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## TRAFFIC INFRASTRUCTURE IN THE DEVELOPMENT OF THE CROATIAN TRAFFIC SYSTEM

### SUMMARY

*The absence of a long-term traffic policy and of the policy of financing the construction and maintenance of traffic infrastructure facilities, represents a synthesis of numerous unresolved relations whose negative effects are felt in the overall economic and traffic development and consequently the evaluation of national potentials in the field. Adverse aspect caused by the lack of a clear and feasible policy of financing the traffic infrastructure facilities, is also a result of not having defined an adequate traffic policy, programme and strategic courses of development, nor financing models that would be in accordance with the market and economy system.*

*This indicates that it is necessary to determine a policy for financing the construction and maintenance of traffic infrastructure, which has to be based on scientific development, team work, availability of plans and programmes to scientists and experts, determined methodology based on marketing and economic logic in defining the programme and strategic tasks and assignments so as to make them feasible.*

*In the near future, intensive preparations for investments in the overall traffic system are necessary, especially regarding the traffic infrastructure facilities - the pivotal points in the process of evaluating the traffic in our national territory. Croatia needs to define clearly its strategy in constructing and maintaining the general traffic infrastructure, appointing at the same time those who will carry out the given tasks.*

### 1. INTRODUCTION

The traffic and geographic position of Croatia is a significant factor in the geo-traffic evaluation together with other aspects of the process of development.

The main emphasis is on the traffic infrastructure facilities. They represent a synthesis of an age-old tendency to adequately evaluate the Adriatic orientation of Croatia, as a factor of more intense integration into the European and world traffic and economic system.

The traffic system of Croatia has significant potentials in all types of traffic infrastructure facilities, but it has been insufficiently used and technically and technologically it lags behind the West-European countries. This situation has been caused by the lack of a long-term traffic policy during the period following

the World War II, not recognising the Adriatic orientation as a significant factor of the geo-traffic evaluation of the whole Croatian territory, and not recognising the geo-traffic position of Croatia at all. It has also been the result of a number of hybrid solutions in the traffic policy, which was lacking complexity and comprehensiveness, and at the same time showing signs of hesitancy and feebleness.

Apart from these essential drawbacks, the then quasi-traffic policy "was not based on any solid or deep scientific knowledge and experience".<sup>1</sup>

This situation has to be overcome by a clearly defined and scientifically determined traffic policy of the newly constituted Croatian government, with defining of the measures and instruments of the traffic policy and in such a political environment regarding construction and maintenance of the traffic infrastructure as the basic factor of the geo-traffic, traffic, geographical, and geo-political evaluation of Croatia within the process of its integration into the European and world traffic and economic system.

### 2. THE POLICY OF FINANCING THE TRAFFIC INFRASTRUCTURE FACILITIES IN CROATIA

The study of the policy of financing the traffic infrastructure and its negative effects on the overall social and economic development of Croatia indicate that there have been no clear definitions of its role, nor of the realisation and evaluation of the Adriatic orientation, nor of their interdependence on all the basic development segments of the economic structure with which it interacts on the Croatian territory.

The absence of a long-term traffic policy and policy of financing the traffic infrastructure over the period of four and a half decades, neglecting also the Adriatic orientation and all the comparative advantages of the geo-traffic and geo-political position of Croatia, numerous unresolved relations piled up within the traffic system. This also meant uncoordinated operation of

all the segments of the economic system on the territory of the former parts of the country which does not exist any more. The synthesis of this fact is indisputable: the construction of a new and modern traffic infrastructure contributes to the evaluation of the geo-traffic position of Croatia as a significant subject within the European and world traffic flows.

Such uncoordinated quasi-traffic policy could not be the basic orientation in the process of evaluating the Croatian territory within the European transportation flows, increase of the number of tourists staying at our seaside, reduction of transportation costs as a factor of competitiveness of the produced goods from our regions, intensifying of the Adriatic orientation, and attraction of the very important, and from the aspect of foreign currency, tempting transit through our maritime infrastructure capacities further to our railway, road, air, and postal and telecommunications infrastructure facilities.

Such inadequate and non-economic status of the traffic system and the traffic infrastructure, a consequence of a non-marketing treatment more or less of the whole economic and traffic system and its subsystems, requires a re-orientation to optimisation of the internal Croatian transportation system and evaluation of factors of the general economic system on the principles of marketing as its basis.

The dichotomy in the traffic policy, which is the result of the former traffic policy and the policy of financing the traffic infrastructure, reflected itself in numerous deviations in leading of a coherent infrastructure policy in Croatia. The examples were given already in the first part, and the result is the lack of unity of traffic subsystems within the traffic system and individuality of interests within the overall traffic sphere and its individual parts.

The realisation of certain programme tasks in the region of the former country has been determined by the level of development and the amount of the national income, which was significantly heterogeneous depending on the region, thus preventing important investments in the development e.g. of an integral digital network - ISDN (Integrated Services Digital Network) and the establishing of Trans-European telematic - videonetwork.

It should be mentioned that up to now the following services have been implemented into the Croatian telecommunication network: telephony, telegraphy, data exchange, video-text, facsimile, electronic mail, MHS (Message Handling System), automatic answering machines, mobile radiotelephony (mobitels), bureau-fax, etc.

Following the independence of Croatia, the development of postal and telecommunication traffic foresees the development in two directions, as follows: (1) extension of the services options, and (2) modernisa-

tion of the services technology. The system of the services options extension is based on the replacement of the conventional services by new, computerised improvement of the existing services and the introduction of new ones (E-mail, various self-service devices, automatic money counters - postomat, etc.).

The future development of telecommunications, as one of the factors in traffic evaluation of Croatia, moves in the direction of digitalisation and integration by introducing optical cables at all network levels.

The realisation of the main directions in postal engineering will be determined by the reconstruction of the network damaged during the war, requiring additional financial investments.

Lack of uniformity which is caused by the insufficiently complex and consistent policy of constructing and maintaining of traffic infrastructure may be synthesised in the following factors: insufficient evaluation of the Adriatic orientation, as the main factor of faster and cheaper integration of Croatia into the international flows, too slow realisation of the started projects which take into consideration the value of the Adriatic orientation of the whole Croatian region, attracting the transit of goods to our ports and increase the level of utilisation of port infrastructure facilities. The waterways are also insufficiently used, causing dislocation of a number of economic potentials where their construction was far from logical.

### 3. DEVELOPMENT OF TRAFFIC INFRASTRUCTURE IN CROATIA

The basis for determining the policy for financing of traffic infrastructure has to be based on the really feasible and realistic goals, measures, and on-time and efficient economic instruments.

Questions that need to be synthesised at all segments of the economic interrelations in the process of evaluating the Croatian traffic are the following:

- (1) defining of the infrastructure policy, which includes the policy of financing the traffic infrastructure over a longer period of time,
- (2) co-ordination of the Croatian traffic system development with all the segments of the economic system, thus enabling the achievement of adequate economic development,
- (3) scientific and professional evaluation of the traffic system, including the traffic policy and the policy of financing the construction and maintenance of traffic infrastructure and development programmes of traffic and traffic infrastructure at all levels, and in all traffic aspects of the country,
- (4) measures for the realisation of such a traffic and infrastructure policy have to act synchronous; their efficiency or non-efficiency is exactly

proportional with the programme realisation. This indicates that Croatia has to define clearly the objectives and instruments that have to be used in order to achieve the set objectives. Apart from that, those who will carry out the individual tasks need to be clearly defined. Without these aspects, there can be no clear definition of the country policy with regard to the financing of the construction and maintenance of the traffic infrastructure facilities in Croatia.

The basis for the concept of the policy of traffic infrastructure financing has to rely on the really possible and realistic objectives, measures and feasible economic instruments. If this very important factor is not determined, the traffic policy will, as was the case in the recent past, inadequately and individually act in realising a poor traffic policy, along with the lack of adequate methodology, which will result in non-realisation of the programme i.e. strategic tasks in Croatia. Negative effects will manifest themselves in a number of not realised programme tasks which will have an adverse effect on the geo-traffic evaluation of Croatia. When speaking of the geo-traffic position of Croatia, it should be mentioned that it covers the operation of three major regions: the Mediterranean (Adriatic), the Pannonian (Danube) and the intermediate Dinaric region. Croatia is thus located on the centreline Mediterranean - Europe, and the location of the Adriatic, so deeply entering the European mainland provides an extraordinary traffic and strategic significance. The traffic and geographical position of Croatia presents the basis for its traffic planning and in accordance with it the defining of the bases for the possible traffic policy and the policy of constructing the traffic infrastructure facilities.

Determining the development of the traffic infrastructure facilities needs to be considered from the aspect of documents that have, a long time ago, been developed at the level of strategic interests of the former country, which refers mainly to the priorities, plans and their realisation. According to a number of considerations, along with the road infrastructure facilities the following statement is valid: "the vital corridors in connecting the West and the East, and the North and the South, still indicate that the emphasis in road constructions mainly neglected the priority interests of Croatia".<sup>2</sup>

Similar statements can be found relating to other traffic infrastructure facilities, which requires an answer to a serious question with long-term positive or negative effects. Which are the strategic interests of Croatia in constructing the traffic infrastructure facilities? The answer to this complex question should take into consideration the analysis of the overall economic system, its requirements, evaluation of new complex "input" data, on the basis of which the specific impor-

tance of all the traffic infrastructure facilities could be obtained, and an attempt made at determining the development strategy of the Croatian traffic system up to the year 2000. The process should therefore include (1) the programme directions of the traffic infrastructure construction, and (2) the strategic traffic priorities of Croatia.

(1) The development of construction regarding geo-traffic and geo-political position of Croatia and its role in traffic connection with Europe. The planned development in the construction of traffic infrastructure in the near future includes:

- 1) the construction of roads - construction of the motorway from Goričan to Zagreb, and from Karlovac to Delnice and Rijeka, the completion of the motorway Zagreb-Macelj towards Austria, and the construction of the Adriatic motorway from Sv.Rok, Maslenica and Zadar to Split. The road of the so-called "southern corridor" from Karlovac to Zadar and of the road from Bjelovar to Osijek, which belongs to the "northern corridor" need to be reconstructed.
- 2) in railway traffic, the modernisation and elimination of "bottle necks" need to be completed on the existing railway line Rijeka-Zagreb-Koprivnica, the international lines need to be improved for high speeds of up to 200 km/h (line Karlovac-Rijeka with the extension in Istria, and the double-track direct railway line Zaprešić-Pragersko on the route Zagreb-Graz (A)), as well as defining the corridor and the route of the Adriatic express railway.
- 3) in air traffic, the emphasis is on the process of intensive interregional, European-Mediterranean, regular and charter connecting, with clearly defined Croatian government policy regarding air traffic.
- 4) in telecommunications - the acceptance of the TEL programme (Transeurope Line) from Ukraine and Hungary via Zagreb to Rijeka with connections to Osijek and Slavonija and from Zagreb to Ljubljana. The ADRIA - undersea optical cable from Rijeka to Dubrovnik with connections is of special importance.
- 5) in maritime traffic - along with the key development role of the port of Rijeka, the emphasis is on the further development and specialisation of all the Adriatic ports as centres of integral traffic (road-railway-ship) through goods and container terminals, especially related to free industrial and trading zones.
- 6) in river traffic - the modernisation of river ports on the rivers Sava, Drava and Danube, along with a huge development project regarding construction of a navigable and irrigation canal

Sava-Danube on the route Slavonski Šamac-Vukovar providing the integration of Croatia into the European waterways Rhine-Main-Danube.

- 7) free zones and cargo terminals - as integral traffic centres - whether related to main sea ports (especially Rijeka and Ploče) or river ports or major cities, the cargo terminals cover the whole Croatian region and offer adequate conditions of utilisation.
- (2) Strategic traffic priorities in the development of traffic infrastructure in Croatia should primarily take into consideration the shape and the position of the Croatian territory, and the long-term interests, not forgetting the geo-traffic, traffic-geographic and geo-political position of Croatia in the European and world traffic and economic system. Furthermore, one should consider the fact that Croatia has no direct contacts on land with the developed Europe (only through the Republic of Slovenia), which imposes the following requirements: better use of the ferryboat connections to Italy, improvement of the ferry connection Umag-Italy, and directing a part of the development to the route Rijeka-Zagreb-Budapest-Kiev.

Furthermore, it is necessary to "rationally co-ordinate the development of all the traffic infrastructures, with the tendency to more integral traffic results, and to assign to each traffic branch the type of transport which is complementary to it".<sup>3</sup>

A high level of balance is indicated in the construction of traffic infrastructure facilities, with the addition of determining the systems for their financing and subsequent maintenance in the same way. The rationalisation within the construction strategy imposes that the construction development, individual phases and sections be clearly defined, as well as those who will be in charge of it. Soon, a scientific and expert support should be prepared, for a well defined traffic policy of Croatia, directing and co-ordinating the development of traffic infrastructure optimally, regarding the following aspects: space, traffic, civil engineering, traffic safety, ecology, commerce and economy in general. The advantages of the Croatian region need to be taken into consideration, both the Central European (Pannonian-the Danube) and the Mediterranean (the Adriatic) position. This means that such significant strategic aspects need to be analysed, priorities determined, the investments subjected to marketing principles, the ratio of cost and utilisation differentiated, in order to be able to realise what is feasible and not write programmes which are far from real and impossible.

#### 4. CONCLUSION

The traffic infrastructure depending on the development of the Croatian traffic system is an extremely significant and responsible task of the overall economic system in the next decade. Its relation to the means of transport is more than obvious, and it is reflected in the functional relation that the traffic is a complex dynamic system, which has to act in synchrony with all the surrounding segments. Therefore, the construction policy is needed which optimises the ratio of investing in new constructions and maintenance, thus being consciously directed towards undisturbed functioning of the infrastructure facilities, as a part of the dynamic complex system, i.e. factors of traffic evaluation of Croatia. In the future, it is necessary to determine the strategic and planned processes of construction and modernisation of the traffic infrastructure depending on the traffic evaluation of Croatia, evaluate all its geo-traffic, geo-political and traffic-geographic advantages, and regarding traffic infrastructure and the traffic activities include Croatia as one of the developed countries in Europe.

#### SAŽETAK

#### PROMETNA INFRASTRUKTURA U FUNKCIJI RAZVOJA PROMETNOG SUSTAVA HRVATSKE

*Nepostojanje dugoročne prometne politike i politike financiranja gradnje i održavanja objekata prometne infrastrukture sinteza je brojnih neriješenih odnosa koji se negativno odražavaju na cjeloviti gospodarski i prometni razvoj i valorizaciju Hrvatske. Negativnost kao posljedica nepostojanja jasne i sprovedive politike financiranja objekata prometne infrastrukture - posljedica je neutvrđivanja adekvatne prometne politike, neutvrđivanja programskih i strateških pravaca razvoja objekata prometne infrastrukture i nedefiniranja modela financiranja prometne infrastrukture koji bi bio sukladan tržišno-gospodarskom sustavu privređivanja.*

*To ukazuje da je neophodno utvrđivanje politike financiranja izgradnje i održavanja prometne infrastrukture, koja se mora temeljiti na znanstvenoj i stručnoj podlozi, na timskom radu, dostupnosti planova i programa znanstvenicima i stručnjacima, utvrđivanju metodologije koja se temelji na poštivanju težišno-gospodarske logike pri utvrđivanju programskih i strateških zadaća kako bi oni bili realni i moguće ostvarivi.*

*U idućem su razdoblju neophodne intenzivnije pripreme za ulaganja u svekoliki prometni sustav, pogotovu u objekte prometne infrastrukture, središnja polazišta u procesu prometne valorizacije hrvatskih prostora. To jasno ukazuje da se hrvatska država mora jasno očitovati glede utvrđivanja strategije gradnje i održavanja cjelokupne prometne infrastrukture utvrđujući u tom trenutku i obnašatelje realizacije utvrđenih zadataka.*

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