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**TOWARDS A NEW CONCEPT FOR THE AGRICULTURAL LAND-USE
PLANNING IN THE NEW SOCIO-ECONOMIC CONDITIONS IN
BULGARIA**

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ABSTRACT

The goal of this paper is to present a new concept for Agricultural Land-Use Planning as a land-administration activity in today's market economy. The planning process consists of preparing projects for land use in the agricultural territories. Agricultural Land-Use Planning is developed for the purpose of materializing and stabilizing land tenure, for environmental protection and for ensuring efficient farm economy. The current market economy conditions are new to the country. So far, land management has served the principles of the centralized planned economy under the totalitarian governance of the land. The main deficiencies of that governance are connected with the alienation of land owners from their properties and the liquidation of their interest in land stewardship. Another problem has been the occurrence of soil degradation processes as a consequence of extreme soil exhaustion. The cooperative land cultivation in the past prevented land-use planning from addressing the issues of land tenure.

The socio-economic conditions of today's market economy pose new challenges to the Agricultural Land-Use Planning due to differing and compliance the interests in the public and private sectors. The strategy has to be constructed in such a way that it simultaneously secures land-tenure, environmental protection, and the farms' economic prosperity. This brings together a number of activities such as research and assessment of soil quality, agricultural cadaster, appraisal of land property, soil protection and soil fertility, environmental and landscapes protection, agricultural land structure design, etc. Based on a survey conducted among professionals and farmers, and on the authors' critical approach, a new concept for the Agricultural Land-Use Planning as a socio-economic activity has been developed. A number of design activities in the dynamic market environment are included, as well. The paper is written in the form of a comparison between the two socio-economic systems (centrally planned land-use and cooperative land cultivation systems) and contains the main highlights of the new concept.

Keywords: *land policy, land legislation, agricultural land-use planning, land tenure, land protection.*

INTRODUCTION

Agricultural Land-Use Planning is an activity that is a part of land administration. It consists of preparing projects for land use in the agricultural territories and serves the following purposes: 1) to stabilize land tenure on the terrain; 2) to plan activities for preserving and improving soil fertility; 3) to provide environmental protection; 4) to provide optimum use of the agricultural machinery; and 5) to ensure good land-use conditions for the efficient economic development of the farms. During the country's centrally planned economy, there were no clear stimuluses for achieving these agricultural land management goals. The lack of efficient private property, real land market and economic competition turned the Agricultural Land-Use Planning into a well-motivated activity with no practical value. The only real governing factor – the State – failed at implementing the Agricultural Land-Use Planning. Only some cooperatives and state agrarian enterprises, led by fairly competent managers, were able to partially implement it. In general, though, there was lack of holistic approach to land-use planning. (one can hardly find Agricultural Land-Use Projects from that time). This affected negatively the individual interest in land ownership and stewardship. Land property alienation resulted in irresponsible exploitation of natural resources, extreme exhaustion of the soils and establishment of soil degradation processes. The land use was clearly unsustainable.

Nowadays, Bulgaria is part of a global policy for combating hunger and preserving the land as a natural resource. The socio-economic conditions of today's market economy, however, create complex issues for the Agricultural Land-Use and Planning, based on private and public motivation. The cooperative land cultivation in the past prevented land-use planning from addressing the issues of land tenure. Today, Agricultural Land-Use Planning serves three main goals: land-tenure protection, environmental protection, and economic prosperity of the farms. To complete these goals, the following land-administration activities take place: research and assessment of the soil quality, agricultural cadaster, appraisal of land property, soil protection and soil fertility improvement, environment and landscape protection, and agricultural land structure design, among others.. (Williamson et al., 2012).

Market economy is new to Bulgaria. The modern land-use planning strategies meet the following pre-existing conditions in the country: land ownership multiplicity; individual control over the land; dynamic market relations, and the treatment of land as a commodity. Agricultural Land-Use Planning aims to create new territorial conditions for the regulation of land relationships, for the protection of land-tenure rights, for soil and environmental conservation, and for providing information for efficient land management.

This paper will introduce a frame of a concept for Agricultural Land-Use Planning as a socio-economic activity for collaboration between existing and newly established land properties, which will benefit both parties and will contribute to the rational use of land resources in the specified area. The concept has been based

on the author's own experience and on a survey conducted among professionals and agricultural producers. A number of design activities which consider the dynamic market environment are included. The paper is written in the form of a comparison between the two socio-economic systems (centrally planned land-use and cooperative land cultivation systems) and contains the main highlights of the new concept.

MATERIAL AND METHODS

The paper is based on pre-existing literature in the field of land-use planning and on the author's personal research. To inform the development of a new concept for Agricultural Land-Use Planning a questionnaire survey of professionals and producers was conducted by the authors. Two focus group discussions were conducted to acquire more in-depth information and qualitative context. The data gathered through these methods were systematically recorded, organized, compiled, tabulated, computerized, and analyzed in accordance with the objectives of the study. A variety of statistical analysis such as frequency, range, mean, percentage, distribution, standard deviation, categories, etc. were used to describe, represent, and explain the relationships between the variables in this study. Researchers collected the data personally in 2015 through face-to-face visits with all selected interviewees. The data was collected from 250 respondents - 50% professionals in agricultural land management and 50% agricultural producers.

The questions asked of professionals were divided into four thematic groups: (i) *land legislation* – what is the current legal and regulatory context governing land use and are there any potentially beneficiary changes in the laws and regulations currently governing spatial planning, land ownership and use?; (ii) *Planning for agricultural land use and consolidation* – is it important for solving the contemporary environmental and economic issues and for obtaining EU and national subsidies for agricultural production?; (iii) *Agricultural land use projects and plans* – are such projects significant to the economic development of a farm economy and what is the best mechanism for financing them? (iv) *Land ownership* - what is an optimal property size from both economic and social perspectives?

The central questions for the agricultural producers were related to the following fields: (i) *Problems in agricultural production* – are there any legal or financial problems effecting production, and what are they?; (ii) *Problems in situating and applying crop rotations* – are there any significant issues and could these be alleviated with professional assistance?; (iii) *Agricultural Land-Use Planning* – is there a benefit or opportunity for improving and expanding land use planning amongst farmers and how would this expansion be funded? (iv) *Land use plans* - what features of those plans are important for proper economic and environment development?; (v) *Quality of land* - what is the current base quality of each farmer's land and does the farmer apply measures for improving it?; (vi) *Land property* - what is the optimal size for land ownership; and (vii) *Land leasing* – are there problems with this system and what are they? The development of a new approach to Agricultural Land-Use Planning is based on the knowledge of land legislation in different countries and different approaches to land administration.

RESULTS AND DISCUSSION

During the period of planned economy, the main objective of the land development policy was to organize the territory in such a way that it expands the socialist reproduction, “on behalf of the organizational and economic strengthening of the socialist agricultural enterprises... ” (Michev, 1978). By means of land-use planning, the socialist state “regulated” the imaginary at that time land relationships. Land management and land-use planning served the interests of a small body of governing personnel that considered a limited number of issues, mainly maximization of the production results (Michev, 1978). Protecting the inviolability and the integrity of the state and municipal land seemed to be the only reasons for land management. The management policies were mostly dedicated to creating conditions for intensification of the agricultural production. Land use was treated regionally, without considering the global environmental problems of the planet and without taking into account the real engines of the economic progress - private property and market competition. The updated land-use planning concept of the transition period is connected to the main objectives of the democratic process – the democratization of society, the rationalization of economy and the social balance. The limitations of the socialist land management and land-use planning became realistic on the base of the natural socio-economic conditions. The return to normal living conditions brought a combination of factors, which introduced new requirements and evoked new challenges to land management. The new factors consisted of: multiple ownership of land; efficient private property; market regulation of land relationships; market competition; functioning market economy; restored producer-consumer connections; the information revolution based on computerization and new technologies; new era of synthesis; globalization and location of the productive forces; new role of the state. There is awareness of the environmental issues - the deficit of the planet resources, the demographic problems, climate change, shortage of food and feed, need in particular and safe foods, new branch structure. The State policy for land and agriculture is realized by new legislation (Fig. 1).

Currently, private property and land-use in our Bulgaria suffer several deficiencies: (i) lack of adequate state policy during the period of Land Reform to guarantee further consolidation of land ownership; (ii) lack of legal mechanisms to prevent land ownership from further fragmentation in the process of ongoing inheritance, partitions and buys/sales transactions; (iii) improper management of land and water resources, improper management of land relationships and the agricultural production process (which results into a dual agricultural structure where a small number of large farms wield significant part of the agricultural land and a large group of small semi-subsistent farms wield the considerably smaller part); (iv) lack of legal certainty for land tenure which evokes problems for obtaining EU subsidies for agricultural production; (v) lack of state guarantee for the market sales output which affects the agricultural production structure negatively and makes it inefficient;

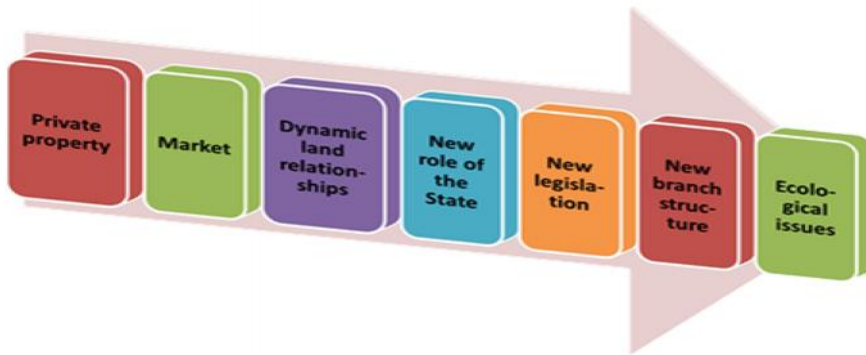


Figure 1. Towards a new land administration concept in the contemporary socio-economic conditions.

(vi) losses of GDP because of inefficient use of the irrigation and drainage infrastructure; (vii) great discrepancy between the intentions and the implementation of environmental protection; (viii) a deepening process of depopulation in the rural areas.

The results of the questionnaire survey definitely show that the Agricultural Land-Use Planning (ALUP) is essential to the creation of favorable territory conditions for farm growth and sustainable land use. Furthermore, the planning should be regulated by the state. The main results are shown in Fig. 2 and Tables 1 and 2.

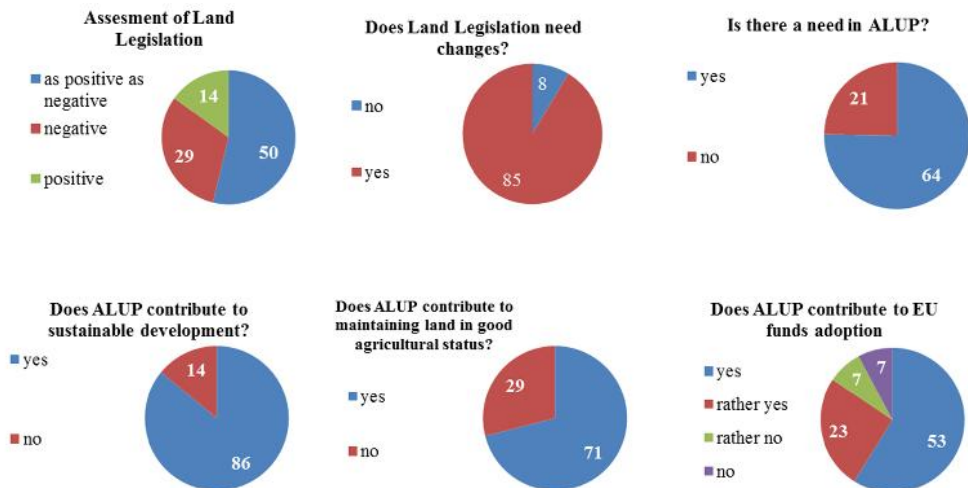


Figure 2. Distribution of the opinions on the main problematic questions on land management among the experts (%)

The main results also show that:

- Agricultural Land-Use Planning in the current conditions of dynamic land relationships and market-regulated income from the agricultural production is virally needed. This is confirmed by both professionals and farmers.
- The first step towards regulating land-use planning should be the construction of a definitive national policy for agriculture. The experts in land management believe that coping with the demographic collapse and elaborating the methodologies for small farm support should be the main topics addressed in the new policy
- The legislation for spatial planning and land use planning in the agricultural territories is rather inadequate. The prevailing assessment of the actual land legislation by the professional respondents (50% of them) is both positive and negative.

Table 1. Distribution of the opinions on main problematic questions on land management among the agricultural producers (%)

Question	yes	as yes as no	n
<i>Difficulties that farmers meet</i>			
Do you suffer from deficiency of funds?	92		8
Do you have difficulties in selling the production?	60		40
Is the procedure of adoption of EU fund difficult?	58		42
<i>Opinion of the Farmers on Agricultural Land-Use Planning (ALUP)</i>			
Do you cope with the territorial organization of the farm?	67		33
Do you have interest in educational programs for planning and management of your lands?	92		8
Does Land Management contribute to the increase of your income?	67		33
Do you need an ALUPProject?	25	17	8
Would you use ALUPProject?	75	25	-
Is optimization of field area and sizes ok for successful land management?	92		8
Will the ALUPProject costs be reimbursed from improved land use and production?	50	30	20
<i>Opinion of the farmers on sustainable land use</i>			
Is it important to apply antierosion measures?	50		50
Is proper operation of grassland important?	100		
Is it important to apply other measures for improvement of soil fertility?	100		

Table 2. The desired features of an ALU Project

Features of the ALU Project	vary important	rather important	as yes as no	rather not important	not important	no opinion
Land consolidation	50	30	10		10	
Contribution to arable area increase	38	50				12
Optimal number of crop rotations in the farm		43	43	14		
Compact arrangement of the crop rotations	47	40				13
Irrigation for the vegetable and fodder crop rotations and the perennials	72	14		14		
Minimal road area	33	33		17	17	
Antierosion slope for the field roads	22	56	11	11		
Minimum transportation distance to the production fields	75		25			
Minimal working slope for the tilling machines	89		11			
Proper form of the fields	22	78				
The working direction with respect to the long side of the fields	22	78				
Minimum number of non-production crossings of the agricultural machinery	25	50	25			
Prevention of harmful winds through protective forest belts	25	50	25			
Antierosion measures	50	50				
Measures to improve soil fertility	67	33				
Proper operation of grasslands through grazing turnover and haymowing turnover	71	29				

- A Law on Land Consolidation would provide for overcoming the inconveniences, proceeding from the existing land legislation (Yarlovskaya, 2014).
- Sustainable land use is possible only if the agricultural territory is properly planned. If Agricultural Land-Use Planning is guaranteed and regulated by the state, it will help utilize the EU financial aid for construction of infrastructure and field road network.
- Society needs professionals in agricultural land use planning. A specialized education in Agricultural Land-Use Planning is necessary for proper agricultural land management.
- The Agricultural Land-Use Plan is an essential tool for land tenure stabilization under dynamic land relationships.

- Agricultural Land-Use Planning and land consolidation should be supported by the state. Farmers tend to pay for professionally elaborated land-use projects. They believe that the expenses paid for the project will be compensated by the revenue of the optimized production process.
- The interviewees believe that the agricultural land-use plan will contribute to the following: the consolidation of the tenure, the increase of the arable areas, the compact arrangement of the crop rotations, the irrigation for vegetable and fodder crops, the minimum lost area for field roads, the anti-erosion disposition of the field roads, the minimum transportation expenses, the minimum inclination of the agricultural machinery from the proper working direction, the proper sizes and configuration of the fields, the working direction along the long side of the field, the minimum number of non-productive passes of the agricultural machinery, the measures against wind and water erosion, and the proper operation of grasslands.
- The most desired farm size is 1,000 ha, but there are opinions in favor of 500 and 300 ha. The size factor is closely related to the specialization of the farm. The opinions in favor of the maximum size land ownership and land use in the country pool around 100 ha. The range, though, is quite wide - from 50 to 1,000 ha.

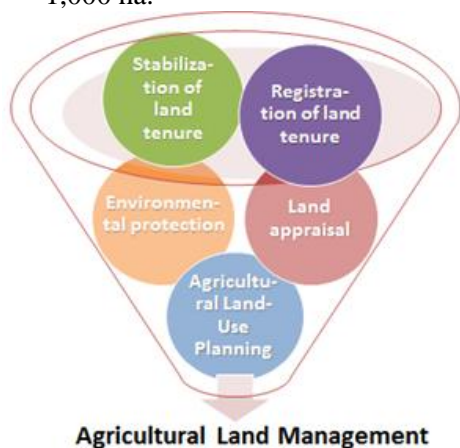


Figure 2. Activities in contribution to Agricultural Land Management

The new philosophy of land-use planning consists of a understanding it as a part of the “agricultural land administration” (Williamson et al., 2012; Shypulin, 2016). The latter consists of several interrelated activities: (i) stabilization of land tenure on the terrain; (ii) registration of land tenure in the cadastral and property registers; (iii) land property appraisal for the purposes of the land relationships; (iii) building of infrastructure and implementation of activities for environmental protection and sustainable land use.

As a consequence of this new concept, Agricultural Land-Use Planning can be allied to the following status characteristics:

- It is a scientific field, in which statistical, mathematical, experimental and other investigation methods are used for the purpose of optimization the territory structure; it is an inventive design activity for creating agricultural land-use plans; it is a continuum driven by the dynamics of land relationships and by the socio-economic processes.
- It is done for the agricultural territory as determined by the Master Plans of the Municipalities (LAU) and Municipal centers.

- Subject of the Agricultural Land-Use Planning are 1) the functional unit (farmland) and 2) its territorial elements (stacked area and linear). It establishes the regime and the standards of land use.
- Agricultural Land-Use Planning aims at rational land use and protection of the land. Its main issues are: (i) creating equal conditions for all forms of tenure - equitable distribution by land quality and location; (ii) establishment of certain indications of land borders on the terrain; (iii) developing activities for maintenance and increase of soil fertility, for reclamation of disturbed lands and for improvement of low lands; (iv) protection and prevention of degradation processes - erosion, secondary salinization, swamping, drying, flooding, desertification, compaction, contamination with industrial waste and chemicals, conservation of degraded lands; (v) preventing the spread of shrubs. It establishes an efficient land tenure system – motivates activities for land reclamation and infrastructure, improves the mutual disposition of cultivated areas, implements crop rotations, and haying and grazing rotations; implements rational labor organization.
- The parties affected by the Agricultural Land-Use Planning can be natural and legal persons, the State and the Municipalities, as well as the population in the affected territories.
- Agricultural Land-Use Planning is a precondition for preparing data based on the quantity, quality and location of land for the estimation of the taxation, lease payments, and compensation for expropriation land property for the construction of national and regional infrastructure.

The main principles of such Agricultural Land-Use Planning are:

- Strict observance of the land legislation.
- Compliance with the complexity of spatial planning by ensuring proportionality and balance in land use.
- Respect of the interests of participants in the land management process and of the population living in areas affected by the land-use planning.
- Compliance with equal organizational and territorial conditions for all participants.
- Compliance with the prospects and complexity of the territory development.
- Protection of land resources and natural landscapes.
- Provision of compactness, optimum space and access to land tenure.
- Avoidance of fragmentation, dispersion and other inconveniences of land tenure, leading to inability to agricultural land use.
- Publicity and transparency among the population living in the affected territories.
- Provision of land tenure security through protection of its permanent boundary elements

An important aspect of the contemporary Agricultural Land-Use Planning is the role of the State (Moteva, 2016). The new idea is that Agricultural Land-Use Planning in conditions of the market economy is a tool for implementing the state policy on the agricultural land use. To ensure the public benefits, the state takes

control of the land use in the agricultural territories by a set of legal activities. It is responsible for the legal validity of land tenure, for environmental protection, for the efficiency of land use, and for the regulation of the land market and land relations. Further, the government regulation ensures implementation of programmes for land development, support for the depressed regions and balance in the development of all territories.

CONCLUSION

Agricultural Land-Use Planning is essential for ensuring proper territorial conditions for sustainable social and individual development. It enables the development of the democratic idea. Nowadays, it is a part of the agricultural land administration. Market economy poses new challenges to it. The frame of the new conception for Agricultural Land-Use Planning includes agricultural spatial planning for the purpose of rational land use, protection of the natural properties of land, rational use of the agricultural machinery, economic growth of the farms, stabilization of land relationships, and prosperity of the rural areas.

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