Paper 87 - INTERNATIONAL COLLABORATION CONCERNING THE USE OF THE DANUBE RIVER IN ROMANIA

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ABSTRACT: Transportation is one of the main components of social and economic life. The social, political and economic changes that took place during the last several years in Europe reinforce our opinion about the presence of an international transport market. Romania is geographically located with the Danube River to the South and the Black Sea to South-East. This position enabled over time the construction of about 30 sea and river ports. All countries located along the Danube basin collaborate for the protection of water quality and fight against pollution. In this regard, in 1994, was concluded the "International Convention". Through an active international collaboration, the Danube River can be used for navigation while respecting environmental requirements.

1 INTRODUCTION

Transportation is one of the main components of social and economic life of any society.

Romania has border with both the Danube River and the Black Sea. (Figure 1)

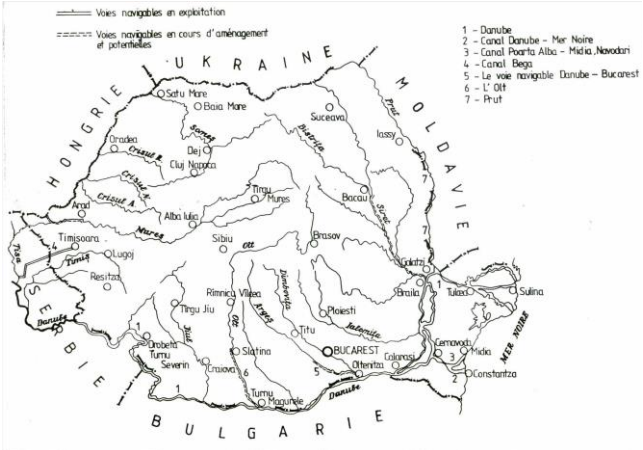

Figure 1: Ports and waterways in Romania

Along its course, Danube and Rhine – Main – Danube Canal flows thru the territory of eleven countries. This makes the Danube River an international river so all the aspects must be agreed upon by all the countries crossed by it.

2 DANUBE NAVIGABLE WATERWAY

Inland waterways in Romania are well developed. Constanta Port, from the Black Sea, is linked to the Danube thru the Danube – Black Sea Canal.

The Danube is navigable from Ulm to the Black Sea measuring 2,860 km, out of which 940 km are in Romania. Along its course the Danube flows thru the territory of ten countries and four capitals (Figure 2).

Figure 2: Danube River

The Danube flows into the Black Sea, trough three main canals: Chilia, Sulina and Sfantul Gheorghe, which form a Delta with a total area of about 5,165 km^2. The main access way is Sulina Canal with 63 km length. It ensures the navigation of 7.00 m draught maritime vessels up to Braila. This limitation is determined by the bottom level formed by the sediments.

Except the navigable sector of the Danube between Braila and Sulina, the minimum navigable depth, maintained by dredging, is between 2.00 m – 2.50 m. The navigation conditions on upstream Drobeta Turnu Severin (931 km) were much improved with the energetic and navigation system "Iron Gate I", including a 40.00 m high concrete dam, a hydroelectric power station and a lock on each side. The dimensions of the locks allow the simultaneous lockage of nine barges (minimum depth is 4.50 m).

Because of its location in the southern part of the country, Danube ports have limited influence on Romania's inland waterway transportation. Considering this, the strategy for the Territorial Arrangements Plan stipulates the turning into navigable waters of some Danube tributaries (namely Olt, Arges, Prut, and so on).

The same goal has been considered in accomplishing navigable canals, such as:

- The Danube – Black Sea Canal, connecting Danube to Constanta Port;
- The Poarta Alba – Midia, Navodari Canal, connecting Danube to Midia Port;
- The Bega Canal assisting the western part of the country.

The opening of the Rhine – Main – Danube Canal in September 1992 created a physical connection with the Rhine and the hinterland, potentially extended to Germany and even to the Netherlands. It created a navigation corridor connecting Constanta Port in Romania with the Rotterdam Port in Netherlands.

Figure 3: Constanta – Rotterdam Corridor

3 THE PORTS

The Constanta and Midia Ports are connected to the Danube through navigable waterways. This ensures the access of the inland vessels to these ports.

Twenty five inland ports are located on the Danube River and five on its inland waterways. Given the volumes of raw materials that are transported, each port serves a specific zone of Romania.

4 INTERNATIONAL COLLABORATION REGARDING THE DANUBE RIVER

4.1 European Community Collaboration

Extension of the hinterland of a port requires connection to distant areas. Therefore, European Transport Corridors are considered (Figure 4). The Corridor VII represents, in fact, a waterway of the Danube. Nevertheless, it is mentioned that other corridors cross the Danube: Corridor V, Corridor IX.

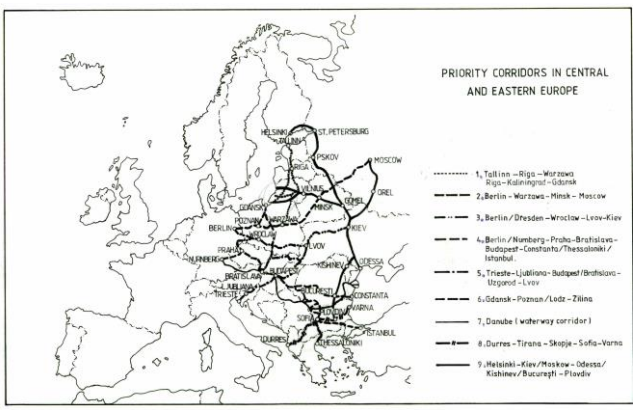

Figure 4: European transport corridors

These routes enlarge considerably the Danube hinterland. In addition, all the corridors end to a port, such as Constanta Port in Romania.

4.2 The International Convention regarding the protection of the Danube

This convention was adopted in 1994 in Sofia. Its purpose is to increase the collaboration regarding prevention and control of transboundary pollution, sustainable management of the Danube and the rivers along its hydrographic basin, as well as, rational exploitation and conservation of water resources. This will contribute to the protection of the Black Sea and assist the efforts of the United Nations Economic Commission for Europe (UNECE) and European Community.

4.3 The Danube Commission (D.C.)

The Danube attracted the attention of many economic, political and military authorities of different countries. Following a series of discussions, the "Convention regarding the rules governing the navigation on the Danube" was signed in Belgrade in 1954 by the countries having direct access to the Danube.

Danube Commission's (D.C.) purpose is to standardize the regulation for navigation; for example, establishing the manner for performing the maintenance works, signalling, and so on.

All countries crossed by the Danube take into consideration the regulations and recommendations issued by D.C. without being delegated to follow all provisions herein.

D.C. cooperates with CEE, with the International Committee regarding the protection of the Danube convention and Rhine Commission in order to be in line with the regulations, due to the fact that the navigation takes place both on the Danube and Rhine (Figure 5).

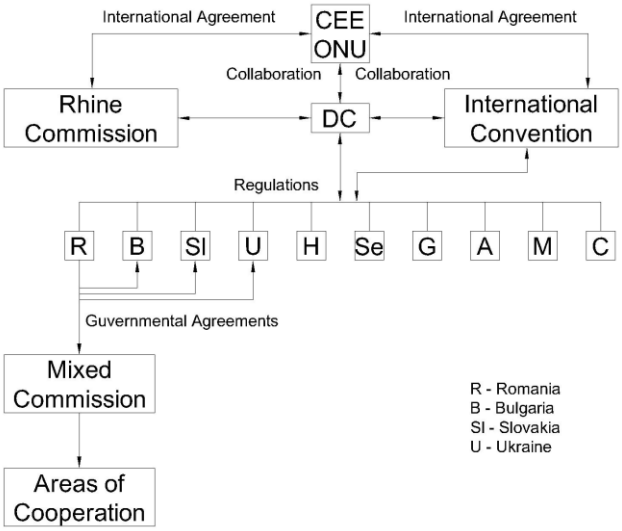

Figure 5: International collaboration regarding Danube River exploitation

4.4 Government agreements

Government agreements that took into consideration the D.C. regulations enacted between Romania and its neighbours Conventions. As a result, Mixed Commissions were found.

The members of these commissions meet periodically to discuss all issues at stake along the common sections of the Danube.

4.5 Cooperation between countries

4.5.1 Navigation regulations

In order to address any navigation issues all Danube riparian countries adopt the C.D. regulations, which issues fundamental Provisions. Some aspects are developed by the governmental Mixed Commissions.

The provisions include:

- Assignment of sections of the Danube to be maintained by each riparian country (Figure 6);
- Performance of appropriate signalling operations in the summer and winter;
- Measurements of depths and volumes of dredging in order to maintain the necessary navigation depth.

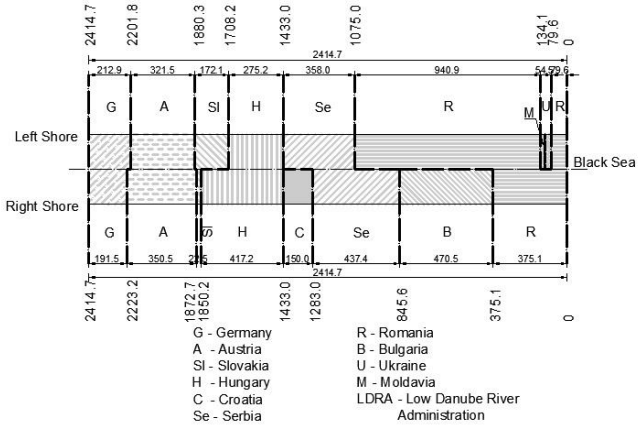

Figure 6: Sections of the Danube

4.5.2 Potential outcomes

The following scenarios may adversely affect the navigation, such as:

- natural disasters such as floods;
- pollution;
- formation of ice blocks;
- navigation accidents.

The outcome of those scenarios might be:

- variations in water elevation;
- pollutant nature;
- pollution grade;
- formation of ice blocks;
- navigation accidents and response measures.

Depending on the location of the event, the country affected should take all remedial actions to mitigate the effects of those events.

4.5.3 Cargo navigation traffic

The access of vessels is allowed at all national commercial ports.

These are no restriction and the intent is to keep the vessels in the port for as short time as possible.

4.5.4 Execution of the works on the Danube

Each country is responsible to keep the necessary operational at all times infrastructure like quays, dredging and so on. D.C. and the countries along Danube are informed about the infrastructure needs of each participant country and how any deficiencies affect the navigational needs of other countries. In return, each country shall submit its recommendations.

If more countries are involved in a specific project, for example Hydro – Energetic systems, common contribution and exploitation is provided (Figure 7). Investments are globally treated to obtain an efficient product (Figure 8).

Figure 7: Hydro – Energetic system „Iron Gate I"

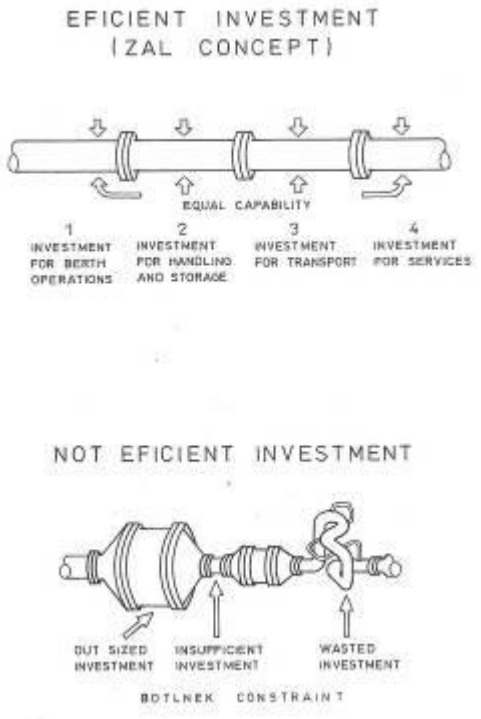

Figure 8: Efficient Investment Concept

5. STUDIES ON THE DANUBE WATERWAY

A number of studies have been conducted to improve the navigation conditions along the Danube River.

As anticipated, Market Integration along with liberalisation of the economies of Eastern Europe will stimulate economic growth and increase the flow of cargo along the newly emerging Trans – European routes.

Within this context, further exploitation and development of the navigational capabilities of the

European Inland Waterways corridors is seen as an attractive investment.

Consequently, Danube as a traditional European waterway corridor for passengers and cargo alike, has a major impact on the development of its adjacent countries. However, the transport patterns in the River are in decline compared to other modes of transport such as road, rail, and air.

Increased Danube Transportation will support further European Integration, social stability and economic growth by means of reduced costs and reduced environmental damage at an attractive investment cost.

The research activities include:

- Review of past and present use of the Danube as a major transportation route;
- Site investigation of the most important facilities in all the countries surrounding the Danube;
- Interview of a representative number of both private and public entities involved in the transportation of people, goods and services along the Danube.

Each port was evaluated in terms of the following criteria:

- regional importance (state of the industrial development, population density);
- strategic importance as an intermodal traffic node;
- overall capacity of the port (transhipment and storage capacity);
- existence of special cargo equipment;
- state – of – the art of different supply services regarding navigation itself;
- strategic importance as maritime – inland navigation interface;
- distance to adjacent ports along the Danube main course;
- development perspectives based on market forecasts;
- vicinity of developed shipbuilding centres and ship maintenance facilities.

6. CONCLUSIONS

Danube is the main European waterway corridor for passengers and cargo alike. Its significance to all riverside countries is enormous.

D.C. ensures the standardization of regulations and cooperation with international organizations.

The European Commission gives great importance to this corridor by conducting studies and granting investment funds. The Commission includes representatives of all the countries benefiting from these river facilities.

All Danube riparian countries should cooperate to preserve the status of the Danube as a major transportation and navigation route in Europe.

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