THE ROLE OF THE ROAD NETWORK OF BOSNIA AND HERZEGOVINA IN THE REGION

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Abstract

Transport is integral part of many human activities. No region, community, state or even continent could be developed without transport. The importance of the Balkan region, including Bosnia and Herzegovina, lies in the fact that it represents the contact zone between the Western and Eastern Europe as well as between Scandinavia, Middle East and Northern Africa. The countries in this area have, therefore, the decisive importance for the respective transit traffic, which is not reflected fully as regards their transport infrastructure. The existing road and railway connections are insufficient; the longitudinal communications are unsatisfactory to cope with existing and especially future traffic volumes. It is extremely important for countries in the region to co-operate as closely and as efficiently as possible in harmonizing the transport policies and exploitation elements of their traffic systems.

Keywords: Transport; Corridor; Road network; Transport strategy
Topic area: G6 Transport in the South East Europe Region

1. Introduction

A segment, which every society could not function without, is transportation and transportation infrastructure. Transport is an economic activity with great external costs and usually is a pre-condition of development or its important accelerator. It is possible to speak about economical, social and political role of transport infrastructure. Economical role is the biggest, having in mind production, distribution and consumption of goods and services. Transport shapes-creates location of economic activities, size and development of urban areas and unique lifestyle and tempo of living.

The ongoing market globalization makes transport a decisive factor for the future of certain regions. Transport infrastructure became the basis and critical factor for internationalization of regional economies. Lack of connections or the entire transport infrastructure network means a significant reduction in possible productivity. Therefore, enormous efforts of the European Union (EU) to invest in infrastructure, in order to provide relatively equal competitive advantages for all the regions, should not be a surprise at all.

The Pan-European transport corridors have been defined at a series of Pan-European Transport Conferences, the first of which was held in Prague in 1991. These multi-modal corridors are also called the Helsinki corridors, named after the Third Pan-European Transport Conference held in Helsinki in 1997. The Pan-European corridors in the region form the backbone of the intra-regional network (Figure 1). These corridors have had considerable impact on the thinking and

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the establishment of priorities in the transport sector, not only in Central and Eastern Europe, and they have helped bring some coherence in long distance communication.

Figure 1. Pan-European corridors in the region (REBIS, 2003)

The corridors have been generally accepted in all the countries of the region. There is general awareness of the corridors and their significance, and the corridors have been particularly guiding in relation to transport investment by the EU and the European Investment Bank.

However, there is also the need to invest in a more fine-meshed regional network in the Balkans. Therefore, the 2001 European Commission supported Study, “Transport and Energy Infrastructure in South East Europe”, defined the strategic transport networks in the region on which short-term investment projects for interurban transport should mainly concentrate. The networks cover the main road and rail routes, inland waterways and river ports, seaports, airports and terminals. The strategic networks were presented at the conference in Tirana in May 2001 in which the members of the Stability Pact, the beneficiary and surrounding countries, the International Finance Institutions and other donors participated. The networks were endorsed at the conference in Bucharest in October 2001.

TIRS (TIRS, 2002) elaborated on these networks with the view to “establishing the basic inter-regional transport infrastructure networks needed in the Balkan region, in line with the TINA exercise”. A number of modifications to the EU strategic networks were proposed, and some links were added which are of importance to the cross-border communication in the region.

At the European Council meeting of December 1994 in Essen, it was decided to give priority to the implementation of fourteen large Trans-European Network transport projects. The latest update of major transport routes in the EU was proposed in October 2003. The development of Trans-European Networks for Transport (TEN-T) for the different transport modes constitutes an important part of the implementation of the Commission's Common Transport Policy with the priority objective to increase the interoperability of national networks. The TEN-T should be established gradually by the year 2020, by integrating land, sea and air transport infrastructure networks throughout the Community. The TEN-T for roads is covering the entire Europe and several important TEN-T connections run through the region from north to south and east to

west, but none of the proposed links goes through B&H, obviously as a consequence of not being the member or candidate country, and thus treated as a country without important transport interest for Europe, which is very indicative.

In spite the fact that all land links between Europe and Middle East are leading over the South-East Europe (corridor Northwest-Southeast), there are some discrepancies in the priorities of the countries, and even within some of the countries, and consensus will have to be reached in a number of cases.

2. Location and administrative structure

Bosnia and Herzegovina (B&H) is a mountainous crossroad country set at the western part of the Balkans, sharing borders with Croatia to the north, west and south and with Serbia and Montenegro to the south and east. The northern part of the country, along the Sava river offers rather favorable conditions for the transport infrastructure corridor alignment. On the contrary, the middle and southern mountainous part of the country, with very strong continental climate, is the very severe environment for infrastructure corridors. The 20-kilometre coast-line on the Adriatic Sea, near to the Croatian port of Ploce, is the only access to the sea.

The General Framework Agreement for Peace in B&H was initiated in Dayton, USA on November 21, 1995 and signed in Paris on December 14, 1995. B&H consists of two entities and the Brcko administrative district. The two entities are the Federation of Bosnia and Herzegovina (FBH) and the Republic of Srpska (RS).

Under the Constitution, the state-level government is responsible for: foreign policy, foreign trade policy, customs policy, monetary policy, finances of the state institutions and for international obligations, immigration, refugee and asylum policy and regulation, international and inter-entity criminal law enforcement, establishment and operation of common and international communications facilities, regulation of inter-entity transportation and air traffic control. Additional responsibilities can be assigned to the state if both entities agree.

The entity governments are responsible for conducting all affairs not expressly assigned to the state. The FBH government consists of 16 ministries, with 12 being based in Sarajevo and 4 in Mostar. The FBH governmental administration is sub-divided into 10 cantons and also municipalities, which are empowered locally to implement various policies and regulations. The RS government consists of 16 ministries based in Banja Luka. The RS sub-unit of governmental administration is municipalities.

Three transport-related functions are assigned to the state: establishment and operation of common and international communications facilities, regulation of inter-entity transportation and air traffic control. All other transport functions belong to the entities. In addition, Brcko handles its own transport affairs. The state-level institution for transport is the Ministry of Transport and Communications (MOTC).

Each entity has its MOTC for overseeing and managing road, rail, water and civil aviation transport, with the exception that the air traffic control function is performed at state level by the Department of Civil Aviation under the Council of Ministers. Furthermore, in FBH each canton has its own MOTC.

In the RS, the Road Directorate manages main and regional roads, and local roads are managed by municipalities. In FBH, main roads are managed by the Road Directorate, while regional and local roads are managed by the cantonal MOTCs. In some cantons the management of local roads is delegated to municipalities.

In addition, the third organization, named Joint Road Public Corporation (BRIC), has been established at the state level with the purpose to establish institutionalized co-operation among

the two entities in the field of road infrastructure and to provide for the taking of whatever decisions are necessary to ensure smooth, safe and regular traffic by road throughout the whole of B&H, including planning and development of road corridors, international freight transport, traffic safety strategies and road standards. Up to date, BRIC is not functioning for the number of reasons, political being the predominant one.

3. Road infrastructure

The declaration of independence of B&H at the end of 1991 was quickly followed by an exhausting war that lasted three and half years. The war completely shattered the economy and left extensive human and physical devastation. Large-scale transport infrastructure damage occurred as a result of the hostilities. Transport links leading to or near confrontation lines suffered the most extensive damage. Over 2,000 kilometers of the main road network were partially or totally destroyed including more than seventy major bridges. Most railway lines were rendered inoperable, public transport facilities and vehicles were damaged or run down and civilian aviation ceased to function. Transport institutions lost premises, records, staff and funds and, in many instances, were forcibly fragmented.

The international community pledged nearly US$ 6 billion, including funds for transport improvement programs which have understandably focused on the immediate alleviation of physical war damages and the re-activation of basic transport services and facilities. Thanks to international financial assistance, notably from the World Bank, the European Bank for Reconstruction and Development, United States Agency for International Development and the EU within the Emergency Transport Reconstruction Program, significant improvement of the road infrastructure has progressively been completed after the end of the conflict. This, however, does not necessarily mean that pavement and bridges are good enough to carry expected future heavy traffic. Thus, road rehabilitation of international trunk lines is still a first priority, including reconstruction and improvement of sections on Corridor Vc and construction of bypasses.

3.1. Road network length and condition

The composite main and regional road network in B&H extends over 8,620 kilometers. The main road network within RS extends over 1,760 kilometers and within the FBH over 2,020 kilometers. Of the total 3,780 main road kilometers, some 96 percent are asphalted; however, quality varies based on the amount of accumulated deferred maintenance prior to the war, impacts of the war, type of post-war rehabilitation and unique impacts such as road usage by heavy military vehicles. The regional road network totals some 4,840 kilometers, 2,720 thereof being in the FBH and 2,120 in RS.

Local roads, whose quality is often considerably below that of main and regional roads, offer an additional approximate 14,000 kilometers. Thus, the B&H road network encompasses a total of near 22,600 kilometers, all road categories combined (Figure 2).

The geometrical characteristics of the road network vary substantially, from narrow 2-lane roads with less than 7 m pavement in many areas to just a few kilometers of 4-lane roads and motorways. Generally, the roads have sufficient capacity to carry the present and estimated short- to medium-term increase in traffic, although some sections in and around cities are in need for capacity improvement. The road conditions are often poor due to several years of neglected maintenance and over 70 percent of the roads are in need of some form of pavement renewal or rehabilitation. In the short term, investments should, therefore, focus on this issue.

Figure 2. B&H road network (BiHTMAP, 2001)

With the exception of length and surface covering, there exist no records in B&H which contain up-to-date (cadastral information dates from pre-war times) and uniform information regarding road status, certainly not any systematic detail regarding surface and sub-surface conditions. Efforts have been initiated to create a database with a view toward establishing a maintenance management system and it is expected to have it in operation by the end of 2004.

3.2. International road corridors

Six European (E) roads pass through B&H which offer continuation to both Republic of Croatia and Serbia and Montenegro. These roads:

- E-59 (Croatian Border) Izacic-Bihac-Ripac-Uzljebic,
- E-65 passing through Neum,
- E-73 (Croatian Border) Samac-Doboj-Lasva-Sarajevo-Mostar-Doljani (Croatian Border),
- E-661 (Croatian Border) Gradiska-Banja Luka-Jajce-Lasva,
- E-761 Bihac-Petrovac-Jajce, Sarajevo-Visegrad-Vardiste (Serbian Border) and
- E-762 Sarajevo-Brod na Drini-Scepan Polje (Montenegro Border),

extend over 995 kilometers and are superimposed upon, and conform to design standards of, the main road network. Among the above routes, E-59 and E-65 are basically short transition routes between Croatia and B&H. The major E-roads in terms of network are the other four routes in the B&H context.

An important north-south corridor in B&H is formed by Pan-European Corridor Vc, whose designation was adopted at the Third Pan-European Transport Conference in Helsinki, 1997. Corridor Vc, the only Pan-European corridor located within B&H, links Budapest (Hungary), Osijek (Croatia), major cities in B&H (Doboj, Zenica, Sarajevo, Mostar) and port Ploce (Croatia). A direct intersection with east-west Pan-European Corridor X, featuring motorway-class facilities, is also made in Croatia, just north of the Sava river. Corridor Vc is seen as a critically important transport link for B&H. To the south, Ploce port is the country's main access point to the Adriatic Sea and maritime markets beyond. To the north, Corridor Vc offers direct

access to Central and Eastern Europe and, perhaps more importantly, the intersection with east-west Corridor X offers multi-modal (road, rail) access to Western Europe and, direction east, direct connection with Belgrade.

Corridor Vc coincides with E-73 road in B&H as the existing routes. However, the E-road network specifies not only motorway or expressway level, but also ordinary highways as part of their network. On the other hand, the Pan-European Network aims at higher level of highway development, which eventually aims at motorway or expressway quality of road infrastructure.

Figure 3. shows the E-road network and Corridor Vc in B&H as on the existing road network.

Figure 3. E-road s and Corridor Vc in B&H (BiHTMAP, 2001)

3.3. Road traffic volume and trip distribution

Traffic in the region dropped drastically during the 90'ies, but it is now slowly recovering. The current traffic volumes on the roads of B&H is below 10,000 vehicles per day, on the majority of links, and only few links, primarily those close to the capitals, have more than 20,000 vehicles per day. Freight transport is concentrated in the northern part of the country focusing on Corridor X in Croatia and on few links going to the south. There are some studies which forecasted strong increase in road transport in the coming years that will significantly change the modal split for land transport and the long-term capacity requirements of the network. Through the BiHTMAP study (BiHTMAP, 2001), extensive traffic survey and analysis was conducted. In analyzing the expanded data obtained from the roadside surveys, it was found that, in year 2000, some 125,100 daily long distance vehicle trips take place. The majority are by passenger cars (85.8 percent) with an average occupancy of 2.0 people. Buses represent 2.6 percent of vehicle trips (average occupancy of 17.1 persons), rigid (up to 3 axle) trucks 7.2 percent of vehicle trips and articulated (more than 3 axles) trucks 4.4 percent of daily vehicle trips. The general distribution of trips within B&H in the form of a desire line diagram confirms that major trip generation precincts include Sarajevo, Banja Luka, Mostar, Doboj, Zenica and Tuzla (Figure 4). The average trip length of internal long distance passenger vehicles is around 90 kilometers whilst that of an articulated truck is 125 kilometers.

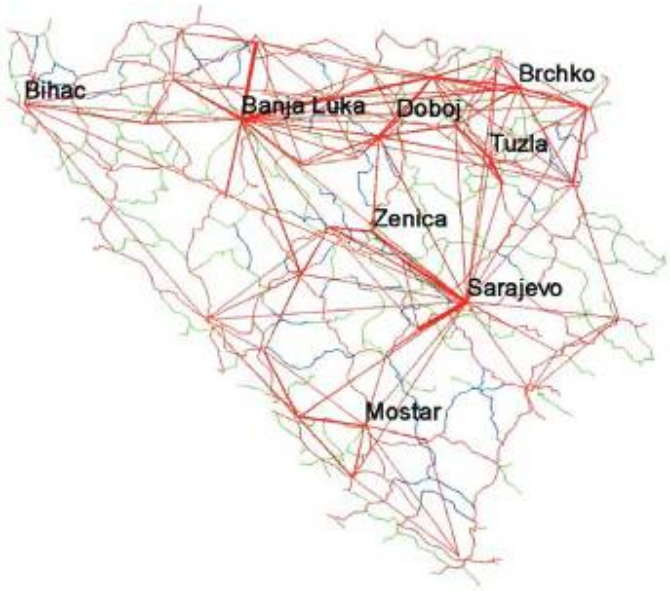

Figure 4. General distribution of internal trips (BiHTMAP, 2001)

There exists a pronounced interaction with adjacent countries. Strong linkages between Croatia and southern B&H are noted, as are linkages between northeast B&H and Serbia (Figure 5). On a composite basis, about 30 percent of daily vehicle trips have at least one trip end external to B&H. Of those external totals, Croatia and Serbia account for 40-45 percent each, trips direction Western Europe a further 12 percent and other foreign locations two percent. Not surprisingly, the highest representation of international trips is found among large trucks, that is, having more than three axles.

Conversely, the lowest incidence of international travel is found among the rigid truck population, that is, commercial vehicles of up to three axles. Trip demand was forecasted to year 2020 based on alternative economic growth scenarios. Under the high economic growth scenario, the total number of daily vehicle trips is estimated to increase from some 125,100 in year 2000 to 305,100 in year 2020. The latter total includes approximately 96,000 external trips, that is, trips with at least one trip end outside of B&H. The year 2020 projection of internal vehicle trip demand confirmed that demand among population and economic activity centers has increased and intensified from year 2000 levels. Year 2020 traffic was depicted in the form of a volume band diagram, with band width reflective of absolute volume. As shown (Figure 6), highest volumes (up to 40,000 vehicles per day, total both directions of travel) are expected to be encountered in vicinity of major population/economic concentrations as well as within Corridor Vc.

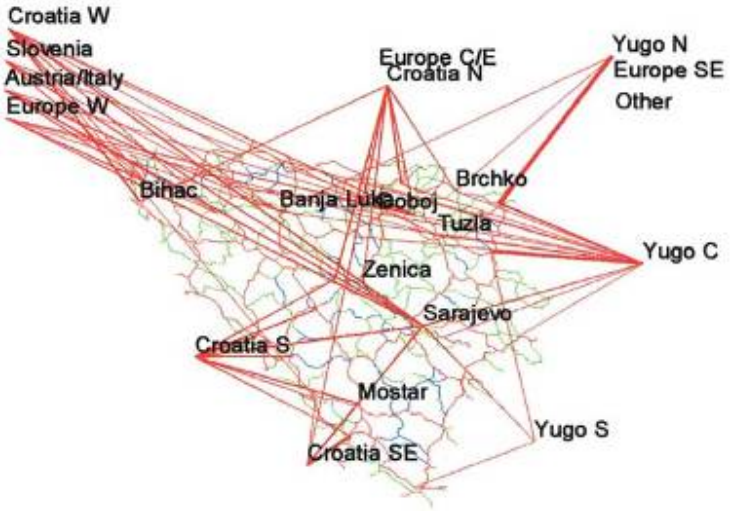

Figure 5. General distribution of external trips (BiHTMAP, 2001)

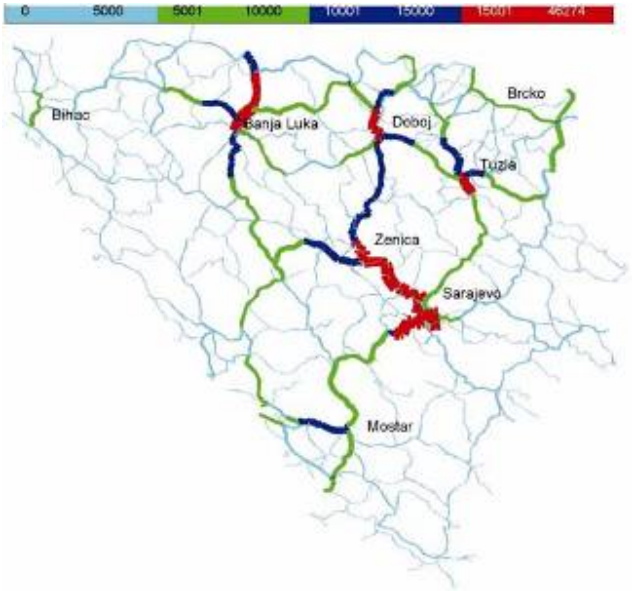

Figure 6. Traffic forecast for year 2020 (BiHTMAP, 2001)

Figure 6. shows there would be no major capacity problems to occur in the network, except adjacent to some urban areas. These urban issues should be addressed by area-specific studies.

3.4. Border facilities

The dissolution of the Yugoslav Federation led to the creation of over 5,000 km of new border line in the region and a shift in transport flows over previous border stations. In spite of the general decline in traffic over the past decade, this has led to long waiting times and unpredictable customs procedures at some stations, in particular for the transport of goods. The problems are largely related to regulatory and procedural issues, and several studies and projects address these. In B&H, there are number of unresolved border crossing issues.

Facilities are, in many cases, poor and the location of some border stations has not yet been settled. There are a number of border stations where physical improvements are required and

some of them are being considered under various programs. However, there are still several important border crossings with poor facilities and some waiting times (Vardiste (to Serbia), Scepan Polje (to Montenegro), Gradiska, Samac, Neum and Doljani (to Croatia)) left aside.

4. Transport strategy

Though the geographical location of the two entities calls for a common transport strategy, priorities in the transport sector differ significantly in some areas.

The most important transport corridors through B&H, as it can be seen from the trip distribution and traffic volume diagrams (Figures 4-6) are:

- Trans-European Corridor Vc, linking the Adriatic Sea and the Mediterranean Basin to Central and Eastern Europe and further, with an intersection with Corridor X, which provides connections to both Western Europe and Serbia and Montenegro and
- the trunk line parallel to Corridor X, between Croatia and Serbia and Montenegro, through Banja Luka, Doboj and Tuzla.

These corridors constitute the backbone of the road transport system in B&H. The biggest cities in Bosnia and Herzegovina (Sarajevo, Banja Luka, Mostar, Tuzla and Zenica) are located on these corridors, which are both dedicated to road and rail traffic. Thus, Bosnia and Herzegovina is endowed with strategic north-south and west-east transport links, essentially located on Corridor Vc or on the corridor parallel to Corridor X.

As a countrywide transport study, BiHTMAP gives its focus to the primary arterial network. The primary arterial network is sub-divided into two categories, Primary I and Primary II for highlighting relative roles and identifying an efficient primary arterial system for B&H. Among Primary I network, Primary I (International Routes) are defined as coinciding with the existing E-roads and Corridor Vc designations, which are shown as thick green lines in Figure 7. Primary I (International Routes) corridors consist of three major east-west links and three major north-south links. The remaining green lines represent other Primary I corridors.

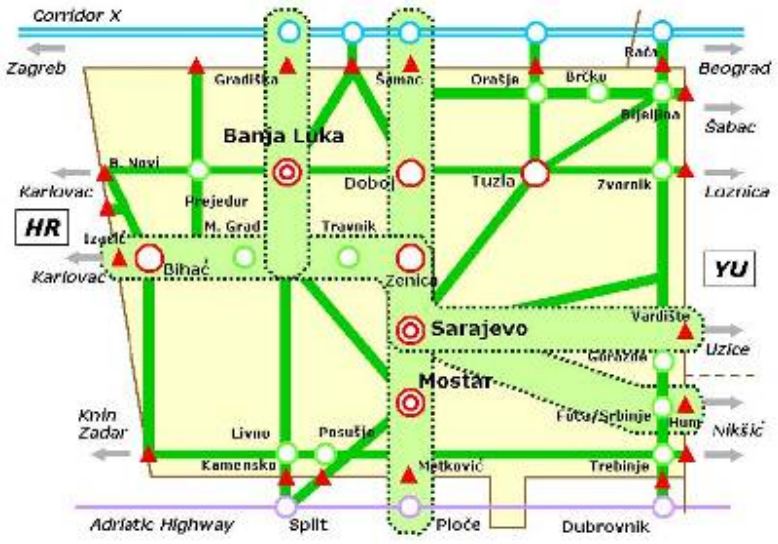

Figure 7. Priority transport corridors (BiHTMAP, 2001)

Figure 8. shows Primary I (International Routes), Primary I and Primary II corridors on the actual network where these corridors will share some part on the existing roads.

Figure 8. BiHTMAP network priority corridors (BiHTMAP, 2001)

On the other side, REBIS (REBIS, 2003) focuses on the development of regional transport infrastructure which interlinks the countries of the region and links them to the rest of Europe. A core network of regional importance was therefore proposed. This proposed core network includes the Pan-European corridors in the region. It includes the main road and rail connections between the five capitals of the region and the cities of Banja Luka, Podgorica and Pristina. It also links these cities to the capitals of the neighboring countries and connects to the strategic ports at the Adriatic Sea. The network includes the river Danube, the ports of Durres, Rijeka, Split, Dubrovnik, Ploce, Bar and Vlore, and the airports of the five capitals and of Banja Luka, Split, Dubrovnik, Nis, Pristina and Podgorica. For presentation purposes, the road links of the core network have been divided into corridors and routes (Figure 9).

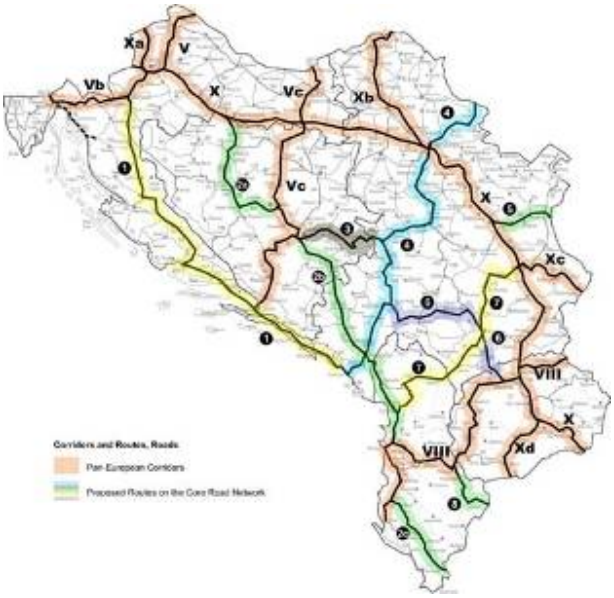

Figure 9. Proposed core road network (REBIS, 2003)

The network comprises some 6,000 km of primary roads. It is slightly denser than the corresponding TINA network which was developed for countries of Central and Eastern Europe which reflects the fact that the countries of the region are smaller and thus the capitals to connect are closer to each other.

The RS Road Directorate supports the two connections between corridors Vc and X proposed by the TIRS study:

- the eastbound connection in Maglaj (20 km south of Doboj) to Tuzla, Brcko and beyond to Croatia and Serbia and Montenegro and
- the westbound connection in Doboj to Banja Luka and north beyond to Croatia.

This is consistent with the importance of transport corridors in B&H, as well as with the study of internal and external trips distribution.

The biggest cities in Bosnia and Herzegovina will thus be serviced by this scheme:

- Mostar, Sarajevo, Zenica and Doboj on Corridor Vc,
- Tuzla and Brcko on the eastern branch and
- Banja Luka and Prijedor on the western branch with international connections to the Balkans.

Improvement and development of these links will open great possibilities of economic development for the regions of Eastern and Southern Croatia and the whole of B&H, as the majority of services and production industry, and population (around 75 percent) is located in the attraction area of the corridors. The corridors also provide the shortest link for the passengers and goods transferring from Europe to Adriatic Sea. When discussing about freight transport, it is necessary to point out that the development of the southern part of Corridor Vc, from Mostar to Ploce, will be strongly influenced by the Croatian transport policy decision to support the port of Ploce. Having in mind the leading role of Kopar port and the next important ports of Rijeka and Bar on the east cost of Adriatic Sea, it is very hard to believe that improvement and development of Ploce port will be supported by the Croatian government as the short- or medium-term objective.

Beyond this scheme of development, FBH supports two routes coinciding with E-roads E-761 and E-762, although these corridors are not completely reflecting transportation needs and distribution of economic capacities, human settlements and movements of goods and passengers. This is especially emphasized for the eastbound connections from Sarajevo to Serbia (Vardiste) and Montenegro (Scepan Polje) where the traffic counts are showing numbers less than 2,000 vehicles per day on the annual basis. But, as a longitudinal communications, missing parts of these routes have to be developed to successfully cope with future traffic demand of direct diagonal road connection.

It has been broadly recognized that the enhanced economic growth needs to make sure the international transport linkages with neighboring and European countries both for the FBH and the RS economies. A strong attention, therefore, should be paid to how the internationally integrated transport network system should be functionally and effectively formed, which is one of the significant goals of the transport strategy. This context is important in seeking sustainable development scenarios particularly for not only roads but also railway, inland water transport and air aviation systems, because these transport modes, otherwise, could not function.

For this purpose, the transport sector should be reliable and price-competitive in freight transport and functionally linked with the European and international markets. In this sense, stabilization and functionalization of the entire transport system must be a focal strategy. At the same time, this would require massive investments to shape the infrastructure system. Definite

legislative policy guidelines to mobilize alternative financial resources need to be provided to attract more private and other type investments.

Some calculations of road investment requirements have been made for the country and compared to the estimated accumulated GDP up to 2020. The calculations show that required investments will be between 1.5 and 2.5 % of total GDP. This indicates that investment plans are within the affordable range even though the actual timing of the investments might imply higher proportions of investments to be undertaken in specific years.

The traffic volumes on the various links will vary considerably and the development of the links should take this fully into account. Some links will have to be developed into full motorway standard, whereas other links may remain 2-lane highways for a longer period. One of the main activities in the forthcoming period is to prepare investment plans for the development of the network in the short and the medium term, with particular emphasis on projects, which are suitable for international co-financing.

Efficient information systems are of key importance to the management of the road sector. Such systems require up-to-date information about the features and condition of the infrastructure as well as traffic and accidents. There is a need for improvement in this area, and financial and technical assistance would be valuable.

5. Future trends and expectations

The European Commission sets forward three main focal points in their transport policy, summarized in Figure 10.

Figure 10. Focal points of the common transport policy

The first focal point is the elimination of remaining barriers, via the facilitation of border crossings, reduction and standardization of document flows (including the use of paperless communication) and the development of international networks (Trans-European and Pan-European Networks).

The second important target is the protection of the environment and the quality of life for citizens. The main policy tools in this respect are the introduction of emission standards, the creation of a citizen's network and the promotion of environment friendly transport modes. Finally, the third important point of attention is the improvement of transport systems where the attention is focused on the transit points and the use of modern technology.

5.1. Intermodal transport system

The realization of these objectives is possible through the implementation of the intermodal transport system approach. Intermodal transport systems will ensure that a passenger or a consignment arrives safely, switching, if necessary, from one mode of transport to another in

such a way that at each stage of the journey he or it uses the form of transport, which is the most efficient and best suited to the purpose. This approach will also contribute to fair pricing in transport, with the user paying for what he actually uses, which is not what happens today.

In the long-term, the transport system in B&H will have to evolve towards an integrated system that efficiently links all transport modes, using a combination of combined and intermodal transport solutions. A critical development will be the creation of efficient transit points and the application of state of the art information technology to meet the European standards and norms.

The development of intermodal and combined transport in B&H is not limited to specific modes. It is a trading and mobility issues in which rail, water, air and road are called on to contribute to the optimization of the whole with new transport services and information technologies to improve/optimize the utilization of the existing infrastructure capacity.

A set of locations has been proposed (BiHTMAP, 2001), where intermodal transport terminals (ITTs) and combined transport terminals (CTTs) should be developed. In a definition, the ITTs (blue circles) will link road, rail and river transport, while the combined transport CTTs (red circles) function to link road and rail transport on the major land-based corridors (Figure 11).

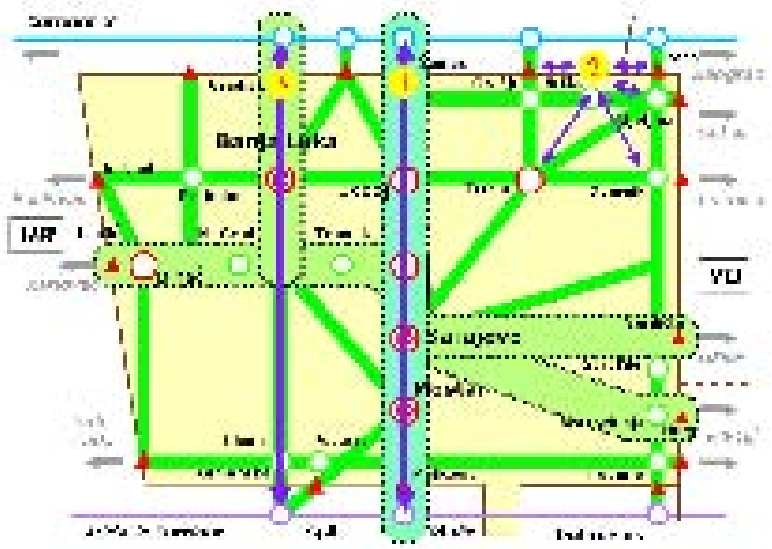

Figure 11. Intermodal transport network with transfer terminals (BiHTMAP, 2001)

The intermodal concept for B&H will focus on development of ITTs along the Sava river with three major intermodal transfer points, notably the ports of Brcko, Samac and, if economic development demands, the port of Gradiska. The CTTs are on combined transport, efficiently linking the road and rail infrastructures on major connections, both north-south and east-west, namely, Mostar, Sarajevo, Doboj, Banja Luka, Tuzla, Zenica, Zvornik and Novi Grad.

On an international perspective, the intermodal transport system will be inter-connected with the three relevant Pan-European transport corridors, namely corridors VII, X and Vc. In line with these European linkages, three intermodal transport sub-systems should be noted, namely:

- the Sava river intermodal transport sub-system (as an East-West Axis),
- the combined transport Corridor Vc sub-system (as the eastern North-South axis) and
- the combined transport Kamensko-Gradiska sub-system (as the western North-South axis).

These three intermodal transport sub-systems shall function as enhanced distribution axes for international and domestic freight movements in maximum use of the vested transport infrastructures.

In the short-term, large investments should be avoided in order to keep costs at a competitive level. Focus should be on the development of coherent policies which could include liberalization of combined transport operations, fiscal incentives in favor of combined transport, exemption from tariff regulations, provision of credits for the development of combined transport, etc. The activities should also be focused on development of market strategies which will lead to a concentration of traffic on a reduced network. In the short- and medium-term, the transit market is the most promising one, given the strategic geographical position in the region.

5.2. Road transport operations

Beside intermodal transport, inter-city and long distance bus as well as truck activities are seen as being particularly relevant. For example, in case of trucks, the role of road-based cargo vehicles will become increasingly important in future. It may readily be accepted that inevitable changes in the size and nature of demand as reforms take hold in B&H's economy will be increasingly shouldered by the road transport system. Over time, these changes will reinforce a continuing shift in market share to road transport. Reliability, speed and predictable service will become more important to customers in a market economy than movement of large volumes at low cost in response to pre-determined plans, as was largely the case in the Yugoslav pre-war economy. Further, expanding privatization will offer extensive opportunities for small-scale operators to quickly enter the new economy by purchasing or leasing a vehicle and providing commercial transport services.

The existing administrative and operational framework for road transport operators is complex, controlled and cumbersome. Various jurisdictional hierarchies ranging from municipal to cantonal, Chambers of Commerce, entity and state are involved. This can be very intimidating, confusing and contradictory for even knowledgeable operators, not to mention possible new external private sector participants.

In its most basic sense, the structure of the inter-city and long distance truck/bus operations strategy has to strive to put as much of the sector's assets and functions as possible in a deregulated, competitively structured private sector, in which determination of prices and investment is left to the marketplace. The government's role would then be limited to one of setting policies to ensure that the transport market place works effectively, that transport operations are undertaken safely, that environmental norms are observed and that services are available to all users on an equal basis. Related measures to support the strategy include:

- improvement of border crossing facilities in terms of procedures and facilities;
- derivation of uniform, consistent and transparent fiscal, taxation and banking structures, considerations of vital importance to providers of both domestic and international cargo and passenger services;
- transition of government's role from that of being a provider of services to one being a supervisor of services, that is, sort of a "watch dog" and facilitator;
- clarification of the roles and functions of the participants, including the combined transport operators, the railways and the ports, and improving relations between them;
- development of an efficient and integrated multi-modal transport system;
- accelerated upgrading of primary road segments and corridors;
- replacement of aged fleets of trucks and buses, with an emphasis on energy efficiency and environmental protection as part of the EU standards for these vehicles;

- introduction of user pay principles, to include “fair share” contribution for road maintenance, in accordance with the practices of EU countries.

Trade practices remain an economic cornerstone of international relationships and, as indicated previously, an important element in European integration. Trade practices between B&H and other European states are based on a variety of special arrangements and agreements. The enhancement of those relations, in terms of both practices and volumes, depends not only on bilateral relationships, but, in a larger sense, on the status of the Balkan region as a whole. In addition to political and legislative constraints, B&H, in isolation, is likely to generate only modest cargo and passenger demands when compared to other East and Central European states whose size is both larger and geographically closer to Western Europe. This, in turn, is likely to dampen the desire of major European players in the transport industry of intensifying/extending services to/from B&H. Given the small size of the countries in the region and, in particular, the limited potential for combined transport, it is important that the countries cooperate closely within these areas. “Critical mass” in transport demand must be enhanced via regional consolidation, thus catalyzing larger, more concentrated, shipments to/from Western Europe.

6. Conclusion

Without any doubts, Pan-European transport corridors present minimum of transportation infrastructure required by the EU. In the two decades time horizon in the future, the entire B&H transport system would and/or should be functionally integrated in the Pan-European Network and play part of significant roles to get along with the European economic growth as well as the B&H economy as a whole. As an ultimate goal, B&H shall be a member country of the EU and the transport strategy should view the goal.

According to this, the technical/safety standards must be harmonized countrywide as well as strategic plans formulated for international and inter-entity routes. In the future, the corridor development should follow the existing network, that is, the trunk line Corridor Vc and the routes parallel to Corridor X.

The road network of B&H is regional in nature, and the development of the network, therefore, requires regional dialogue and co-operation. Also the establishment of efficient transport systems, particularly in the railways and combined transport sectors, requires co-operation between the countries of the region, since none of the countries have the sufficient size or market potential required for such efficient systems. A regional dialogue was established, on the basis of pre-war contacts and friendship, in the form of high-level meetings, seminars, etc. However, previous experience shows that the efficient implementation of regional networks requires, in particular (REBIS, 2003):

- political commitment among the countries involved,
- the establishment of a monitoring mechanism, in the form of a steering committee and a secretariat and
- a shared technical back-up facility, preferably with financial support from international organizations.

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