GENERAL DEVELOPMENT MASTER PLANS AS TOOL FOR SOLVING PRACTICAL PROBLEMS IN AGRICULTURE

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Abstract


Municipal general development master plans (MGDMP) determine the primary purpose of the territories in the municipalities as urban, agricultural, forestry, protected and damaged areas. Agricultural territories in turn are specifically intended for arable lands (fields, orchards and vegetable gardens, vineyards, meadows, etc.) and non-cultivated lands (pastures, slopes and ravines, gullies etc.) The increase of urban areas via the GDMP in most cases is for the account of the cultivated, high fertile lands. This requires the study of their land category of productivity and the development of an optimum variant for their conservation in the plan. The study of the balance of the territory and the possibilities for the preservation of farmland in spatial planning is a specific tool, analyzed in a few specific examples from Blagoevgrad, Stara Zagora and Samokov, through which conclusions are drawn about theory and practice with great effect for solving concrete problems in agriculture.

Key words: General Development Plan, Agriculture, Urban Planning, Integrated Planning, Purpose of Territory, Arable Lands

Abbreviations: MGD – Municipal General Development Master Plan; GDP – General Development Master Plan; DDP – Detailed Development Plan; ROM – Returned Property Maps; LPAL – Law for Preservation of Agricultural Lands; SPA – Spatial Planning Act; NRDS – National Regional Development Strategy; NSDC – National Spatial Development Concept; OCAL – Ordinance for the Categorization of Agricultural Land

Introduction

A municipal general development master plan /MGDMP/ determines the land purpose within each municipality. The main instrument, used to carry out the survey, territorial analysis, forecasting and planning of the land change, is the methodology of the development, expertise, discussing, accepting and realization of the MGDMP. That is why the effective management of agricultural lands is of great importance for the theory and practice (incl. regulations) of the urban planning and especially the specific scientific matter of the GDMP, which defines the main function of the territories in the municipalities as urban, agricultural, forest, protected and damaged territories for recovery. Agricultural territories are specifically intended for arable lands (fields, orchards and vegetable gardens, vineyards, meadows, etc.) and uncultivated lands (pastures, slopes and ravines, gullies etc.). The increase of urban areas via the GDMP in most cases is for the account of the cultivated, high fertile lands. This requires the study of their land rating category and the development of an optimum variant for their conservation in the plan. The study of the balance of the territory and the possibilities for the preservation of farmland in spatial planning is a specific tool, analyzed in a few specific examples from Blagoevgrad, Stara Zagora and Samokov, through which conclusions are drawn about theory and practice with great effect for solving concrete problems in agriculture.

Theoretical and Regulatory Considerations, Classification, Use and Purpose of the Agricultural Lands in the Development of the Mgdmp

While taking a decision for the development of a new or amended MGDMP, the Municipal Council is necessary to
adopt the terms of reference for the elaboration of the plan, accompanied by a supporting plan that carries specific information about classification of agricultural lands, their conservation and their exact location in the territorial scope of the municipality. From this initial stage on determination of the plan and the assignment of its elaboration arise some of the problems in agriculture and especially in the preservation of high fertile lands near urban areas. In accordance with the Ordinance for the Categorization of Agricultural Land «agricultural lands at the change of their purpose are categorized into 10 categories according to the productive capacity of soil, climate, landscape, and technological qualities of land, suitability for different types of production and land use restrictions under the conditions and in accordance with this Ordinance». Further on in the same Ordinance these ten categories of agricultural land are described, which play an important role in urban planning. Information on agricultural lands is derived from the data of the cadastral plans, land division plans and other plans related to the returned property to the owners of agricultural lands and land plots in forest areas (maps of returned property). These map information is used for elaboration of the general development master plans until the entry into force of the cadastral map for the territory concerned. Agricultural lands are sorted and classified according to their productivity from the highest and most valuable first category to the lowest tenth category: “Categories are determined by the average productivity, as follows:

1. The first category – lands with productivity over 90;
2. The second category – lands with productivity from 81 to 90;
3. The third category – lands with productivity 71 to 80;
4. The fourth category – lands with productivity from 61 to 70;
5. The fifth category – land with productivity from 51 to 60;
6. The sixth category – lands with productivity from 41 to 50;
7. The seventh category – lands with productivity from 31 to 40;
8. The eighth category – lands with productivity from 21 to 30;
9. The ninth category – lands with productivity from 11 to 20;
10. The tenth category – lands with productivity to 10”.

Of particular importance for this theoretical study is the fact that the basic mechanism in the overall planning toolkit for preservation or change of the use of agricultural lands has the methodology of elaboration, discussion, coordination, expertise, adoption and implementation of the MGD-MP. The procedure relating to the environmental assessment of the plan also has its importance, but crucial for the taking of appropriate managerial decision is the procedure for the preparation of the plan itself, not on its evaluation. This is confirmed in the majority of examples from the practice of urban planning related to the change of the use of the territories.

The Law for Preservation of Agricultural Lands also regulates categorically that “agricultural lands are primarily a national treasure and are used only for agricultural purposes”, and that “the change of the use of agricultural land is only allowed in exceptional cases, when a proven need”.

Moreover, even in the territorial scope of the settlements, in accordance with paragraph 5 of art. 2 of LPAL: “Protection from damage, restoration and improvement of fertility of agricultural lands apply to agricultural land included in the boundaries of settlements”. In 2011 a new article 17A is regulated in the law (SG 39/2011), which allows through urban planning and particularly through the GDMP to treat the functional change of the purpose of the territory freely and appropriately, namely: “change of purpose of agricultural land for non-agricultural use may be allowed for:

• Construction of objects of the technical infrastructure for the purposes of Spatial Planning Act;
• Creating new or expanding the boundaries of existing urbanized territories (cities and local entities);

Creating or expanding the boundaries of individual estate planning beyond the boundaries of existing urbanized territories (cities and local entities).”

Later the same law clarifies that “the owner of the land or the client of the object lodged a detailed development plan for the site or plot plan for the designated area for approval, under the conditions and in accordance to this Act, which

1 Paragraph 1, Article 1 of the Ordinance for Categorization of Agricultural Land (OCAL) adopted with the Decree 261 of 17.10.1996 (http://www.lex.bg/bg/laws/ldoc/-550455808)
2 Paragraph 2, article 1 of the OCAL
3 Paragraph 1, article 2 of LPAL, SG 35/24.04., last amended SG 98/ November 28, 2014 (http://lex.bg/laws/ldoc/2133870081)
4 Paragraph 3, article 2 of LPAL
5 Paragraph 5, article 2 of LPAL
6 Paragraph 1, article 17a of LPAL
demonstrate the specific size and boundaries of the land.”

Thus, the technology of the change of the purpose of the land is normatively governed by means of urban planning, and mainly through the methods of GDMP and DDP, which is confirmed by the following texts of LPAL as follows: “where there is in force a detailed plan, the owner of the land or the client of the object or the person who has the right to build in the property offers a change of the land for non-agricultural purposes. The committees referred to in art.17, par.1 within 30 days of the proposal lay down a decision to change the purpose of the agricultural land”9. “Agricultural lands are considered with changed purpose from the entry into force of the detailed plan, providing for the construction of a national entity or municipal entity of paramount importance, which are public state or municipal property.”

In the Spatial Planning Act, in chapter II “Purpose of the Territories and Land Property” is regulated, that “according to their main purpose, as determined by the concepts and spatial development schemes and general development plans, territories in the country are: urbanized territories (cities and local entities), agricultural areas, forest territories, protected areas, damaged areas, water territories, and territories of transport.”10 But it further specifies that “agricultural, forest or urbanized territories can be simultaneous with the purpose of protected areas as defined by law.”11. Here it is appropriate to note that it is possible to regulate more restrictive regime of the preservation of agricultural land through legal preservation. In the next set art. 8 of the SPA is clarified that “the specific purpose of land property is determined by the detailed development plan”12 and it can be: “… in agricultural areas for arable lands (fields, orchards and vegetable gardens, vineyards, meadows, etc.) and uncultivated lands (pastures, slopes, ravines, gullies, etc.)”13;

In the NSRD, in the part where the potential for the development of the south-west region is considered, it is mentioned that “preserved and attractive natural environment with the presence of numerous protected areas with rich biodiversity, as well as rich cultural heritage make it possible for agricultural tourism along with traditions in agriculture that have potential for overcoming the seasonality and providing year-round usage of the tourist base”14.

As a national strategic document of a highest rank, laying down the objectives and priorities for the development of Bulgaria in all sectors relevant to the achievements of the objectives of the Europe 2020 strategy, the National Development Programme Bulgaria 2020 provides a set of goals, which also contain the task: “development of agriculture to ensure food security and to produce the production with high added value in the sustainable management of natural resources”.15 But this wording about the development of agriculture remains too broad and unclear as mechanisms and tools to achieve it in this document.

In the NSDC “for more effective planning of land use integration of the peri-urban areas of major cities in the strategies and plans for spatial development shall be sought. Smart spatial planning provides the limitation of uncontrolled urban expansion as well as reasonable and efficient resources management of urban ecosystems”.16 Further it is referred that in 2008 the United Nations Economic Commission for Europe determined the spatial planning as an activity aimed at “coordination or integration of the spatial dimensions of the sectoral policies through territorial-based strategies, more complex regulations on land use and the contradictions between sectoral policies” and considers it a key instrument for the development and effective management, especially in the countries in transition.”17 The most significant advantages of the country are summarized in the following major findings: “The presence of areas with favorable conditions for the development of organic agriculture with fertile soils and clean and sufficient water resources, suitable climatic conditions, traditional industries and opportunities for diversifying the economic activity with the enterprises of the processing industry”18. The problems of the agricultural sector with spatial dimensions, summarized in the NSDC, are: “Fragmented property and slow process of land consolidation for more effective use of fertile lands; Unexploited potential of the irrigated lands, depreciated irrigation systems; Depopulation and ageing of most rural areas; A strong vulnerability and excessive de-

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7 Paragraph 7, article 24 of LPAL
8 Paragraph 2, article 24 of LPAL
9 Paragraph 7, article 24 of LPAL
10 Paragraph 1, article 7 of SPA
11 Paragraph 2, article 7 of SPA
12 Article 8 of SPA
13 Article 8(2) of SPA
14 NSRD (2012-2022) p. 39
16 NSDC (2015-2025), p. 15
17 NSDC (2015-2025), p. 16
dependence on agriculture; Loss of soil fertility due to water and wind erosion, monoculture farming, soil salinization, acidification and mechanical degradation; Heavily depreciated and/or missing basic infrastructure (roads, water supply) in rural areas.

The lands of the highest category should be a subject of strict conservation actions while changing the purpose and urbanism. The land resources, the traditional agricultural landscape and biodiversity are part of the national wealth of the country. “Their conservation, restoration and appropriate management are the main target for the sustainable development of rural areas in Bulgaria” 19. In the “Land/Soils” subsector of the NSDC it is specified that “of the greatest importance for territorial development are the measures and regulations governing the prohibition regimes for change of status of agricultural lands (especially those with a high category and the irrigated ones), as well as the lack of restrictive regimes for the lower categories of arable and irrigable lands. The results are lasting and irreversible transformations of the land use, construction and sealing of the soil and loss of land as a precious resource, connected with feeding the population”. 20 Attention is drawn to “territories for the conservation of landscape, natural and cultural values. In this group of territories with the specificity it is proposed territories for preventive protection to be incorporated in aim to conserve forests, fertile farmlands, valleys that make up important links at the national and the European ecological network, “blue” and “green” biocorridors, etc”. 21

Experimental Results and Studies

MGDMP of the Municipality of Blagoevgrad

Agriculture is not a determining factor for the municipal economy in accordance with the provisions of the MGDMP of Blagoevgrad. Farmland is now returned to the owners, which is why the whole agricultural activity is carried out by private farmers, but as illustrated in the figure a very small part of the territory has a high category of productivity (Figure 1).

Of the highest category are agricultural lands in the territory of Blagoevgrad and the villages of Belo pole and Riltsi, which are of 4th category (with average agricultural production conditions). Of the lowest category – rate from 0 to 20 (9th and 10th category), is the agricultural lands in the territory of twelve settlements. About 15% of agricultural land in the territory of Blagoevgrad are unsuitable for agricultural use, but depending on their location, they are reserve for future territorial expansion of the town. Analysis and precise graphics shows that the extension of the urbanized area of the town centre lies largely on the most valuable agricultural lands with high rate of productivity and that the optimal urban planning is of great potential for the conservation and the development of agricultural lands (Figure 2).

Regardless, that agriculture in the 1990s significantly reduced its share of the output of the Blagoevgrad municipality, this industry is an important source of income in the settlements outside the town. After the return of the ownership of agricultural land there is fragmentation of the land in the municipality (49773 real estates). The presence of numerous undersized plots of farmland leads to inefficient use of the technique, low efficiency in land use, the impossibility of applying modern methods in agriculture. The Municipal General Development Master Plan provides a number of events that will occur as a result of the changes in the territorial distribution of land resources (Figure 3).

Comparative analysis of territorial changes in total in the territory of the municipality show the following: Agricultural territories have been reduced in size during the project period with 17211 acres and are 274103 acres. The greatest decrease is in the area of arable land – with 15057 acres, including fields with 8536 acres, plantations with 796 acres, meadows with 166 acres and arable land with 5559 acres. Non-cultivated agricultural lands have been reduced to the size of 2154 acres. Forest territories have also been reduced to the area of 568 acres. Major changes are in the area of human settlements and other urbanized territories. Their total area in the period increased with 16901 acres and reached 53700 acres. The greatest increase is of the urban territory of settlements – a total of 8933 acres, including the town of Blagoevgrad with 6021 acres. This is at the expense of agricultural cultivated and uncultivated lands, production sites, warehouses, public land and built-up areas and many others outside the regulation. Territories of future urbanization shall be made in the lands of the town of Blagoevgrad with area of 1697 acres and in the village of Elenovo with an area of 63 acres. The territories of watercourses and aquatic areas have been decreased in size with 872 acres. Territories for the extraction of minerals and waste depots increase in size by 19 acres to build a transfer station in the land of Tzerovo. The territories for transportation and infrastructure have increased with 1731 acres and are settled on 4119 acres. The project envisages on the territo-

19 NSDC (2015-2025), p. 75-77
20 NSDC (2015-2025), p. 94
21 NSDC (2015-2025), p. 111
ry of the municipality, west of the river Struma, to switch the route of the Struma motorway and a new high-speed railway route in the direction of the south to Greece, the construction of which, together with the necessary rights of way on areas will occupy a total of 1869 acres – agricultural land, forests, water areas, production sites etc.

Options 1 and 2, illustrated in Figures 4 and 5, are made by a collective of NCTD, headed by Assoc. Prof. Dr. Arch. B. Borisov for the award of the municipal administration in conjunction with the received objections from the owners of agricultural land, located in between the Struma River and the highway I-1 /E-79/ and the conducted public hearings. Option 2 is of complete construction of the field, where are concentrated the most agricultural lands of high category.

**MGDMP of Samokov**

In the textual part of the GDMP of Samokov and the suburban territory, made by a collective of NCTD, headed by Assoc. Prof. Dr. Arch. B. Borisov, is stated that regardless of the fact that agriculture is not a determining factor for the economy of the town of Samokov and the suburban territory, it has important implications for the income of a part of the population. The municipality has considerable agricultural areas – 495342 acres. Per capita until 2008 13 acres of agricultural land. The total area of farmland, however, is only 153911 acres, or 4.0 acres per capita and cultivated land is even smaller.

Due to the mountainous nature of the terrain and the upland agricultural lands are fragmented into numerous undersized plots unsuitable for mechanized processing. High is the proportion of abandoned and unused farmlands. Existing irrigated areas occupy only about 5% of cultivated land, but irrigation networks and facilities are depreciated and partially destroyed. Land consolidation is a strategic factor for the development of the land market and the creation of competitive agricultural producers. In the GDMP the following suburban environments and landscapes are provided:

- **“Suburban wooden hills (parks)” – very characteristic elements of the suburban territory, which tower above the town and the Samokov field and combine indoor and outdoor landscapes of coniferous forests and meadows;**

SDMP Provision: setting up the hills as suburban forest parks for recreation and sport and tying them into a common system with urban public green areas, carrying out afforestation and urban events. The green system is developed as a “necklace” of parks, territories around the entire town with isochrone of pedestrian accessibility 10-15 min from any point of the city. The most important ones are: in the east – Rido locality, in the west – Prodanovski rid locality, in the north-east – Markova trapeza locality, in the west – the green courtyard of the former barracks, in the south – the Iskar Waterpark, and in the south-east – a forest park area of the former barracks and Boricho locality (Figure 6).

- **Riverside forests and meadows – occupy the vast territory with a park character downstream of Beli Iskar River, richly forested with coniferous and deciduous forests, pierced by open spaces with lawns and pleasant river pools;**

SDMP Provision: setting up the riverside area as a suburban Iskar Waterpark for recreation and sports.

- **Arable lands – mostly potato fields and permanent crops, located primarily in the west and north of the town in the lands of Dospey, Prodanovci and Dragushinovo, in the Samokov field, with a sense of breadth and nice views to the mountains;**

SDMP Provision: reducing the ploughing areas and increasing the permanent crops.

- **Uncultivated lands – grasslands and common lands, located in the Samokov field, north and west of the town and in the hilly territory to the east and south of the town, combined with expanses of coniferous forests;**

SDMP Provision: preservation of the character of these lands and the maintenance of the green cover.

- **Villages in the suburban territory – in the territory of the villages of Dospey, Prodanovtsi and Dragushinovo which has the typical landscape of compact mountain villages with predominantly double-deck construction of residential and farm buildings in the small estates;**

SDMP Provision: maintenance of traditional yard structure and character of low construction, improvement of the urban development.

- **Farms – located near settlements, with wholesale volume construction of farm buildings and vast spaces in between;**

SDMP Provision: refreshment and use the land of the old farmyards for new functions – modern farms and tourist sites.

- **Engineering infrastructure – waste water treatment plant in the north, with the character of the industrial environment;**

SDMP Provision: maintenance of infrastructure objects in good operating condition through urbanization and aesthetic and landscape events.

**Damaged lands – eroded lands, quarries, landfills – mainly from the extraction of inert materials along the banks of the River in the north, over the town and the waste tip in the east, uneaesthetic environment with an adverse impact**.

**MGDMP of the Town of Stara Zagora**

As it concerns Stara Zagora “there are fertile cinnamon forest combined with resinous and alluvial soils, located

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22 GDMP of Samokov and the suburban territory, made by a collective of NCTD, headed by Assoc. Prof. Dr. Arch. B. Borisov
along the Sazliika River. The soil quality has turned agriculture into a traditional activity and has determined the presence of a variety of cereal and vegetable crops among the fields along with deciduous woodlands in Sredna gora (Table 1).\[23\]

### Table 1

<table>
<thead>
<tr>
<th>Types of territories</th>
<th>Area in hectares</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urbanized territories</td>
<td>6244.90</td>
<td>6.25</td>
</tr>
<tr>
<td>Agricultural areas</td>
<td>63 133.80</td>
<td>63.15</td>
</tr>
<tr>
<td>Forest territories</td>
<td>27 637.80</td>
<td>27.64</td>
</tr>
<tr>
<td>Watercourses and aquatic areas</td>
<td>1762.20</td>
<td>1.76</td>
</tr>
<tr>
<td>Transport and infrastructure</td>
<td>1196.80</td>
<td>1.20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99 975.50</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

\[23\] The Municipal Plan for the Development of Stara Zagora, p. 14
Fig. 5. Option “The field -2” from MGDMP-Blagoevgrad

Fig. 6. Suburban environments and landscapes of the MGDMP (Collective of NCTD headed by Assoc. Prof. Dr. Arch. B. Borisov)

Fig. 7. Categories of agricultural land of the Municipality of Stara Zagora (Collective of NCTD, headed by Assoc. Prof. Dr. Arch. B. Borisov)

Fig. 8. Municipality of Slivnitsa – types of territories

Fig. 9. Categories of agricultural land of the Municipality of Slivnitsa
The Municipal Plan for the Development of Stara Zagora describes that “the overall view on the territorial structure of the municipality reveals a few basic patterns – forest and agricultural interlacing areas and corresponding activities, and the dominant role of the municipal center for the full functioning of the entire municipality.

The town concentrates the main economic and social activities and collects all important transport links to the town centre and joined a total of 51 villages, most of which have a population of under 1000 people, only Bogomilovo (1552), Dalboki dol (1532), Han Asparuhovo (1158) and Hrishteni (1749) exceed this number (according to the data of the national census in 2011). The distribution of the territory of the municipality of Stara Zagora is shown in Table 1. In the analysis of the functional structure of the municipality they are claimed agricultural and forestry areas.

“On the border between the two categories and the central position the town of Stara Zagora is located, uniting the functions of habitation, recreation, maintenance, production, and transport and communication role”25 (Figure 7).

In the MGDMP of Stara Zagora minimal change of the purpose of agricultural land for future construction and their inclusion in the urbanized area of the city is achieved through seeking alternative directions for territorial development in two aspects. Once, this is done through linear development in certain directions and the second time in the direction of the mountain slopes, where agricultural lands of lower category are.

**MGDMP of Slivnitsa**

In the elaboration of the MGDMP an accurate account of the factual situation of the agricultural lands has been made and a scheme, illustrating the size, location and their categories has been developed (Figure 8).

As can be seen from the above tabular and graphic materials, Slivnitsa municipality is with a total area of 187 433 km², the largest is the land of the town of Slivnitsa. According to the type and the needs of the territory, it is divided into:

- Areas used for agricultural purposes – 76% (132 138 acres);
- Areas used for the needs of the forestry sector – 17% (29 440 acres);
- Areas used for the needs of the settlements – 6% (9554 acres);
- Territories of the water areas – less than 1% (714 acres);
- Other territories – 1% (1565 acres).

The example with the MGDMP Slivnitsa is indicative of the smaller municipalities, where the pressure of the change of the purpose of agricultural lands is smaller and in the town planning there is a smaller risk for ineffective management of the sector’s development and agriculture. This example illustrates that even a small municipality with a small municipal center, like Slivnitsa, has reserve territories for development. Such a case is the former military land, allowing the conversion of its function and preservation of the agricultural land from potential future urbanization (Figure 9).

**Conclusion**

The illustrated examples demonstrate how important the town planning is in respect of agricultural lands and that more radical methodological and restrictive regulation of this process is necessary. The technology of the development of the supporting plans and the introduction of benchmarking through unified for the whole country methodological instructions and guidelines, and also through the regulatory requirement for the preparation and study of a comparative plan while working on the GDMP will contribute decisively to improve the planning and management of agricultural lands. Supporting plans should illustrate graphically, tabular and text the actual condition of agricultural lands and hypotheses on the possible options for their development /incl. the change of land for other purposes/ and to give the necessary information through the study and assessment of the consequences of choosing one or another option for the needs of the managerial decisions on agricultural lands.

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http://www.lex.bg/bg/laws/Idoc/-550455808

Spatial Planning Act, 2011.


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24 The Municipal Plan for the Development of Stara Zagora, p.15
25 The Municipal Plan for the Development of Stara Zagora, p.16