Planning Tools for Agricultural Territory in Bulgaria

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Abstract. Agricultural territory planning is the omitted item of land management in Bulgarian legislation. This causes unofficial, chaotic and non-holistic use of the Agricultural Territory with future negative consequences for farm, regional and state economy development. The objective of this study is to present a concept for strategic and on-farm planning of the Agricultural Territory and to suggest changes in legislation. Documentary analysis of normative, strategic, historical and other documents in respect of spatial and land-use planning has been conducted, including the National Strategy for Regional Development 2012-2022 and the National Concept for Spatial Development 2013-2025, Ordinances of the Council of Ministers, acts of Municipal Services of Agriculture, Analytical Reports on sustainable agriculture management on municipal level, land use plans and maps. Quantitative and qualitative methods for collecting and processing economic, geographic and statistical information were used. The paper presents an outline of a modern Agricultural Territory Development Concept (ATDC). Approaches for long-term strategic land planning on municipal level and short-term land planning on farm level are proposed. ATDC offers completion of Spatial Development Plan on municipal level with details of Agricultural Territory; includes recommendatory development zones that are based on the natural recourses distribution, quality of land and zoning of agricultural production in the country; outlines regimes and optionality of the territorial elements and development zones. The Concept gives general characteristics of a Land Use Plan (instead of Specialized Detailed Development Plan) and its territorial elements on farm level. As a result of the study, amendments to the regulatory framework are proposed too.

1. Introduction
Agricultural territory planning is the omitted item of land management in Bulgarian legislation. Bulgaria is a new democracy: only 120 years free of durable historical occupancy, 45 of which in a suppressing political regime. It has short and fragile experience in land management, which has not been given the chance to create traditions and nowadays is stifled by the globalization processes and the unconscious awareness of the national interest in land. Though world is rich in rules, research and good practice in land administration [1], Bulgaria is still far from the state of useful and efficient land use. Land ownership is very small and fragmented and this is still tolerated by the Law. There is no control on land market and no legal justification of land consolidation. There are no criteria for land buyers and leasers. This situation a has negative effect on the agricultural sector and quality of land, on landscape preservation and on tenure management. There are a lot of good examples in land management and spatial planning of highly economically developed countries, including members of EU. Germany and Netherlands are some of the best examples in Europe for traditions in implementation of a fair and strict land governance system, supported by rational land policy. It is
state regulated but under the initiative and control of the public: ‘locally when possible, centrally when necessary’ [2]. On the other hand integrated economic, ecological and social-cultural plans are implemented. Spatial planning coordinates all spatially relevant interests, functions, programs and projects. These countries are an example of efficient land administration through respective Land Codes, coordinating bodies of land-owners, descriptive data like legal and geodetic data, soil contamination, protected monuments, and nature conservation data. [2, 3]. Agricultural Territory planning in Bulgaria is underdeveloped and acts for a serious gap in the spatial planning process that hardly allows further integrated territory management. Spatial planning is somehow confined to land use planning, regulating exclusively the use of a certain piece of land and what is more other than agricultural. The objective of this study is to present a concept for strategic and on-farm planning of Agricultural Territory and to suggest changes in legislation.

2. Material and Methods

Documentary analysis of normative, strategic, historical and other documents in connection with spatial planning was used, including national documents for regional development, the National Concept for Spatial Development 2013-2025, Ordinances of the Council of Ministers, acts of the Municipal Services of Agriculture, Analytical Reports on sustainable agriculture management at municipal level, land use plans and maps. Quantitative and qualitative methods for collecting and processing economic, geographic and statistical information were used. Basing on the method of expert assessment, an up-to-date concept for the agricultural land-use planning was developed.

3. Analysis of the normative framework on agricultural land-use planning and justification of amendments and implementations

Strategic planning in Bulgaria is currently regulated by two acts - Regional Development Act (RDA) (prom. SG 50/30 May 2008, last am. and suppl. SG 15/23 February 2016) and Spatial Planning Act (SPA) (prom. SG 1/2001, last am. and suppl. SG 103/28 Dec 2017). They designate two types of strategic planning – one of them emphasizes on regional economic development and the other one - on territorial development. Both of them are united by same major strategic goals of the European regional policy: sustainable regional development and raising the standard of living. Strategic planning is implemented through a system of planning documents at regional, district and municipal level according to the European NUTS division [1]. The lower level documents are subject to the upper level documents and fulfil their prescriptions (Fig. 1).

RDA regulates two national-level planning tools: the National Strategy of Regional Development 2012-2022 (NSRD) [2] and the National Concept of Spatial Development 2013-2025 (NCSD) [3] (Fig. 1). The key strategic goal of NSRD is to achieve sustainable integrated regional development based on utilization of the local potential and cohesion between the regions in an economic, social and territorial aspect. Its goals ‘triad’: economic, social and territorial cohesion at European, national and regional level reflects the triad of the Europe 2020 Strategy for smart, sustainable and inclusive growth [3]. NSRD addresses Agricultural Territory in as its Objectives 1 and 4. It views it as part of the rural areas. It approves that Agricultural Territory is a basis for economic and social regional development and demographic revival; also, a basis for achieving environmental protection and economic convergence. Through development of the Agricultural Territory specific potential, regional competitiveness and rising of the living standards and quality of life is achieved.

Regional development is impossible without proper and rational spatial planning. The second document NCSD foresees integrated development of all types of territories. It is a strategic tool that gives directions for national space coherent development and protection of the specific use of each territory. It is a document that detects the main problems of the Agricultural Territory: small and fragmented land ownership; destroyed infrastructure; deserted land; amortized irrigation and drainage
network; incomplete institutional framework; insufficient prevention from the harmful impacts of water; loss of soil fertility; monocrop farming.

Figure 1. Scheme of the legislation documents on strategic regional and spatial planning in Bulgaria (source: National Center for Territorial Development)

The main provisions for the agricultural territory in NCSD are for: land consolidation; agricultural road network development; abandoned lands reduction. Four important points for the future of farmland are being discussed: conservation of soil fertility; soil erosion control; adaptation to climate change; developing meliorations.

In the hierarchy of strategic documents for territory development, an impending one is Spatial Development Plan (SPD), which is regulated by SPA. It has legal power for a 15-20-year implementation period. It legalizes the boundaries of seven different per permanent purpose of use territories, including Agricultural Territory and determines development zones, mostly for Urban Territory. Its predictions are obligatory and their failure to do so leads to sanctions.

SDP reflects some elements of Agricultural Territory (Ordinance No. 8/14 Jun 2001 on the Volume and Content of the Development Plans, prom. SG 57/2001) as follows:
1) arable land: cropping fields
2) arable land: permanent crops
3) uncultivated land: pastures, slopes, gullies, pests
4) area, which regime is influenced by environmental requirements (which may coincide with parts of Agricultural Territory)
5) terrains of allowable change of the primary purpose of land use

Unlike the urbanized territory, SDP does not specify zones and development regimes neither for Agricultural Territory, nor for Forestry, Protected nor Disturbed ones. It doesn’t impose development rules and standards and doesn’t provide spatial planning tools for land use within these territories. Only Art. 111 SPA addresses the abovementioned territories using the laconic text for elaboration of a Specialized Detailed Development Plan (SDDP) for solving structural problems if needed. Further, the specificity of Forestry, Protected and Disturbed Territory development is reflected in an each territory particular act, while Agricultural Territory development is omitted by land legislation.
Nowadays land legislation contains some peculiar characteristics which reveal its incompleteness and backwardness with regard to Agricultural Territory development. Firstly, Agricultural Land Ownership and Use Act (ALOUA) (prom. SG 17/1 March 1991, last am. and suppl. SG 61/5 August 2016) regulates land acquisition; the one-year land use by means of formation of massifs for use; and to some extent voluntary land consolidation. Comprehensive Agricultural Territory development is out of the attention of this law and it is inefficient in this sense. Secondly, ALOUA still contains texts on land ownership restoration, which has officially been completed in 2000. The Inheritance Act (prom. SG 22/29 January 1949, last amend. SG 47/23 June 2009) regulates mandatory minimal sizes of land properties: 0.3 ha for cropped fields, 0.2 ha for pastures and meadows and 0.1 ha for perennial plantations. Measures for conservation and restoration of soil fertility are regulated in Agricultural Land Protection Act (prom. SG 35/24 April 1996, last amend. SG 61/5 August 2016). Prohibition of change of the permanent purpose of use is also regulated but without strict control on it. The process of transfer of Agricultural Territory to Urban Territory has become most intensive after 2006. Agricultural Land Lease Act (prom. SG 82/27 September 1996, last amend. SG 13/7 February 2017) regulates just land relationships. There is no legal control either on farm structure and upper size of leased property or on land market and land cycle. There are no requirements to the land buyers. There is a serious gap with regard to agricultural land-use planning, which poses risks of negative development of farms’, region’s and state’s economy, such as: loss of arable land; provoking soil degradation processes; harmful effects of the environment; landscape disturbance; no use of the land yield potential; no rational use of the agricultural machinery; no optimal labor organization; negative demographic processes; negative effect on other economy sectors development, etc.

This gap causes unofficial, chaotic and non-holistic use of the Agricultural Territory potential with poor meeting of public interests. Only the individual interests are explicitly protected: in Art. 17, para. 3 Constitution of R. Bulgaria (prom. SG 56/13 July 1991, amend and suppl. SG 100/18 December 2015) with the text: "private property is inviolable" and in Art. 4, para. 1 ALOUA: "proprietors shall be free to determine the method of use of the agricultural land according to its permanent purpose of use".

The definition of Agricultural Territory in Art. 45 of Ordinance No. 7/22 Dec 2003 on the Rules and Norms for the Design of the Different Types of Territories and Development Zones (prom. SG 3/2004) is "territory for agriculture, which permanent purpose of use cannot be changed". This regulation must comply with the provisions of a SDP in force. The concrete designation of the agricultural landed properties according to Art. 8, item 2 SPA may be farm land and non-farm land. This formulation is rather general. It doesn’t reflect the diversity of land use patterns in Agricultural Territory and the ways of sustainable use in the so-called "farm land".

Art. 53, para. 1 Ordinance No. 8 imposes that the objective necessity for elaboration of Agricultural Territory SDDP must firstly be justified. Art. 105 and 109 SPA provide for subjecting of SDDP design elements to the foreseeing of SDP.

A legal need for agricultural land-use planning on "administrative-territorial unit" and "territorial unit" level is discovered in Art. 37c ALOUA. It regulates the distribution of land-use massifs in case of rent and cooperatives relations. Land-use planning in this case concerns just the distribution of those massifs for the sake of consolidated treatment of land. Mutual consent of the participants in an “Agreement on Distribution of Massifs for Use” is required. This planning is legally valid for one year only and without any development regime specified. Others types of intervention in the structure of Agricultural Territory are through land acquisition. Current legislation does not contain aggregate indicators to link Agricultural Territory planning on “farm level".
The on-farm level of territorial planning of owned or leased land is not legally regulated and is a matter of private initiative without stringent requirements and rules. The landlords today are legally concerned with the right to: freely choose the method of permanent purpose of land use, fulfill the requirements for land protection but without strict accountability for implementation; follow the included in the Agreement on Distribution of Massifs for Use clauses.

SDDP, as regulated by Art. 111 SPA, is supposed to not having entire conceptual connectivity to DDP. The nature of DDP, according to SPA [2] is defined in the following texts:
- Art. 108 SPA: DDP is related to and is mandatory for investment design.
- Chapter Six of Ordinance 8: DDP specifies the content, scope and regime of the territory of a settlement or settlement formation and its territory.
- Art. 134, para. 3 SPA: an amendment of the DDP part "development regimes" requires the DDP amendment by executing of its whole creation procedure.

On the other hand, SDDP for Agricultural Territory is supposed to indicate a land-use pattern. Hence its indicators are not to be construction ones but including economic and environmental criteria development indicators. In this sense, it needs specific regulations and a specific name, such as a "Land-Use Plan" (LUP). The term Land-Use Plan exists in a legal document, such as the Rules for the Implementation of Agricultural Land Ownership and Use Act (RIALOUA) (adopted by Decree of the Council of Ministers 74/1991) and is referred to (Art. 13a, para. 4, it. 2 and in Art. 18b, para. 1) as a structural land-use plan (a graphic documentary) of a past historical period: the one of the centralized economy cooperative and state-owned farms formation. The terms "Land-Use Draft Project" and LUP are found in several strategic and municipal planning documents. Some legal and administrative acts that solve private property problems also mention them.

4. Results and Discussion

4.1. A concept on completing SDP with agricultural territory zones, elements and their regimes

The text "the proprietors shall be free to determine the method of use of the agricultural land according to its permanent purpose of use" (Art.4 ALOUA) presupposes these regimes cannot be mandatory.

The regimes of the farming zones should closely be related to the natural production factors and to legislation in force. Land use is definitely dependent on variable in place and time natural conditions, which are. Moreover, the long-term functioning of the agroecosystems is dependent on the stage development of crops and the interaction between the natural factors (biological units: crops, animals, etc.) and the anthropogenic pressure. This affects the period of implementation of any land-use plan which may be shorter or longer than that of SDP.

There is contradiction between some legal texts. The regimes (boundaries, method of permanent purpose of use) of the territorial elements “arable land: cropped fields”, “arable land: perennial crops” and “non-cultivated land” are mandatory, according to Art. 2 of Ordinance 8. On the other hand, Art. 4, para. 7 of Ordinance 7 designates the activity in the agricultural landed properties as "agricultural activity". Therefore the farming regimes should be in accordance with the nature of agricultural use and soil fertility maintaining and improving measures. Hence, strategic planning of Agricultural Territory use cannot blindly follow the formal mandatory rules of SDP.

The function of the agricultural land as means of production determines the specificity of its planning, both in terms of scope and content of the plan, and in terms of method of operation. In Agricultural Territory there are permanent territorial elements mainly of the engineering infrastructure, which represent other territory types. They are legalized by SDP and implemented by DDP. Some main agricultural roads (that have the Agricultural Territory permanent purpose of use) connect
important territorial elements. They are given the long-term regime of SDP. Other such lasting elements are the unused non-categorized lands such as pests, gullies, rays, etc.

Having in mind the peculiarities of agricultural land use, the following Agricultural Territory development zones can be recommended:

1) **Development zone for market-oriented agricultural production.** This zone represents the major part of an Agricultural Territory. It is the main development zone. It implements the entrepreneurship by natural and legal entities for primarily market commodity production. It will cover the main methods of permanent use: fields, perennial plantations, pastures and meadows. The application of different systems of agriculture, mechanization, and integrated land use is peculiar for this zone. The planning regime is long-term and recommendatory. Sub-zones with recommendatory development regimes will be set up. A criterion for their formation will be the method of permanent use that is regulated by Ordinance RD-02-20-5 of December 15, 2016 to the Cadaster and Property Register Act (prom. SG 34/25 April 2000, last am. and suppl. SG 57/22 July 2016) and the availability of technical infrastructure serving the agricultural production process. The source of their determination is the agricultural production zoning of Bulgaria and land quality assessments. This concept provides for the following recommendatory development sub-zones in SDP:

- Recommendatory field development zone for arable crops and crop rotations: annual cereals, industrial crops, annual and perennial fodder crops; for growing vegetables, flowers and ornamental plants; for greenhouses with temporary and permanent construction; for fallow land.
- Recommendatory permanent crops development zone
- Recommendatory pasture development zone
- Recommendatory meadow development zone
- Recommendatory mixed development zone for combining agricultural production with other kinds of production and tourist function (e.g. a tourist farm with a profile of viticulture and wine / beekeeping / fruit growing, etc.)

Given the existence of agricultural areas with registered deviations from the natural state of soil as a result of soil degradation and techno-genic contamination, it is necessary to add recommendatory regimes to SDP in order to carry out the necessary activities for restoration of soil fertility. Territories with constructed irrigation and drainage systems will also be indicated in order to restore the performance of these systems and to increase the agricultural yield. The following areas should be indicated:

- Territory with prediction for irrigation/drainage
- Territory with degraded ecological functions of soil cover
- Territory with peculiar development regime: with built-up, in construction or with open procedure for construction of irrigation systems, re-cultivated terrains for agricultural use, etc.

Subject to the recommendations of this zoning, the following desired effects will be achieved: the chaotic transformation of the fields into land for permanent crops, meadows, etc. will be limited and vice versa; the traditional production of national importance, such as the production of roses and other essential oil crops will be preserved; the structure of agricultural production will be improved by growing an appropriate amount of intensive crops: fruits and vegetables; the integrity of pastures and meadows with a focus on preserving the biodiversity and providing grazing areas for livestock farming in the future will be maintained, etc.
The complex interaction between the spatial model elements of Urban and Agricultural Territory, is a prerequisite for the formation of two other areas of agricultural activity, although with very small scope.

2) **Suburban Agricultural Zone (SAZ) for the cities-centers** (of 1st and 2nd hierarchical levels, according to NSRD [3]). In both cases, land availability is a determining factor. The suburban agricultural area is a transitional area between the Urban and Agricultural Territory. It is of ecological significance to create a natural environment around the major cities and to provide a quick contact with the natural life factors. Another important role of the suburban agricultural zone is to create a spatial limitation and ecologically "natural break" of the urban environment. The suburban agricultural area gives the chance for direct serving of citizens with fresh foods. Because of its proximity to the urban area, it is suitable for personal and family entrepreneurship for limited agricultural production. Part of the suburban agricultural area should be designated as land with a permissible regime for change of its permanent purpose of use. This part should be of low natural value ("bad" and "unsuitable" for agricultural production). The terrains with permissible change of use shall not exceed 50% of the area of this development zone [5].

The suburban agricultural zone includes all elements that are typical for the Agricultural Territory and defined by SDP. There can be cropped fields, perennials, pastures and meadows. Because of its limited range and small-scale agricultural production, it will be suitable for nurseries, family gardens, greenhouses, growing of flowers and planting material, experimental fields for scientific purposes, etc. The density of the field road network is expected to be quite high here.

Agricultural land with a specific regime, including agricultural plus recreational activities, should also be found in SAZ.

3) **Urban farming zone within urban areas, mainly in the cities-centers** (of 1st and 2nd hierarchical level, according to NSRD [3]. Landed properties for urban farming are needed in the large urban centers for: 1) contact with nature environment: in this sense, similar properties can be planned as part of the city's green system; 2) primary and fresh food production. In an economic sense, this area is for private and family entrepreneurship, small-scale agricultural production for family needs and in some cases for market (subsistent agriculture, urban agriculture). It is appropriate to be included in the overall planning of urbanized territories. The planning tool is the DDP by the order of Art. 15-17 of SPA, which sets the concrete designation of the properties for agriculture and rules and norms for their land-use planning. This zone should exist under specific eligible economic and concomitant activities and anthropogenic impact that does not conflict with the urban functions [5].

The main role of SDP as a strategic spatial planning document is to provide a complete layout and foreseeing for the development all territory types. It has to protect the public interest in extracting the necessary ecosystem services and in preserving of the natural quality of the land. The idea of protecting agricultural land quality and production function requires a flexible legal approach. In order to fulfill the commitment under Art. 106, items 1 and 2 SPA that SDP is set up for all types of territories, including the agricultural ones, it is necessary:

1) to develop a concept-scheme for Agricultural Territory development in the scope of SDP with recommendatory nature. The implementation of its projections could be stimulated by adequate agricultural production policies, subsidizing, land tax policies and other financial mechanisms.

2) to amend Art. 2 of Ordinance 8 [7] with certain structural foreseeing for the Agricultural Territory: development zones and territories with recommendatory cultivation regimes for different agricultural crops, applying different systems of agriculture, amelioration activities, measures for
prevention of degradation processes, etc., corresponding to the local soil and climatic conditions and as an extensive approach to optimizing of land use.

4.2. A concept on the content and scope of a Land Use Plan for the agricultural territory on farm level

According to Art. 111 SDP, elaboration of a SDDP is intended for solving structural problems of a territory, which translation for the Agricultural Territory means optimization of the land use. Its elaboration is motivated by creating proper territorial conditions for agricultural production, nature conservation, proper use of agricultural machinery, and farms and regional economic development. Since SDDP for the agricultural territory is not intended for investment design but for functional organization of the territory, it is correct its name to be Land Use Plan (LUP). Its regimes should cover a certain period of time, which can be short-term for field crops and meadows, middle-term for permanent crops and pastures and long-term for linear elements like main agricultural roads, etc. LUP may contain arrangements for soil fertility improvement and public works like irrigation and drainage system construction, anti-erosion forest belts and terraces, design of a temporary agricultural road network, development functions like crop rotations, rotation grazing, rotational mowing, etc. Land-use planning should be carried out at the request of the landowners and land-users and for the sake of holistic agriculture practicing. It should be developed by respective specialists. LUP is to be elaborated for the territory of:

- a farm
- a part of a farm
- a group of agricultural holdings or a part of their total territory

LUP should treat the agricultural use in accordance with the integrated functions of agricultural territory according to the relief, climate conditions and anthropogenic interference. It may include the following territorial elements (Fig. 2):

- Agricultural land for cultivation of arable crops and introduction of crop rotations with annual cereals, technical crops and annual and perennial forage crops; for growing of vegetables, flowers and ornamental plants, greenhouses with temporary and permanent construction, two-year artificial meadows, land for production of seeds and propagating material; fallow land.
- Agricultural land for perennial cultivation of vineyards, orchards, nurseries, etc.
- Agricultural land for grazing livestock - pastures
- Agricultural land for meadows.
- Land with foreseeing for irrigation/drainage
- Land included in an irrigation/drainage system and/or have approved projects and projects in process of validation for construction of an irrigation/drainage system
- Land with deteriorated fertility of soil that requires special activities to be applied: ameliorations, prevention of floods and foreseeable disasters, etc., forest-ameliorative and hydro-technical measures for protection of the soil cover from water and wind erosion, etc.
- Unprocessed agricultural land - unused land with developed shrub and forest vegetation (including those protected under the Forestry Act (prom. SG 19/8 March 2011; am. SG 17/26 February 2019), ravages, gullies, slopes, field roads, serving the field production terrains, etc.
- Territory for permaculture farming (including alternative and organic farming)
- Territory suitable for land consolidation
- Territory for agricultural use plus recreation function (under §4 of the AR of ALOUA)
- Route of the main and secondary earth road network
- Animal path
- Crop rotation field
- Rotational grazing plot in a herd massif
- Terrain for an animal summer camp and water supply in a pasture
- Sequential mowing field in a meadow.
Depending on its objectives, LUP will be developed on the basis of: cadastral map; soil map; map of soil categories; exposure map; map of the slopes; ownership map; schemes of irrigation systems and irrigation areas to them; schemes of the amelioration activities envisaged for the project for restoration of soil fertility, SDP, Municipality Development Plan, farm business plan, etc.

The LUP regulation could be in a separate chapter to Ordinance 8 to SPA. It is also appropriate to regulate the scope and content and the technical implementation of LUP by a separate Ordinance to SPA.

5. Conclusions
The analysis on Bulgarian regulations of the Agriculture Territory planning reveals incompleteness of legislation that causes adverse effects on private, state and public interests:
- There is no direct engagement of Spatial Planning Act to Agricultural Territory development.
- There is no specialized act on Agricultural Territory development, even on land consolidation. ALOUA is old and inefficient. It has fulfilled its major role for restoration of land ownership.
- There are no legal texts for comprehensive land-use planning in the Agricultural Land ownership and Use Act. This puts obstacles to efficient agricultural production, soil conservation, environmental protection and economy development.
- There are no statutory restriction on the upper size of land owned and leased area. That causes inefficient agricultural production and processes of depopulation of the rural areas.

Figure 2. Land use plan for crop rotations in the territory of an Agricultural Cooperative in Krumovo Gradishte village (source: elaborated by Eng. Geno Ivanov, UACEG)
There is no control on land market and land cycle. There are no requirements to the land buyers. The legalization mechanisms for sustainable land management control and stimulation are insufficient. The procedure for the change of the permanent purpose of use for construction purposes is very liberal.

Long-term (strategic) and short-term (on-farm) planning of land use should consider changes in the Spatial Development Plan on municipal level and elaboration of a Land Use Plan for on-farm level. As a result of the study, two proposals are made:

1) Elaboration of Specialized Scheme-Concept for Agricultural Territory development within the scope of the Spatial Development Plan, which unlike the basic plan, is recommendatory.

2) Elaboration of Land-Use Plan (instead of Specialized Detailed Development Plan), subject to the Specialized Scheme-Concept for agricultural territory in the Spatial Development Plan but dealing with structural tools for the inherent scale.

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