about 307 km on the territory of R. of Macedonia and 152 km (or 49%) are constructed and operational. About 89 km or 25% of the total length are remaining to be constructed on the link with Bulgaria and 66 km or 20% of the total length on the link with Albania subject to construction.

The railway system suffers from a chronic lack of maintenance that has been evidenced for many years and the rehabilitation that will be required to recover the position to achieve acceptable levels of safety at speed are difficult to quantify with any accuracy at this time.

Besides incomplete basic infrastructure network: the missing part of Corridor VIII and still no electricity on part of Corridor VIII, which is in function, and branch Xd of Corridor X, there are several factors that explain the relatively small role of railways in the transport system of the country. All major issues related to geographical features of the state, i.e. the short distance among urban centers in the country especially between Skopje - Veles, Skopje - Kumanovo and Skopje-Tetovo are currently limiting factor for the low level of technical and technological development. This lack of adequate investment in infrastructure especially in transport can become a great asset to the extremely large benefit for the country (in all European countries there is well-organized suburban rail passenger traffic).

In 2007 Macedonian Railways (*Makedonski Železnici*; MŤ) was reorganized into two separate joint stock companies—a public enterprise in charge of infrastructure management, Macedonian Railways Infrastructure (MŤ-I) and a transport company in charge of passenger and freight operations, Macedonian Railways Transport (MŤ-T). R. of Macedonia adopted a new railway law and rail safety law in 2010, both of which entered into force on April 17, 2010. Since 2007, there are two independent rail companies as successors to Macedonian Railways—Public Enterprise Macedonian Railways Infrastructure (MZ Infrastructure) and the joint-stock company Macedonian Railways Transport (MZ Transport). This change was part of a broader railway reform program aimed at making the Macedonian rail sector comply with EU directives and the EU rail *acquis*, and by doing so, increase the commercial orientation of activities in order to allow the rail system to operate successfully and in competition with other operators.

Trade and role the transport mode

The adaptation of the national economy to the European market is necessary, considering the fact that the European Community is important external trade partner, and integration processes in Europe will result in long-range economic and other implications on future cooperation. The involvement of the economy of the Republic of Macedonia into integrated developments in Europe has been conditioned by the commencement of the process of economic restructuring, introduction of modern technical and technological solutions and international standards. The national economy, due to limited accumulation and need for intensified economic development and changing of unfavorable economic structure will remain liable to utilization of additional accumulation from abroad.

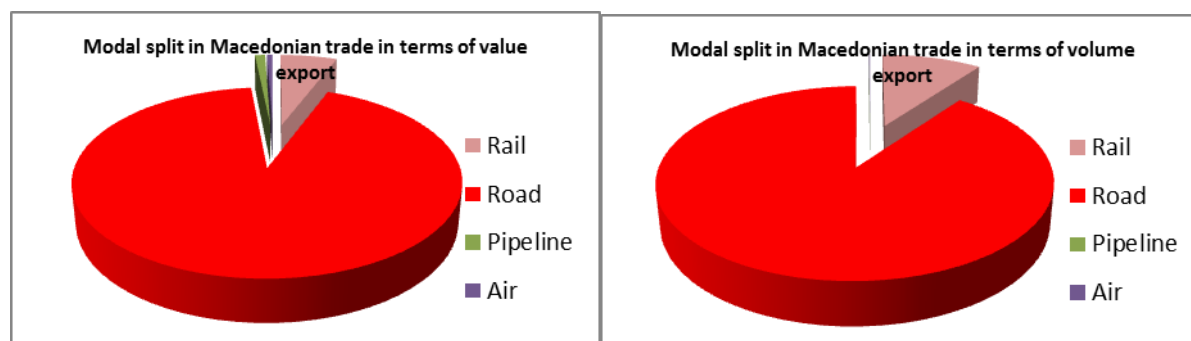
One mode of transport is consistently predominant in transport and trade of passengers and goods. Road transport was the main mode of transport used for trade with European countries other than EU. The analysis of external trade shows that road transport was by far the most used mode of transport for trade. Road transport was the main mode for 92% of exports and 79% of imports by value (the same transport mode participate with 89% over the five past years of export by volume and 72% of import by volume) with 92% by value. Also showing a higher percentage in terms of volume than value, rail transport accounted only between 12-20% by volume and between 5-10% by value.

The volume of goods exported from the R. Macedonia by rail between 2005 and 2010 decreased by 10.48% (2005) to 5.77 % (2010).

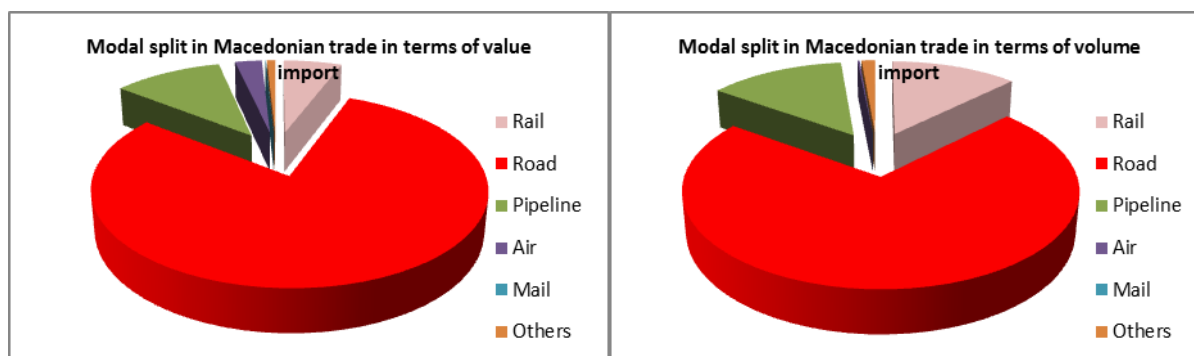
The volume of export by air is 0.10%, mainly on account of the volume of goods traveling by air with EU-27, but because of the small volume of this trade, the participations is not as significant as it appears. By contrast, imports by air scope by 2.63% (by value) over the five years period, with EU-27 as the main trading partners.

Table 3: Modal split in Macedonian trade in terms of value-volume; export-import.

Modal split in Macedonian trade in terms of value-volume; export-import.								
Transport mode	value export		value import		volume export		volume import	
	USA \$	%	USA \$	%	kg	%	kg	%
Rail	190.378.973	5.77	726.374.069	5.82	329.528.188	10.03	726.374.069	12.66
Road	3.058.399.535	92.33	4.152.519.023	79.77	2.953.033.151	89.87	4.152.519.023	72.36
Pipeline	3392586	1.03	591558654	10.85	0	0	780694204	13.6
Air	18689889	0.57	146128022	2.68	3169343	0.1	957543	0.2
Mail	401283	0.01	2719638	0.05	3028	0	90947	0
Others	33575	0	45038630	0.83	641	0	77912712	1.36



Graph 1: Modal split in Macedonian trade in terms of value (USA \$) and volume (tonnes) export



Graph 2: Modal split in extra EU-27 trade in terms of value (USA \$) and volume (tonnes) imports

Promote the Sustainable transport policy

The twentieth century, more than any other, has seen a considerable growth of the transport demand related to individual (passengers) as well as freight mobility. This growth is jointly the result of larger quantities of passengers and freight being moved, but also the longer distances over which they are carried. Recent trends underline an ongoing process of mobility growth, which has led to the multiplication of the number of journeys involving a wide variety of modes that service transport demands.

But how to attain harmonizing transport modes?

The basic strategic determination of transport policy of the Republic of Macedonia is the achievement of higher level of the overall functional integrity of the space in the Country, as well as facilitation of conditions for significantly greater infrastructure and economic integration with neighboring and other European countries. Macedonian transport policy should place rail and road transportation on an equal footing: the legal provisions and the level of financial contribution of the state for railway and road infrastructure should be equivalent. This will allow users to make the socially optimal choice between the two modes for each trip.

The achievement of higher level of integrity of the space in the country assumes reduction of regional disparities, i.e. quality changes in spatial, economic and social structure, especially in areas with emphasized malfunctions of social and economic development. An Integrated transportation system has a key role to play in facilitating economic growth in remaining competitive by having access to fast, efficient and reliable transport services, as well as ensuring individual mobility through offered transport services.

- *Operating, managing, maintaining and executing new constructions* of the transportation network directly contributes to the economy, linking people to their works and other daily

activities, promotes employment as a key element of social inclusion which enables economic growth. Transport can also contribute on releasing the economic and regeneration potentials of particular areas in the country.

- With developing the transport network, we promote the social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network;
- The immediate expected impact of a transport investment is to reduce general transport costs, lead times for transportation in general and having a positive impact on the short term GDP development.

Strategy for sustainable development of the Republic of Macedonia for the next period must take into account into:

- Improvement of the urban flow and traffic, securing the urban transport infrastructure's role in reducing the green house gas emissions;
- Implementation of environmental noise protection, and support for a transport system that efficiently plans land use while preserving vital habitat and biodiversity;
- Undertaking measures that improve the economic and ecological sustainability of transport;
- Strengthen the broad horizon of policy setting for sustainable development, i.e. without losing sight of environmental sustainability, look beyond it and treat economic and social sustainability as equally important aspects in transport policies;
- The new railway line will lead to a reduction of negative externalities in result of the modal shift of passenger and freight traffic from road to rail. These externalities are mainly the reduction of road accidents, air pollution, CO₂ emissions and noise.
- Space protection and reservation for future strategic transport corridors, for which there are no transportation and economic arguments at present;
- Interconnection of the Republic of Macedonia and neighbouring countries, for the purpose of establishing links between Macedonian rail transport and other points.

Delivering an optimal solution can only be achieved if the issue is addressed in a cross-sectoral models. Planning and policy development outside the transport sector must take transport generation into account and provide the information necessary to find an optimal solution. Planners and policymakers must essentially decide how they want cities to look and how they want people and goods to be transported in the future. Transport policy is not some miraculous tool with which to solve a society's development problems. It must work in unison with national development programmes, physical planning, investment, economic and monetary policy, legal regulations and other areas. It must move in step with the implementation of these programmes and respond with vitality and responsibility to the changes taking place in society. We must all acknowledge that, in many respects, our quality of life depends on the success of our transport policy.

Conclusion

The undoubted favorable geographical position of the Republic of Macedonia and its complexity may lead to greater spatial and functional integration with its neighborhood and wider, through well

designed and systematic transport infrastructure. The greater integration of the Republic of Macedonia into European and global transportation developments requires maximum utilization of its geographical position towards direct surrounding. The fact that one of the most important transportation corridors, connecting Scandinavian and Baltic regions, through the countries of Central Europe with the countries of the Near East i.e. South Africa, passes through the Country deserves particular respect.

In the future the especially point will be taken to:

- Development of transportation system that will minimize harmful impacts of the traffic on environment and contribute to an improved quality of living in urban and rural areas of the country;
- Establishment of transport intermodal centres, as main contact points among different transport types, as a precondition costeffective transportation system (Goods transportation via air, railway and combined goods transportation);
- Dynamic implementation of infrastructure, through application of priorities based on transport and economic criteria, in line with strategic determinants of the country when transportation acts as initial factor of the overall development;
- Specific development of tracks passing through or by major urban agglomerations;
- Increase of pass through capacity of the Macedonian transportation system, its connection with neighbouring countries and joint connection to European systems and trends;
- Maximum utilization of traditional roads when locating the main transportation corridors; Adjustment of general tracks positioning to natural relief characteristics;
- Adaptation of transportation network to the main generators of future movements of passengers and goods transport;
- Minimization of transportation time and costs;

It should be noted that external connection of the country will be based on defined communication corridors in line with international conventions and agreements, reflecting our orientation towards European and Balkan commitments towards economic and technological communications. The level of transport system development and its integration into corresponding European systems and trends will determine the directions and communications of people and products, as well as capital and information flows within the country and beyond. Development is expected to include expansion, improvement and modernization of communication subsystems in the Republic of Macedonia. Integrated combined transport for fast transfer of goods by modern methods and technologies is expected to develop in relation to the development of supportive goods transportation centres. To this end, synchronization among terminal blocks for land and air traffic should be established and demands for transit, import-export and internal goods transportation harmonized.

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