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# Agricultural Land and Spatial Development of Belgrade Metropolitan Area

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## Introduction

The metropolitan area of Belgrade is situated in the Danube-Sava Corridor. It shows all development processes in Serbia that influenced its spatial organization and social-economic functioning as a dominant development core in which various effects overlap and crucial development issues emerge. Enormous attracting force of Belgrade area is shown, among other indices, through free mechanical inflow of population that, in search for adequate life conditions, puts pressure on the capital funds, thus turning them to be insufficient. In this way, Belgrade inner development problems are growing in quantity and complexity under the strong outer influence. Great mechanical inflow of population was particularly conspicuous during the previous decade due to great number of war refugees afflicting the areas of the former Yugoslavia.

The period of sanctions, which radically changed conditions and circumstances, unstable social-economic processes with uncertain outcomes (due to the spontaneous process of transition that runs spontaneously), as well as due to the radical changes closer and wider international milieu, have caused considerable instabilities in Belgrade area. These disturbances will have some long-term consequences upon its social-economic development, which can already be seen in its spatial-functional organization and structure and will bear influence on it for the future as well.

Direct influence on the development of Belgrade Metropolitan area is exerted by its inner spatial organization and structure, within which particularly formed parts with specific development problems, possibilities and limitations can be distinguished. The key area is the narrow central part of the agglomeration, while the periurban area, with very complex and specific development problems, is directly leaning on this central part. However, this periurban zone has also a transitional character, because the contact zone of wider surroundings is leaning on it. All together, these three parts compose an indented spatial system of Belgrade metropolitan area, with the indications of further connections with the agglomerations of Novi Sad, Pančevo, Smederevo and Požarevac. In other words, the development of the central area is directly conditioned by the development of the mentioned parts, but also the other way round, by composing a jagged, spatially (un) organized unit (Van den Berg, 1989).

## Development processes

Major development processes should permit the elimination of capital problems and limitations that come altogether with the up-to-date development, by considerable transformation of formed structure, and with the attempt to remove negative tendencies and their effects. Transformation process also has to take into consideration the constellation of relations between the mentioned parts of the total area, so that to emphasize the fact that they are mutually conditioned and show consistent signs of interactivity. It is necessary to take into consideration that the development process in one part does not trigger new problems in other parts, and the other way round. Of course, this is not easy to achieve, due to heterogeneity and the emerging conflicts (Berger, Fruit, Plet & Robic, 1980). In this respect, the main development processes taking place within the constituent parts of the total area would be:

- In the central area – we notice an interest towards the reconstruction of the economic structure and an aspiration to encourage the development of the third sector of activities, with necessary re-allocation of mass production capacities and lower phases of processing. The main economic activity of this area must be directed towards high-profit organizations and institutions of management, as well as towards the development of fundamental activities and services such as: banking, insurance etc.
- In the periurban area – the creation of the conditions for its urbanization and the removal of the consequences of its uncontrolled growth over the agricultural land, which was particularly shown in the so-called "unplanned constructing" without the adequate communal conditions and equipment. Eliminating these problems requires enormous material resources, not only for their proper equipping, but also for their rational/effective "fitting" into urban standards and needs.
- In the contact zone – suburbanization is the main development process that needs to be directed in order to achieve a space rationally distributed system of suburbia with particular economic functions that lean on agricultural hinterland and production. In this way, the former conceptual idea of Belgrade as an "archipelago" would be re-affirmed and modified.

The scenario of possible, "sustainable", "balanced" development implies first of all the transformation of the structure, with the emphasis on the improvement of life, work and leisure conditions for the population, i.e. the improvement and conservation of the environment. This means large-scale actions, first of all in the technological infrastructure, and then on the system of the residential constructing, communal equipping and functionally connecting of work places and residence. The hypothesis that the unlimited city expansion is not possible, and that population and economic activities must be reshaped in accordance with the "conformable" possibility of usage of urban contents and services, is very easily recognizable and desirable as a development scheme for the present situation of Belgrade, nevertheless it must be preceded by the above mentioned consolidation phase. Centralization of the management of the socio-economic development, of administrative functions, and of the system of political and economical decision-making, represents the realistic basis for the development of various economic activities in Belgrade. These activities will achieve a relatively high level of efficiency (e.g. in reducing the expenses of communication).

### **Present state and conflicts in land use**

Land structure and usage in Belgrade metropolitan area were particularly influenced by the processes that took place during the last several decades. Apart from natural factors, anthropic factors considerably affected the land use, often disturbing the natural conditions and possibilities. As a consequence, the present situation offers certain possibilities for future development which would be in accordance with the spatial ecological conditions, although that could be considered as a kind of limitation as well. The particular characteristics of the present land usage structure are as follows:

Agriculture and forestry, the main sector of activities is characterized by extensive land use, occupies the greatest part of the total territory, while the secondary and tertiary activities (settlements, industrial production, traffic and traffic corridors – categories classified as "other land") occupy much less space. Regarding these facts, the following facts are important for the future development and spatial arrangement:

- forest land has been considerably reduced, below objective natural conditions and needs;
- the settlements show an extensive growth, taking place mostly without control, and usually occupying the most fertile land. This is particularly the case of the Southern part of the metropolitan area;
- the cultivated land is being reduced, often very intensively and without control.

A great number of collisions and conflict situations have occurred in the land use. These were either the consequence of insufficient coordination in planning activities at macro, regional and local level, or as a consequence of the lack of land use regime, which has been established

by legal acts and planning propositions. The main types of conflicts and collisions are as follows:

- quarrying activities in Kolubara and Kostolac quarries are often in collision with the use of land for agriculture and forestry, as well as with development and arrangement of settlements, and building and maintenance of traffic infrastructure;
- due to excessive use of chemicals in agriculture, there is a negative influence on the quality of ground waters and surface waters in the areas of water protection.
- on the other hand, water engineering activities often take up larger areas for the use of water resources, mostly on agricultural and forest land, but in the settlement areas as well;
- occupation of land for construction purposes is often in collision with other land use purposes, primarily with agriculture. Similarly, the expansion of construction land often has negative influences on the environment;
- ecologic aspects of land use are particularly stressed in the areas of high natural and ecologic value, which are legally protected. In this case, conflicts and collisions are present in relation to most activities which disturb or pollute the protected area;
- tourism activities often collide with the requests for exploitation or protection of forests, as well as environment protection in general. There are occasional collisions related to the requests for protection of some urban structures.

Within the territory of Belgrade metropolitan area, *the areas favourable for construction* activities are practically all the areas that are favourable for agriculture, particularly for cultivation. Based on these facts, the first impression would be that there are no considerable limitations for population and construction growth on the territory of Belgrade region. However, as these areas are at the same time favourable for agriculture, it is necessary to maintain the balance between the needs for food production and the needs for settlements growth, infrastructure, and other construction activities. Based on the natural characteristics of land, the *agricultural areas* are situated in Pančevački Rit (marshy area in Palilula municipality), a part of Srem region within Belgrade territory (Zemun municipality) and the zone of the Kolubara River mouth into the Sava River (Obrenovac municipality), as well as in municipalities of Barajevo, Sopot, Mladenovac, Grocka, and partially Lazarevac, Čukarica and Voždovac. In the wider metropolitan area, mostly all municipalities have a considerable share of agricultural land.

### **The main aim of land use and measures for its realization**

The main aim related to land use in Belgrade metropolitan area is the *preservation of high quality agricultural land in the closer and wider surroundings of the city*, as the main comparative advantage of Belgrade compared to other similar European towns. This characteristic directly improves the supply of the main foods and groceries, and helps to reduce the transportation costs. In order to achieve this strategic aim, it is necessary to take the following measures:

- infrastructure, road, railway and river traffic have to be concentrated along the development axes and main exit directions towards the surroundings, with the minimal construction zone along the corridor;
- residence and workplace densities in villages and suburban settlements have to be increased, but only if the conditions for residence and work are improved as well;
- in delineation of construction areas for settlements and adjoining structures, it is necessary to preserve the quality of the agricultural land and to establish harmonious relations at the line of contact between built and natural structures;
- there should be a tendency for reduction of construction areas, and to expand them only when it is absolutely justified;
- scattered construction out of construction areas should be firmly hindered, and area degradation stopped;
- zones for the construction of the weekend cottages can only be allowed on the land that is not used for agriculture;
- the most attractive landscapes – forests, coasts, viewpoints – should be protected from residence, leisure and other inappropriate construction.

## **Agriculture – spatial possibilities and organization**

Belgrade administrative area encompasses plentiful resources of agricultural land (although rather varied with respect to bonity), which occupies about 71% of total territory.

The manner of using the land is characterized by noticeable spatial differences that point to rational adjusting of previous production structure to natural, and partially marketing and infrastructural advantages. Long-term goal in the usage and protection of the agricultural land would be the harmonious linking of productive, economic, ecologic, landscape, and socio-cultural functions of the agricultural land and, more generally, the rural space as a whole.

This needs to be done simultaneously with the gradual improvement of the financial position of agricultural population, and with the improvement of standards and quality of life in the village.

The following actions have to be carried out in order to achieve this long-term goal (Djordjevic, 1993):

- preservation of the productive substance of agriculture;
- modernization of institutional framework for effective management of agricultural land as an integrated resource that consists not only of pedological layer and other biosphere elements, but also of road network, hydrotechnical mechanisms, protective green areas, accessory buildings, and other artificial goods;
- establishing a strict and effective control system for the usage of the agricultural land;
- increasing the usage degree of the human workforce, agricultural land, mechanical equipment, construction objects and other resources at the level of village settlements;
- limitation of the unfavourable impacts of the qualitative and quantitative development of mining and energetic activities on the agricultural resources in the municipalities of Lazarevac and Obrenovac.

Some favourable macro-economic conditions were established for accomplishing the following tasks (PPR Srbije, 1996):

- setting family agricultural farms with a healthy economic structure;
- improving the groundwater regime of the agricultural land, simultaneously with the elimination of the limiting impact of the lack of moisture during the period of vegetation;
- improving the marketing position of the agricultural-food industry sector;
- improving the technique and technology of the agricultural production;
- improving the bonity structure of agricultural land, and the preservation of natural diversity of the rural and periurban areas.

## **Conclusive remarks**

The operational tasks include the realization of the usage and protection plan for agricultural land in Belgrade administrative area, when establishing the integrated rural development policy.

Three main dimensions of that policy are (PPAP Beograd, 2003):

- establishing of the appropriate degree of coordination between agriculture and other economic and service activities in villages, and their combined development;
- integrated evaluation of economic, natural-ecologic, demographic, cultural, socio-psychological, ethnic and other types of potential of the rural areas, according to the aims of the new agrarian policy of the EU;
- re-affirmation of central and leading role of agriculture in: (a) preservation of social-economic life in rural areas, (b) provision of food-supplying security, (c) conservation of landscape, historic and cultural identity and ecologic balance in the wider area, and (d) care of other goods of non-marketing character, but of priceless public value.



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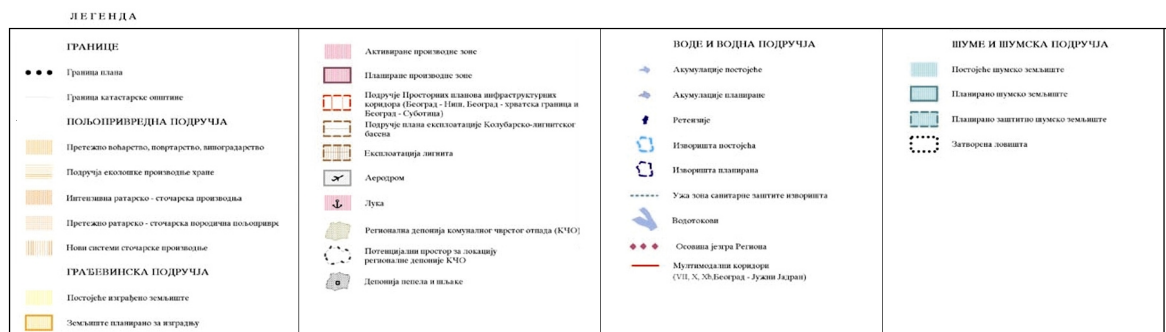
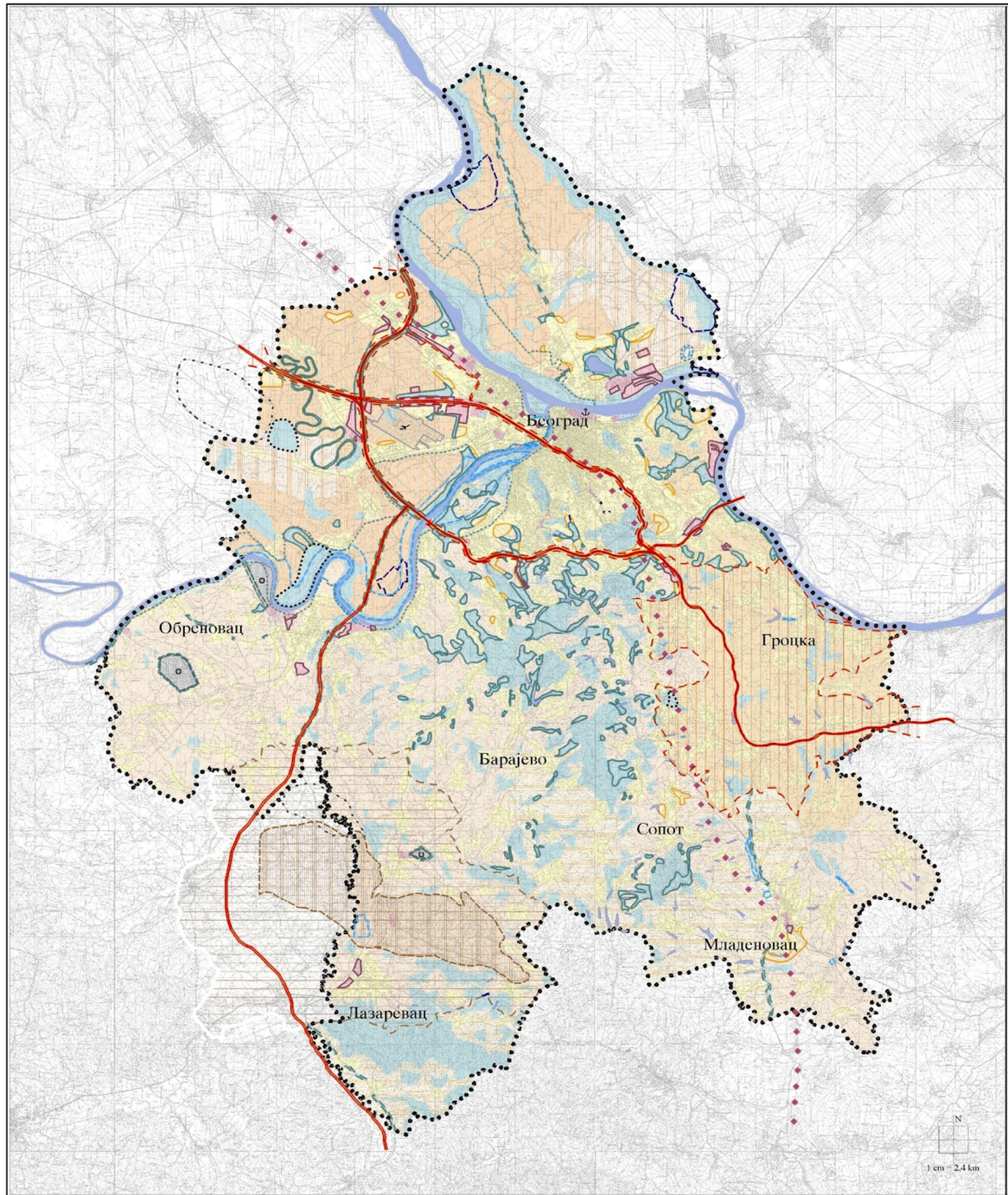


Figure 1. Land usage in Belgrade Administrative Area (source: PPAП Beograd, 2003).

Taking into consideration the economic and ecologic threshold of land substitution, the following solutions of planning have been established (based on the indicators of pedological and bonity structure of the area, the manner of using the agricultural land, the socio-economic characteristics of the agricultural producers, the expected demographic tendencies, the position in the system of settlements, the landscape values of the area etc.) (PPAP Beograd, 2003):

- afforestation of the areas with significant limitations in agricultural usage (VI and V bonity class) and planting protection woods in the locations that are specified in the forestry development plans (lines of traffic communications, areas of water-supply sources, towns);
- agricultural lands in lignite quarries are intended for successive forest repeated cultivation. This should be also applied for the areas around the trash dumps formed during the previous decade;
- serious examination of the spatial possibilities for residential-communal and economic construction within the area taken for this purpose in the previous period. Part of the land that previously was excessively occupied for those purposes should be restored to agriculture, if the land is not physically or chemically spoiled;
- improvement of the conditions for profitable cattle breeding, by sowing meadows on cultivation areas of VI to VIII bonity class (which are generally erosive and low productive for any type of crops), by pastures reclamation etc.;
- extension of areas for commercial orchards and vineyards of appropriate breeds, according to the Belgrade market requests, export possibilities and needs of food industry;
- providing of stimulation funds for realization of the programs of drainage, irrigation, land redistribution and complex arrangement of agricultural land (field roads, protective green belts, pedological evaluation and monitoring etc.);
- complete economic valorisation of production, marketing, ecologic, landscape, and tourism, recreational values of specific agricultural areas in Belgrade administrative area.

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