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Conference Paper

Croatia on the move: Heritage, challenges, limitations

38th Congress of the European Regional Science Association: "Europe Quo Vadis? - Regional Questions at the Turn of the Century", 28 August - 1 September 1998, Vienna, Austria

Provided in Cooperation with:
European Regional Science Association (ERSA)

Suggested Citation: Pasalic, Zelimir (1998) : Croatia on the move: Heritage, challenges, limitations, 38th Congress of the European Regional Science Association: "Europe Quo Vadis? - Regional Questions at the Turn of the Century", 28 August - 1 September 1998, Vienna, Austria, European Regional Science Association (ERSA), Louvain-la-Neuve

This Version is available at:
https://hdl.handle.net/10419/113481

38th European Regional Science Association - Congress - 1998

August 28 - September 1

Vienna - Austria

Europe Quo Vadis - Regional Questions At the Turn of the Century

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CROATIA ON THE MOVE - HERITAGE, CHALLENGES, LIMITATIONS

Abstract

The efficiency of transport - infrastructure systems in transition countries depends more frequently on economic than on technological limitations. Their development and operation is often faced with distortions in the transport - infrastructure markets, i. e. with economic and non - economic effects of infrastructure. The national interests of integration, development and revitalization of Croatian regions, as well as full integration of Croatia into European environment, require systematic transport - infrastructure strategy and policy, which cannot be realized fast and easily. It is obvious that these are challenges both for this generation and the coming ones. This work discusses the basic issues related to this framework.

1. INTRODUCTION

On the verge of the twenty first century, in terms of the chosen topic we can state three constants for Croatia:

1. International transport-geographical reality in relation to the Euro-regional environment;
2. National-regional transport-geographical reality;
3. Globalization processes requiring permanent participation of Croatia in the "global life".

The nineties have brought the following:

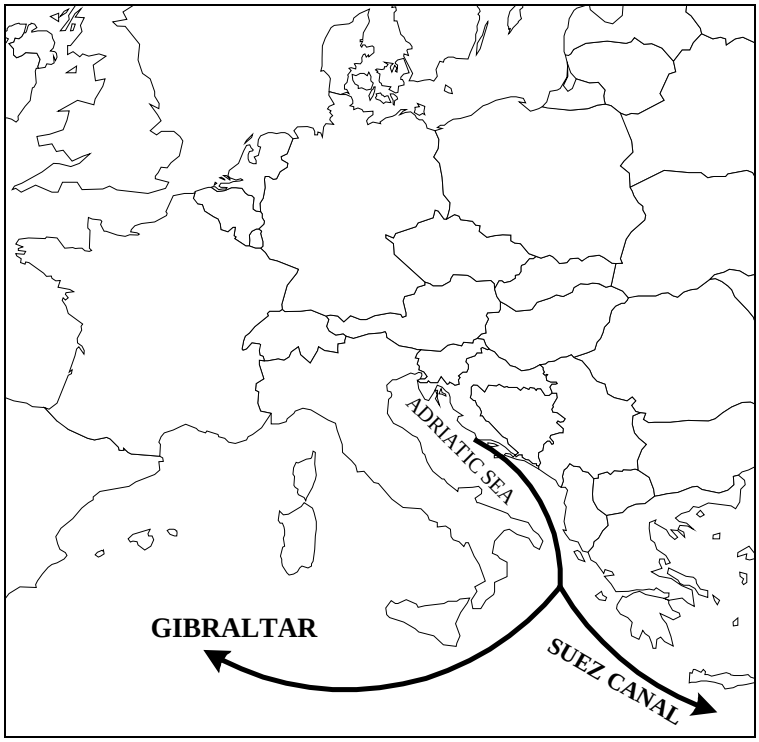
1. Croatia's independence after the breakdown of ex-Yugoslavia;
2. The 1991-1995 war with enormous human and material losses with serious impact on development;
3. The processes of transition from post-socialist into democratic and market society with referential goals achieved by Austria.

This starting framework is characterized by heritage, limitations and challenges determined by Croatian economic, social, political, physical, environmental, regional, national and global life. Therefore let us get into detailed analysis of this developmnet segment: Croatia on the Move — Heritage, Limitations, Challenges.

2. TRANSPORT - GEOGRAPHICAL REALITY OF CROATIA

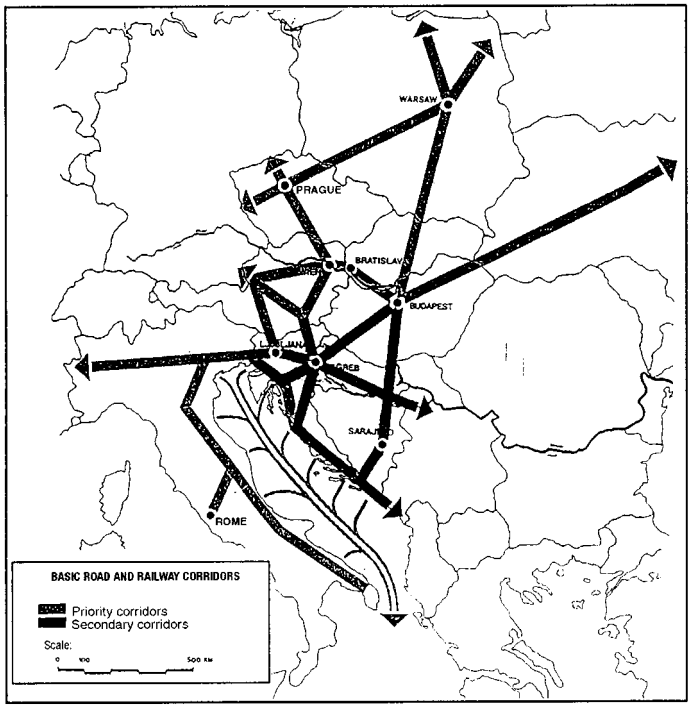
Croatia is a Central European, Danubian and Mediterranean country, as can be clearly seen in Fig. 1 (Statistical Yearbook of Croatia 1996).

Fig. 1. Position of Croatia in its European and Mediterranean environment



Croatian territory bridges the area between Europe, Africa and Asia. Croatian sea ports on the eastern coast of the Adriatic are important for the international sea transport north of the Suez Canal. The main air corridors for European and intercontinental air transport go over Croatian territory and so do European road and rail corridors (Fig. 2). The rivers Sava and Danube and the planned canal Vukovar - Slavonski Samac will improve connections between the Adriatic and the North Sea. The Adriatic pipeline from Omisalj from the Island of Krk (near the port of Rijeka) leading to Croatian hinterland and to Central and North-Eastern Europe is important for the international oil transport. Therefore, transport between European West and East, North and South uses, and is likely to use to a considerable extent transport corridors of Croatia. These corridors are partly equipped by transport infrastructure, but to a greater part they are to be modernised in accordance with the standards of developed European countries. Only the modern technological equipment will provide great chances for development of international trade and tourism in Croatia, in Mediterranean Basin, in Europe and in the world. However present and the future development of the Croatian transport system has to comply with the standards of the sustainable development to the greatest possible extend.

Fig. 2. The main internal and international continental transport corridors of Croatia



Source: J. Padjen - F. Rotim - V. Ivanko: Contribution to the Strategy of Road Transport Development, *Suvremeni promet*, No 3-4, 1996, p. 201

The physical form of Croatia has enabled two longitudinal corridors:

1) continental or Sava - Danube in the direction (Austria - Italy) - Ljubljana - Zagreb - Belgrade - ..., and

2) Adriatic in the direction Italy (Triest) - Slovenia (Koper) - Rijeka - Zadar - Sibenik - Split - Ploce - Dubrovnik - (Mnotenegro - Albania)...,

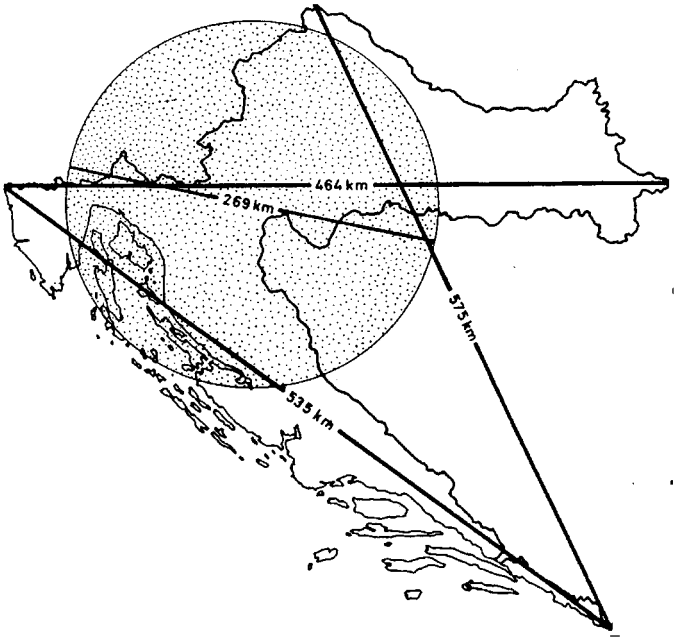
The third corridor is

3) transversal linking the two longitudinal corridors i.e. the continental and the Adriatic Croatia and continuing towards Central, North and West Europe, and by sea towards Italy, the Mediterranean and the world routes. (Fig 2).

By its surface Croatia is a comparatively small country (56610 sq.km and 4,8 million inhabitants), but its physical boomerang-like form causes such distances between the extreme parts of her territory which are twice as long as the diameter of a circle of the same surface. (see Fig. 3) Due to this Croatia has to use the territory of Bosnia and Herzegovina in order to connect efficiently central and eastern parts of Panonian Croatia with central and eastern parts of Mediterranean Croatia (the cities and ports of Split, Ploce and Dubrovnik). That is also the reason for the importance these

parts of Croatia have for international transport communications of Bosnia and Herzegovina. However, this shape makes construction, maintenance and use of transport infrastructure enormously expensive, i.e. it makes transport costs within national economy comparatively more expensive than those of e. g. Austria and Slovenia.

Fig. 3. Relationship between Croatian Physical form and the circle of the same surface



Source: J. Roglic: Aspekti prometnog valoriziranja Hrvatske; in: Naucno savjetovanje "Prometna valorizacija Hrvatske", JAZU, Zagreb, 1971, p. 29.

These facts and globalization processes, especially the processes leading to European Union impose great challenges and responsibilities on the present and future generations of Croatia.

3. HERITAGE AND LIMITATIONS

It is indisputable that Croatian transportation system was significantly improved in the period from the World War II to 1991 when she become independent. Improvements were visible on the international, national, regional and local level: the continental transportation corridor along the Sava valley (Vienna - Ljubljana - Zagreb - Belgrade...), connections between the continental and Mediterranean Croatia were modernised, the

existing roads, railroads and ports were improved, new airports built, telecommunications established. E.g. Zagreb was connected to Rijeka by electrified railroad, the port of Ploce was built and connected by rail and road with Sarajevo and farther to Vrpolje - Hungary. The so called Adriatic Tourist Road (ATR) was build along the coast in the direction Triest - Rijeka - Zadar - Sibenik - Split -Dubrovnik - Montenegro - Albania. Airports were built in the Adriatic towns of Pula, Zadar, Split, and Dubrovnik, and on the islands of Losinj and Krk, etc.

Still the long term transportation policy and economic policy in the ex-Yugoslavia has to be severely criticised, particularly from the viewpoint of the Mediterranean Croatian region and its interest in terms of sustainable development:

1) The continuous conflict between the continental and Mediterranean mentality in ex Yugoslavia kept putting off construction satisfactory of transport networks connecting the continental and Mediterranean Croatia. The agents of economic policy and transportation policy took a long time making decisions in equipment of the longitudinal corridor, which had never been completely finished. Due to this all the other transportation corridors were more or less neglected. The main incentives concerning transversal corridors were not coming from the official circles but from those living in the coastal area.

2) The inherited road and railroad network cannot satisfy the current needs for internal and international communications, since due to its obsolescence it is incompatible with the transportation system of Western Europe.

3. Port facilities exceed the traffic needs to a great extent. The main causes for this lie in the limitations of the road and rail communications to the ports and slow adjustment in terms of staff, technology, space and organisation. Small ports and marinas are not exploited to full capacity and therefore are not profitable and keep declining.

4. Airports in coastal areas offer services that are often affected by poor land and sea transport communications with the areas gravitating to them. Some of them are a threat to environment and historical monuments (e.g. the Split Airport). Seasonal oscillations are such that the airports are congested during the summer months (July and August) and insufficiently utilised throughout the rest of the year. The situation grew even worse during the war (1991 - 1995) because tourist trade was practically eliminated. The only exception was the Split Airport which played an important logistic role during the war.

5. The general problems hampering transportation were caused by:

a) mislocation and poor standards of infrastructure facilities construction

b) poor maintenance of infrastructure

c) poor management of infrastructure.

There are other problems contributing to the above mentioned ones causing notable inability of the Croatian transportation system to adjust to the norms and standards existing in EU and other developed countries. Naturally, this is a serious limitation for any kind of Croatian integration in to European and Mediterranean transportation system.

The problems described above cause consequences in inadequate satisfaction of transportation needs, short duration of infrastructure facilities and systems, poor quality of services, material losses and delays in economy, environmental degradation in urban and rural areas, decline of living standard due to unsatisfactory quality, high costs and poor safety of transportation services.

Investments into economic infrastructure in Croatia are characterized by variability (which generally is the feature of infrastructure), with comparative shares in the total investments and the GDP similar to those of most developing countries, i. e. they are comparatively high (Table 1). However, all investments, these ones including, were sharply decreased due to transition and war crises during the nineties.

Table 1.
The share of investment in economic infrastructure in the total investments and in GDP in Croatia, 1988 - 1995 (percentages)

	1988	1989	1990	1991	1992	1993	1994	1995
Total investments	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Non-infrastructure investments	68.4	75.4	69.5	61.0	66.2	50.1	48.9	52.1
Infrastructure:								
Energy supply	12.5	9.8	5.9	13.8	10.6	12.7	19.3	16.2
- electrical energy	(9.8)	(8.0)	(3.2)	(9.4)	(5.5)	(7.1)	(14.7)	(12.8)
Water supply	0.5	0.3	0.6	0.3	0.4	1.7	1.6	3.9
Transport & communications	18.6	14.5	24.0	24.9	22.8	35.5	30.2	27.8
Total economic infrastructure	31.6	24.6	30.5	39.0	33.8	49.9	51.1	47.9
The share of economic infrastructure in GDP	4.0	2.8	2.9	3.9	2.8	4.5	5.8	4.9

Sources: Statistical yearbook of Croatia, 1990 - 1997.

Within the Yugoslav state Croatia underwent a deep transition crisis which was continued after the indenpendence. In 1991 aggression worsened these processes. The

vast direct and indirect material losses caused by the war are estimated at 27 billion US dollars, of which about 13.8 billion or 51.34% were incurred in economy. The losses in economic infrastructure make about 34.3% of total losses in economy, of which 16.1% refers to transport and communications, 16.1% refers to energy supply, and 2.1% refers to water supply. Of the total war losses in economic infrastructure of about 4.74 billion US dollars, 47.0% refers to transport and communications, 47.0% refers to energy supply, and 6.0% refers to water supply (Pavković, 1997, pp. 60-72.). It is a lot for a small country in transition. Some financial estimations also show that e.g. in the period of 1990 - 1993 indirect losses in economy amounted to the loss of an annual average GDP of Croatia - or over 109% of an annual average GDP (Rozga, 1996, pp. 1-2.). However it must be stated that the total war loss (direct and indirect) had not been completely estimated neither until the end of the war in 1995, nor later. Therefore these data are neither complete nor final. Nevertheless these processes have limited and/or completely stopped investment into economic development. This drastic real decline of investment made the relative investment in infrastructure insufficient in relation to the vast development needs.

Enormous decline in economic activities and in transport and communications during the 1991 - 1996 are shown in table 2.

Table2. Annual rates of changes in GDP in relation to the pervious year

(Estimate in 1990 constant prices)

	1990	1991	1992	1993	1994	1995	1996
Total	- 7.1	-20.6	-11.7	- 0.9	0.6	1.7	4.3
Transport and communications	-2.1	- 20.3	- 15.0	- 4.8	0.1	2.8	5.2

Source: Statistical yearbook of Croatia - 97, p. 167.

The level of GDP in 1996 was 74.20 % of the GDP in 1990. The GDP in 1996 in transport and communications was 69.70 % of the same item in 1990. GDP per capita amounted to 5,106 US dollars in 1990, while in 1996 it amounted to 4,243 US dollars. Annual investments, for example, in 1996 were only 25% of investments in 1989. In the period 1991-1996, 23 % - 36 % of these reduced investments were allotted to transport and communications, which is considerably above the relative level of 20% - 25% recommended for the developing countries by UN. But these investments were far from necessary by their absolute amount (Statistical yearbook of Croatia - 97, p.p. 166 - 167; 172; D. Vojnic,1996, p. 544.) All this caused the decline of physical volume in transport

with exception of sea and air transport which took over the role of land transport from 1991 on (Table 3).

Table 3. Index of total volume of transport (1990 = 100)

	Total	Railway transport	Maritime transport	Air transport	Road transport	Urban transport	River transport	Pipelines
1989	99	112	95	-	112	105	106	98
1990	100	100	100	-	100	100	100	100
1991	90	52	102	100	69	73	75	84
1992	84	27	108	237	58	72	10	9
1993	77	25	98	515	51	71	4	9
1994	85	25	110	718	52	72	3	8
1995	87	30	112	720	51	71	6	14
1996	93	27	119	955	47	68	4	26

Source: Statistical yearbook of Croatia - 97, p. 285.

After 1996 there were 2,726 km of railroads, of which only 36.1% were electrified.(Statistical yearbook of Croatia - 97, p. 286.) Railroads connecting the ports of Split, Zadar and Sibenik to Zagreb are not electrified and are obsolete because they were for the most part built according to economic, civil - engineering and technological achievements of the 19th century (they were being built from 1874 to 1966).

The road network had 26,928 km in 1996, of which about 82% were paved. Only 1.2% of them, or 318 km are highways. In 1991 1,170,954 registered motorvehicles used these roads, while in 1996 there were 1,008,878 of them. The decline was caused by the war and economic crisis. But so on these vehicles will be joined by an increasing number of vehicles in transit, and the vehicles belonging to visitors to Croatia. About 70% of foreign vehicles entering Croatia will use the roads of the Croatian Mediterranean region, and most of them will use the Adriatic Tourist Road.(Statistical yearbook of Croatia - 97, p. 288; Ministry of transport and communication RC)

It is well known that the road transport causes most safety and environmental problems of the transport system. However, the number of accidents amounting to 53,297 in 1991 and growing until 1994 when it amounted to 62,120 was decreased to 61,656 in 1995 and 59,420 in 1996 (the number of victims in 1996 was 1,020 and in 1996 it was 721). The number of the injured in the period of 1991 - 1996 oscillated

between 15,6 thousand in 1993 and 17,7 thousand in 1994 and 1995, falling again in 1996 when it was 16,182.(Statistical yearbook of Croatia - 97, p. 288; Ministry of transport and communications RC.) Safety measures taken during the recent years yield encouraging results.

In addition to noise nuisance, road traffic causes air pollution by emissions containing nitrogen acids 33.4 % - 41.5 % and carbon monoxide 58.5 % - 68.3 % in the period of 1990 - 1994. (Statistical yearbook of Croatia - 96, p.p. 358 , 359) From the data referring to 20 European countries it is evident that road traffic emitted 45% of the total nitrogen oxides in atmosphere. In Western Europe road transport emitted 30 - 90% of the total carbon monoxide emission.(Europe's Environment, 1995, p. 438) It is obvious that Croatia like all the European countries will have to make great efforts to reduce environmental threats caused by road transport in order to foster sustainable development.

Although we have not looked at all the problems, limitations and characteristics of transport and communications in Croatia, we have indicated same of the challenges facing Croatia in formulation of sustainable development strategy in terms of transport.

4. CHALLENGES

Far from pretending to list all the major challenges Croatia is facing on the verge of the 21st century in the area of transport-infrastructure systems, we have chosen the following:

1. Croatia's economic development will undoubtedly be open to European and Mediterranean environment. In the long-run**,** we hope, it will cause a great dynamic in the movement of goods and people from Croatia, over Croatia, and to Croatia. Being a comparatively small country she will tend to restructure and dynamise her economy on the entire national territory aiming to reduce differences in development level between coastal and continental regions. Complementary economic structure of continental and coastal areas requires efficient communication both internal and international. If she does not develop her transportation system and does not make it compatible with the developed European and Mediterranean environment, the flow of goods and passengers will avoid Croatia causing further decline of her ports, and her coastal and national economy.

2. In transition and globalisation processes Croatia is torn between huge needs and limited investment potentials necessary for the development of her national economy and for efficient inclusion in the international exchange processes. Inclusion of Croatian human resources in the global life is the basis for transitional and mondialisation processes. Her policentric spatial development is a condition of efficient utilisation of human and material potentials. It will allow efficient evaluation of Croatia's geographic position including her coastal areas and ports.

3. The port systems and maritime economy of Croatia have to be included in to the global, intersector and regional strategy and policy of the national development of an open economy. It has to be taken into account that:

- sea ports are integrated into urban centres;
- these centres are economic, political, administrative, educational, medical, scientific and cultural agents of development for their regions;
- they are agents of Croatia's policentric development;
- they are agents of international exchange processes in transnational co-operation and globalisation of Croatian economy.

4. Croatian economic and transport interests must be integrated into European and Mediterranean interests by fast railroads and highways and by maritime transport. It is the so-called Y of railroads in the direction Vienna - Graz - Maribor - Zagreb - Split and Budapest - Koprivnica - Zagreb - Rijeka - Triest, with the additional railroad route Hungary - Osijek - Sarajevo - Mostar - Ploce. (Fig. 2)

Besides the highways Vienna - Maribor - Zagreb and Budapest - Goricani - Varazdin - Zagreb, specially significant for Croatian Mediterranean region are the highway in construction Zagreb - Rijeka, and the future highway Zagreb - Split as well the Adriatic highway Triest - Rijeka - Zadar - Sibenik - Split - Dubrovnik - Albania - Greece - ...

5. Croatian pipeline from Omisalj on the island of Krk leading towards the continent, the canal Rhein - Mein - Danube exploited since 1992, and the hope for a long-lasting peace between the countries of ex-Yugoslavia, will revive the plans for construction of the canal Vukovar - Slavonski Samac. The navigable Sava and the canal Vukovar - S. Samac will create another dimension of transport communication between the Adriatic and the North Sea, completing the link between the Mediterranean and the North-west, Central and North-east Europe.

6. The past transportation policy cannot boast of its appreciation of coastal areas that refers especially to the sea ports, islands and sea transport. The sea, the ports, the shipbuilding industry and maritime tradition were insufficiently used in internal or international transport communications. It is completely wrong to expect that the construction of small tourist airports will solve the problem of isolation and revive the islands without safe regular and inexpensive shipping lines. Agents and creators of economic transport and port policy have to respond readily and efficiently do the challenges of the new matrix of maritime activities.

7. In creation of her national and maritime transportation system Croatia has to integrate her economic and transport communications with Bosnia and Herzegovina. That relationship has to rely on the present and future economic and infrastructure policies of Croatia and Bosnia and Herzegovina. Without that neither of the countries will be allowed to develop her economy or to play a significant role within the international environment.

The stated factors are far from everything that is required, but they belong to the very core of the national transport-infrastructure policy and the very core of reconstruction strategy and sustainable development of Croatian maritime economy.

5. SUMMARY MESSAGES

Today's generations in Croatia will be responsible for the sound foundations of Croatian development and the heritage for the future generations who have to get far more than we did. It refers to the entire Republic of Croatia as well as to her Mediterranean area. If we want to act so as to be necessary and useful both to ourselves and to others (which will show our value), we must know that we cannot achieve that without an efficient transport system - which will allow us to get included into the global life.

However, it is of equal importance to get more understanding from European environment, particulary from the West and Central European countries, whose support and help is essential in conditions of millenial challenges for Croatia. **Croatia cannot do without Europe — Europe is not complete without Croatia.**

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