

THE ECONOMIC AND STRATEGICAL IMPORTANCE
OF HYDROENERGETIC AND NAVIGATIONAL SYSTEMS,
PORTILE DE FIER I, PORTILE DE FIER II AND THE DANUBE
— BLACK SEA CHANNEL

VASILE SURD*

ABSTRACT. — The economic importance of the strategy of the hydroenergetic and navigational systems belonging to the Romanian and Yugoslav sector of the Danube and of the Danube — Black Sea Channel has increased considerably at the same time with the accomplishment of the Danube — Main — Rhein Channel. Unfortunately, in the present political European context, the objectives set with considerable effort within the middle and inferior sector of the river are utilized as means of economic and political compulsion under international control, totally disconnected from their initial natural aim. Thus, from a geopolitical point of view, the hydrographic area of the Danube basin as well as its flow can be easily divided into two big sectors: an upstream one, from Bratislava upstream, whose hinterland is marked by positive evolution; a downstream one from Bratislava downstream to the Black Sea, submitted to the clashes of opposed interests and tensional states.

It is well known from all geography school books that the Danube represents the most important international navigable arterial river in Europe, due to its position on the continent, to the morphometric characteristics of its bed, to its hydrologic regime and due to its flow.

The Danube-Main-Rhein Channel constituted a real intracontinental navigation axis, facing SE—NW and linking the Black Sea to the North Sea. Taking a look at them from the point of view of the basinal areas belonging to the two rivers, namely the Danube and the Rhein, joined together by the channel, we can easily notice that almost 1/3 of Europe participates to the hydrographic basins of the two large rivers. Central and north-western Europe, Romania and the northern part of the Balkanic Peninsula pay tribute to the Danube and to the Rhein due to their network. The economic life of ten European states (Ukraine, Romania, Bulgaria, Yugoslavia, Hungaria, Slovacia, Austria, Germany, France and Holland) depends more or less on this international navigation system which is and must be a most real factor of cohesion and comprehension at the continent's level.

Any hydrographic basinal area of Danube's size has a spacial arborescent display. Such a projection mode in the geographic space requires accumulations, mass and energy multiplying and unfolding from upstream to downstream, materialized in flows which gather progressively following the same sense (upstream — downstream)..

* "Babeș-Bolyai" University, Geography, 3400 Cluj-Napoca, Romania

The fact that the economic and implicitly, the strategic value of the river grows with the growth of the flows and the number of the rivernes became a general truth and bears an axiomatic value. The physical pressure upon the Danube is accomplished from upstream to downstream, where as economic pressure bears bidirectional senses (downstream — upstream, upstream — downstream).

The economic and strategical importance of the river has increased with the carrying out of some cardinal hydrotechnic objectives, like the hydroenergetic and navigational systems Portile de Fier I, Portile de Fier II and the Danube — Black Sea Channel on the inferior flow of the river. The hydroenergetic and navigation systems Portile de Fier I and Portile de Fier II have been set up in collaboration with Yugoslavia. They are also exploited in common according to the principle of parity. The change from natural course of river to the controlled one has been thus achieved. As a consequence to such arrangements, the traffic is carried on in safe conditions in both senses. The time for crossing the sector Bazias — Turnu Severin has been reduced from 120 hours to 30—35 hours.

The hydroelectric power station Portile de Fier I, which has been rendered to the circuit of exploitation since 1972, has an installed power of 2136 MW out of which 1068 MW (50%) belong to Romania. The average energy production is of 5.5 milliard KWh, representing about 50% of Romania's hydroelectric production and almost 8% of the national electric production.

The hydroenergetic system Portile de Fier II, situated at 80 km downstream from the first station, has an installed power of 540 MW, out of which 270 MW belong to the Romanian part. The annual average production is assessed at 3 milliard KWh.

On the whole the two hydroenergetic systems do supply about 12% of the national electricity production and are appreciated to be the most efficient of the country's stations.

The Danube—Black Sea Channel, 64.2 km long belongs exclusively to Romania and flows over the lower sector of the desert like plateau of Dobrogea, following the Carasu valley. Because of it, the distance between the Black Sea and the Danube has been diminished with 400 km. The channel allows for the transport of about 75 million tones of goods. It also facilitates the irrigation of the central and southern sector of the Dobrogea Plateau. At kilometre 35, the Danube—Black Sea Channel branches into another channel, that is Poarta Albă Midia Năvodari Channel 26.6 km long, to which some other 5 km of waterway must be added; it attends the petrochimic complex Midia Năvodari and supplies an annual traffic of 12 million goods and raw material.

The strategical importance of the three objectives derives from their technical constructive characteristics, as well as from their geographic position.

The hydroenergetic and navigational system Portile de Fier I is situated in the sector Gura Văii—Sip. It is 441 m long and has 14 over a fall fields of 25 m each. It is 40 m high and is crossed by a 7.4 m

wide road. There is also the possibility of building up a railway. There is a 350 m long lock on each side (the Romanian and the Yugoslav) 34 m wide, which supplies the normal transition of 50 million tone goods.

The hydroenergetic and navigation systems Portile de Fier II lies in the sector Ostrovu Mare—Oreahovo. It represents a complex of hydrotechnic arrangements consisting of a main dam on the Big Danube and a secondary one (the Grosu dam), on the Small Danube and two lock systems. The main dam has a length of 200 m, is 32 m wide and 43 m high, The secondary dam is 200 m long, 32 m wide and 17 m high. Its main aim is providing the overfalls at great waters.

As regarded from the engineering point of view, all the dams built up in the Romanian—Yugoslav sector are gravity dams.

The Danube—Black Sea Channel is 90 m wide at the ground level, 30—50 m at the bottom and 7 m deep. It can take towboats with six barges up to 300 tdw each and river vessels up to 5 000 tdw. The allowed load draught is of 5.5 m and the navigation speed of 8—9 km/h. It is crossed by 36 bridges, of which 11 are railway bridges. It has two locks, one at the Danube in the Cernavoda region and one at the Black Sea in the Agigea sector. The overall size at passing under bridges is of 12.5 m.

The geographic position in case of the two hydroenergetic and navigational systems has claimed for a cooperation with the neighbour lying west, that is Yugoslavia. By increasing the level of the Danube waters, the negative effects of the natural bed connected with the presence of rocks at the low water levels on the river have been annulled. Besides facilitating the traffic, the lock systems also act as efficient controls on the vessels transiting these sectors.

The Danube—Black Sea Channel has been set up as an outcome of Romania's exclusive financial, material and human efforts. It allows for an efficient control of navigation on the whole flow and according to its dimensional characteristics and flows, it arises an obstacle in front of any land troupes and terrestrial fight technique during war.

The three hydroenergetic objectives are the results of the adjoined or single efforts of the two neighbouring countries, Romania and Yugoslavia, which did not lose their hope in taking the benefits of these efforts.

Now as the conflictual states of affaires have been set going on the territory of the former Yugoslavia, these objectives which at the beginning have fostered strongly both properly and figurativly, the relations between the two states, are now used as economic means of pressure under international control. They do not contribute to the welfare of those who have built it, but, on the contrary, to their pauperization. The zonal importance has been extrapolated at regional scale and the three objectives begin to lose gradually the autonomy and control of the countries which have set them up, in that they become ways and means of economic, political and military interference on continental scale. The conflictual states and clashes of interests are in-

creasing from upstream downstream with the growth of the river's flow and as it approaches the Black Sea.

I hope not to be wrong when I suggest that the Danube should be divided into two sectors, a superior one, from Bratislava upwards with a hinterland marked by calmness and peaceful evolution, and an inferior one, from Bratislava downstream up to the Black Sea, set off tensional states, now like centuries before, and which are sometimes tragically reflected in the people of the riverine countries.

REFERENCES

1. * * * *Westerman Schulatlas* — 1973.
2. * * * *Trustul de Construcții Hidroenergetice T.C.H. București — România, mai, 1990.*
3. Dragomirescu, S., Dragomirescu, Simina, (1993), *Hidro-Electricity in the Romanian Carpathians*, *Geojurnal*, vol. 29, no. 1, January, pp. 31—39.
4. Pop, Gr. (1993), *Sistemul hidroenergetic și de navigație „Porțile de Fier II“*, „Terra“, XXV, Nr. 1—4/1993.
5. Rădulescu Șerban-Zoner (1982), *Dunărea, Marea Neagră și Puterile Centrale (1878—1918)*. Ed. „Dacia“, Cluj-Napoca.