

METHODOLOGICAL APPROACH TO THE SPATIAL PLAN OF THE RIVER BELT

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Based on the main assumptions of the Spatial Plan of the Republic of Serbia in regard to the Danube-Sava river belt, this paper gives an overview of the methodology of this area's spatial plan elaboration. The importance of this belt for the integration and development of Serbia, the spatial scope and complexity of the task, imposed new approaches to defining methodology and the elaboration procedure of this spatial plan. During the preparation phase of the Spatial Plan of the Danube-Sava River belt it was projected that it should be elaborated in two main phases. The first phase ought to define the overall development strategy, the space utilization, protection and arrangement of the river belt and its gravitating areas (outlined by districts' territories along the Danube and the Sava). The second phase of the Spatial Plan should be elaborated as a structural/physical plan divided into seven belt's segments (outlined by territories of local communities along two rivers).

Key words: *methodological approach, Danube-Sava River belt, development strategy, sectoral strategies, structural/physical plan.*

GOALS AND METHODOLOGICAL APPROACH

As determined by the Spatial Plan of the Republic of Serbia (1996) the Danube-Sava River belt is the main axis of the future development of the Republic of Serbia (further in the text RS) around which economic and other forms of integration with European countries (as a substitution for the lack of location on the sea shore) will be effectuated. This belt is characterised by a top concentration of population and large towns, including the state's capital, and particularly by a concentration of industrial development, energy production, traffic networks etc.

It has been estimated that in today's development of the Danube-Sava River belt, the integral development strategy prospect was missing, and that excessive autarchy was prevailing instead. Without corresponding criteria and long-term goals, the so-called "micro-moves" occurred, with incompatible activities and functions being self-sufficiently replaced in regional and local communities according to the system "something to everybody" and insufficient to all.

The Ministry of Construction of the Republic of

Serbia entrusted the preparation organization and the elaboration of the *Spatial plan of the Danube-Sava River belt* to the Institute of Architecture and Town Planning of Serbia and the Faculty of Geography (with Prof. Dr. Dimitrije Perisic as project manager) in 2000.

Due to the position of the Serbian part of the Danube River Basin, the *initial assumption* in the methodological approach to the Spatial Plan is the cooperation creation with the European institutions. In the first place it ought to be an open plan by means of which possible solutions could be offered to Europe regarding utilization, protection and arrangement of the Danube-Sava River belt. In other words, this plan should represent a source of various ideas that could attract attention of other European and Danubian countries. It means that the belt zones and parts have to be strategically clearly determined in macro-moves for industry, energy, tourism and other fields of future development.

The Spatial Plan is in its first part regarded as a *strategic-programming document*. The Plan's strategic parts are separated in the contents from the physical plans of the belt in proper sense - shores and structural plans. The second part of the plan will also be more explicit in terms of

conditions and propositions for utilization, construction and arrangement of the space and less in terms of "locations". The purpose is to create strategy and policy foundations through the strategic-programming part of the plan, which should be performed by RS and the Federal Republic of Yugoslavia (further on FRY). The other part (physical-structural plan) will recommend strict propositions and conditions that should be respected in the spatial plans of the lower order and carried out through urban plans in local communities.

With the aim to ensure integral development, one of the main tasks of the Spatial Plan is to determine the *basic framework and instruments* for the complex control and orientation of development in relation to branch tendencies, and regional and local development approaches. There are a great number of subjects - actors, which in a certain way exert influence upon space organization and utilization in the Danube-Sava River belt in RS. The essential question is the integration of their programmes and the coordination of their competences. For example, in the Northwestern segment of Danube River Basin, separate institutions or enterprises manage water systems, transport, agriculture, tourism etc. Most of them have

their own programmes and plans, which rarely happen to be reciprocally coordinated neither for short-term nor for long-term decisions. The goal of the Spatial Plan is to attain integrality in decisions on certain activities development in different functional-spatial entities of the Serbian part of the Danube River Basin. In different phases of the Spatial Plan elaboration, the participation and/or consultations with the European and Danubian countries, local and regional communities, public enterprises, state administrations and various commissions dealing with the Danube River Basin in the country and abroad ought to be established.

ELABORATION AND SPAN OF THE SPATIAL PLAN

During the preparation phase (Elaboration Programme) the following basic structure – *elaboration phases* of the Spatial Plan are proposed:

- Studies-documentation and information basis,
- Strategy of space utilization, protection and arrangement of the Danube-Sava River belt,
- Planning solutions and propositions for several sections of the Spatial Plan, and
- Application of the Spatial Plan.

In first two phases (documentation and strategy) the Spatial Plan includes ten areas/districts (further on *areas*) along the Danube-Sava River belt with 32 506 km² (Map 2.). It is possible to supplement areas as basic units with links gravitating to the border areas, i.e. links of the zones in the domain of electric power productions or links in the domain of traffic etc.

In the third phase – the physical plan of the 32 local communities along the Danube and Sava Rivers will be included with 18,925 km². The physical plan will be made of seven sections distributed as following: Northwestern Backa and Novi Sad sections on the Danube River belt, Danube-Sava zone of Belgrade, Sava belt, Branicevo, Djerdap and Timok section of the Danube River belt. (Map 4.)

STRATEGY OF THE SPACE UTILIZATION, PROTECTION AND ARRANGEMENT OF THE DANUBE-SAVA RIVER BELT

The development and regulation strategy of the widespread area enclosing the Danube should comprise that part of RS which is considerably influenced by the existing navigational system of the Danube (with the Sava and Tisa Rivers and the canals Danube-

Tisa-Danube), as well as possibly influenced by potentially navigable routes (Morava-Vardar Rivers, Danube-Sava-eventually Drina Rivers), and highway and railroad traffic arteries respectively.

The most important purpose of the development and regulation strategy of the widespread Danube River space is the *institutionalisation* of the long-term state interests of the FRY and RS to develop and regulate the Danube system on their territory in coordination with the interests of Danubian, Central and South-east European countries. The strategy has been prepared as a state document of national interest, which at the same time should be acceptable to other Danubian countries in respect to both future planning and contractual documentation for the entire navigable system of the Danube in Europe. That is why this document, by its character and importance exceeds the development and regulation strategy of the Danube River system in the national spatial plan, which is mostly concerned with internal development and regulation (towns, industry, utilization of natural resources, regional land and water transport, recreation etc.).

The contents of the development and regulation strategy of the Danube River in Serbia should include *long-term rules and medium-term priorities*: navigable transport and its links with land transport, tourism, protection and preservation of natural and cultural heritage (of common interest to all countries of the Danube River Basin), utilization of natural resources (waters, mineral ores etc.), industry, population policy, urbanization etc. (of national and regional interest). The strategy should also implicitly reflect national interests in relation to foreign border areas and transregional cooperation.

The strategy should represent a programme generator for the elaboration of corresponding spatial plans for entities of the widespread Danube River system. The strategy rules should precisely define the span of these plans. The strategy should also include those planning elements which were agreed about in similar documents of the Danubian countries.

SECTOR STRATEGIES

The following sector development strategies are in preparation as separate documents *forming parts of the Strategy* of the space utilization, protection and arrangement of the Danube-Sava River belt:

- natural resources utilization strategy (waters,

- land, agriculture and forestry, mineral ores etc.);
- traffic development strategy;
- tourism development strategy;
- economic and industrial development strategy;
- Ecological conditions and protection of natural and cultural heritage;
- Population policy and regional, settlements and urban systems development strategy.

In respect to water management, the belt is extremely important in various regards. Here, some aspects of *water management strategy* are singled out because they point to crucial problems and strategic regulations:

□ The greatest part of the Danube-Sava River belt is situated in the slow-flow zone of two Danube accumulations (Djerdap I and II) and therefore the protection of riverbanks is very important. The drainage systems as functional entities are provided in that zone as a river stretch that ought to be protected from pollution and eutrophication;

□ On a long-term basis, the Danube will have a lesser flow at the Hydroelectric Power Plant (HPP) Tounou Magourela, downstream from the HPP Djerdap II and the Bulgarian border, whereas in the part located upstream from Beocin the construction of the Electric Power Industry of Serbia is planned;

□ In the adjoining Sava and Danube river-bank area, some of the greatest sources of underground water of regional strategic importance are found;

□ One of the goals (in respect to waters) is to locate economy structures, which require greater quantities of water for technological needs, in this belt. Pressure upon sparse water resources in the zone of Central and Southern Serbia will thus be reduced. The second important goal is the distribution of the industry branches with technological processes that produce greater quantities of wastewaters;

□ Lands of the highest bonity classes particularly in respect to irrigation suitability are situated in the Danube-Sava River belt. The Sava and the Danube are planned to supplement the irrigation needs. Since the flow of the Sava in the periods of low water levels is rather weak and insufficient to cover the needs of all planned irrigation systems in its belt and in Srem (gravitating to it) this calls for certain strategic regulations and limitations.

The *traffic development strategy* should provide an unique transport system, i.e. unification of all traffic systems, networks, infrastructures and transport means in the Danube-Sava trans-

port corridor. The Danube with its navigable tributaries is the foundation of Serbian transport system and the fundamental link with similar systems in Europe.

The Danube is one of the most important rivers in Europe, which pivotal river transport role has been insufficiently used by Danubian countries. Integration processes in Europe are under way including transport as one of the cohesion factors with an important economic dimension. Backward transport systems, including the subsystem in our country, essentially impede further development of transition countries and their integration into Europe.

Therefore, important transport projects ("INTERREG II") are worked out in these countries with the aim to define the optional role of the Danube in all aspects of their development. The role of transport, i.e. of "sustainable transport", should be more stressed in river basin areas than in other not so "ecologically sensitive" areas. Transport strategy integration into this project, or the so-called "TINA" project (Transport Infrastructure Needs Assessment) should represent one of the goals in the elaboration of the integral development strategy of the Serbian part of the Danube River Basin and thus of this Spatial Plan.

Another important factor is the opening of the Rhine-Main canal and its connection with the Danube. This new trans-European navigable waterway is becoming important for all countries of the Danube River Basin, which are expecting noteworthy trade and economy effects. Many studies in Europe and in our country point out the future prospects of the BS-CA region (Black Sea – Central Asia). It is potentially the most important market and source of raw materials. Analyses have shown that the lower course of the Danube (starting from Serbia) will actually play the most important role in that context, and should necessarily be taken into account.

According to our hypothesis and plans, the Danube should perform a very important "transit" function enabling cargo transfer from railroads and highways to waterways and reversibly. Since a great number of the so-called multimodal terminals, i.e. transport centres of goods, distributive centres and terminals have been anticipated in the Spatial Plan of the RS they should be critically analysed to determine their optimal number and capacities.

The basic *strategy of the long-term tourism development* in the broad area of the Danube

River Basin conforms to regulations of the Spatial Plan of the RS. It relies on foreign, and increasingly domestic demand for active recreation and hobby-explorations in new, unknown areas of natural values, of natural and cultural heritage (historical monuments and ethno-culture) with provision of standard services and competitive prices. The demand for water tourism (particularly nautical), transit tourism, urban and partly spa tourism, hunting tourism, cultural (ecology and monuments) and specific rural (farm) tourism could be satisfied. The main marinas of nautical tourism should logically be located by the most developed city centres with provision of tourist functions inside the tourist regions in the upper part of Danube River belt, Novi Sad – Fruska Gora, Belgrade and Djerdap on the Danube, the upper part of the Tisa River and the Sava River by Belgrade. Transit, urban and cultural tourism are motivated primarily by the cultural heritage and developed urban functions, ecological, fishing and hunting tourism in preserved natural wetlands and regulated hunting grounds. Considerable efforts should be made regarding the organization and the standard of supply, particularly on the Sava and lower part of the Danube so as meet European standards, differently from areas in Vojvodina where the state of art is more favourable.

Tourism will represent one of the fundamental branches of the Danube-Sava River belt economy. In its scope the creative use of rivers, of their natural and man-made surroundings, of natural and cultural heritage should be evaluated.

Studies of alternative *industrial development and redistribution* should precede the choice of strategic solutions. Development scenarios with at least three different options are proposed:

- The "zero value" or the scenario of "status quo";
- "Scenario of moderate changes";
- "Scenario of sustainable industrial development".

Preliminary evaluation of alternative industrial development (with inclusion of cost-benefit methods, ecological valuations, strategic impact assessments etc.) should be made by comparative analysis and estimation of mentioned scenarios.

The strategy of industrial eco-restructuring implies the decline in relative importance of some branches of the basic and intermediary sector (for example, energy, ferrous and non-ferrous metallurgy, non-metals, building materials production etc.), increase in intensive material branches, high-tech production with

the improvement of extant capacities impacts on the environment (mainly of the chemical complex, production and refinement of oil and its derivatives, metal processing etc.) and development of medium and small enterprises.

The industrial distribution strategy should be effectuated with view to observed problems of the existing spatial industry structure, to general goals of sustainable industrial development, the evaluation of the location factors aptness, potentials and constraints of industrial distribution, basic scenarios and development strategies, defined criteria and measures for directing the territorial industrial development. The choice of zones for industrial distribution upon defined criteria should contain principal spatial structure elements and forms (industrial zones, economic-industrial zones, free zones, port-industrial zones, mixed zones, housing-productive zones and other) with planning measures propositions and ways to activate certain zones.

The part of the *environmental protection strategy* will comprise general sections on:

- The state of art of the environment as a condition and limitation of development (state of the art of nature and ecosystems preservation and consequences of economic sanctions and NATO aggression upon Serbia, geo- and biodiversity; state of the art of spatial and environmental endangerment; state of the art of the environment as a development factor);
- Objectives in achievement of the sustainable environmental quality (ecologic and health criteria in the formulation and designation of development policies in respect to environmental protection requirements; criteria for rational utilization of natural resources and energy, preservation of biological diversity, protection and restoration of ecologically sensitive systems, definition of spatio-ecological capacities for various kinds of pressures etc.);
- Integration of ecological objectives in the development of economic branches;
- Obligation to establish ecological indicators and criteria of sustainable development as a prerequisite for further assignments and planning solutions;
- Nature preservation strategy (conservative and functional) and re-categorization of protected values;
- Measures for achieving objectives of ecologically sustainable development of the Danube-Sava River belt (measures for re-structuring of ecologic policy and introduction of the

monitoring system; financial and institutional-organizational support of sustainable development stimulation).

In conformity with the basic goals of *the cultural heritage protection strategy* (preservation of foundations and material heritage of the national and other cultures on the territory of Serbia etc.) following common principles of the cultural heritage protection and utilization in the Danube-Sava River belt have been adopted:

- Integral protection of heritage with natural and other spaces in which they are located and treatment of the heritage as development and economic potentials of the area;
- Protection of the heritage from uncontrolled construction and inadequate reconstruction, from industry, large infrastructure systems and other objects which could endanger the identity and integrity of the heritage and its environment;
- Valorization of single or group monuments in defined areas/zones of cultural heritage as a precondition for adequate protection and utilization of the heritage; the priority will be given to old towns and church communities, zones of archaeological sites, fortification objects, rural areas with valuable, authentic national architecture including the improvement of their transport accessibility; other heritage, which has not yet been adequately assessed and protected, primarily objects of technical culture (industrial, energy, mining, agricultural etc.), as well as other objects – testimonies of economic, social and cultural development (mining and workers settlements, parks of the spas etc.).

Due to its position and quicker development in relation to the RS, the Danube-Sava River belt had the greatest importance for the population and migrants influx from the whole territory of Serbia. Since the natural increase was relatively low, a high mechanical increase has taken place. The areas of Belgrade, Novi Sad and

regional (and sub-regional) centres played the most important role. In the future, it might be expected that the belt will function as an immigration area but that the tempo of the mechanical influx will slow down in comparison to previous periods.

One of the basic questions of the *strategy of the population policy*, distribution of population and agglomeration of economic and societal development is – the decrease of demographic growth of Belgrade, and partly of Novi Sad, particularly in the sphere of productive activities and strengthening of functions in other centres in Northwestern Backa, the Timok zone, parts of Obrenovac, Smederevo and Pozarevac. Postulating this strategy it is necessary to point out to the ways of development stimulation of medium and small towns in the Danube-Sava River belt. By means of that strategy the realization of goals of the Spatial Plan of the RS referring to the demetropolization of Serbia should be reached.

In this part of the Spatial Plan, the emphasis should be placed on directives and means for the immigration control (settling) and achievement of a more rational and perspective map of population density. It particularly refers to populating the zones of industrial and infrastructure development, tourism and weekend zones using less quality agricultural lands. By this strategy the question how to surmount autarchy and certain irrationality of construction on the Danube and Sava riverbanks, starting from industrial construction, housing construction and construction of objects for rest and recreation, should be answered.

One of the tasks of this strategy is to point to measures for the preservation of the natural attributes of the banks, including landscape features of the banks and their surroundings. We think that preservation of the landscape, form and organization of villages on the Danube and Sava riverbanks is essential in

addition to recommendations for reconstruction of the zones that have been constructed and, eventually the reconstruction, of disfigured landscapes. From the strategic viewpoint, this part of the plan should more precisely determine the locational guidelines and criteria, and the ways of comprehensive management of the Sava and Danube riverbanks to achieve a better preservation of their natural, historical and cultural attributes.

WORKING TEAM ORGANIZATION

The proposed way of the working team organization is new in the sense that a special Expert Group is formed as a part of the Team for the Synthesis of the Spatial Plan elaboration. The aim is to identify and provide cooperation with institutions of federal, republic and regional importance, particularly with the institutions and organizations working out plans for the EU and the Danube River Basin. The task of the Expert Group is to provide the exchange of information and opinions within Yugoslavia/Serbia (local communities, districts, public enterprises, etc.), between domestic institutions and foreign institutes. In other words, the principal task is to provide a clear insight into complete pertinent planning documentation of the neighbouring countries in the Danube River Basin, as well as into development of strategic and transregional importance, either adopted or in elaboration by the EU.

References

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