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## MULTIFUNCTIONALITY OF BULGARIAN AGRICULTURE

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### ABSTRACT

Multifunctionality of agriculture is a compulsory element in the system of national and global economy. The significance of the problem is reflected in increased legislative and regulatory activity realized in a number of national programs developed on the basis of directives and regulations of the EU. Multifunctionality, and qualitative characteristics of the agricultural sector are contributing to combine environmental, economic and social principles of production and rural development.

The purpose of the report is to present the relationship between the theoretical conceptualization of the multifunctionality of agriculture and its practical importance for the development of the sector and the rural areas in Bulgaria.

The report highlights the need for implementation of environmental assessment to determine the potential of agricultural land in production and regional restructuring, as a direct expression of the multifunctionality of agriculture.

As a result of the research of the organic agriculture will be possible to conclude that the potential use of land and nature in each region are dominant factors for the multifunctional characteristics of the industry.

**Key words:** multifunctional, agriculture, conceptualization, rural development

### INTRODUCTION:

The concept of multifunctional agriculture appeared in the last decade of the twentieth century in developed countries, where food problems are solved and the public became more concerned about the quality of food, consumed and the environment. In this concept, developed in a period of political changes, continued support of the agricultural sector is justified in conditions of liberalizing world trade. In practice the concept of multifunctionality confirms the positive effects and impacts on agricultural production. In 2005, the multifunctional farms are almost 24% of all farms, with size greater than one economic unit and 2% of registered farmers. These data and results of different studies are of great interest among Bulgarian producers associated with agriculture and rural development. Multifunctionality of agriculture is a necessary component in the system of national economy. Multifunctionality of agriculture is interpreted by the functions

inherent in the industry – food production, food security, social function, employment areas and environmental impact. The last of these functions is the most pervasive aspects of the analysis of multilateral impact of agriculture on the environment. Some authors (1) linked the concept of multifunctionality to welfare and the need for diversification of agriculture with additional functions such as biodiversity, conservation of landscape, heritage and others. Other researchers (2) multifunctional agriculture is a concept that encompasses many benefits and services to the agricultural system, which have similar effects on humans and the environment. A multifunctional farm is defined as an organization in which "a multifunctional structural principle, net of rules that generate short and long term solutions (3). It is argued that multifunctionality of the agricultural production process is included in the entrepreneurial values and knowledge. At farm level developer must work in different ways, combining resources, knowledge, skills, to obtain multi effects generated in the production process. Actions that contribute to the expansion of farms and diversification of activities performed in them, generally create

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opportunities to use the existing farm landscapes and resources. This leads to increased employment of rural population, which contributes to increase and stabilize the incomes of agricultural households. On the basis of model multifunctional holding some researchers are based on various effects that it creates. These effects occur both for farm and household members and in neighboring markets, environmental, social and cultural environment, ie surrounding areas for agriculture. While the motivation for conventional farms is caused solely by market value of the results, the multifunctional farms are looking for combination of both performance and non-market. However, some non-market outcomes, although carried out at the individual level (farm) can only be achieved as a result of joint actions of organized farmers in a given territory (4).

#### **MATERIALS AND METHODS** **Theory of multifunctionality**

Features of rural areas in Bulgaria. A rural municipality is one with population density below 150 persons per square kilometer and administrative center with less than 30 000 inhabitants. Rural areas are the focal point of many problems that limit and fragment the human development in Bulgaria - poverty, interrupted education, low access to health care, ethnic segregation, limited opportunities for business development and problems related to environmental protection. All these issues are key to human development, from both conceptual and practical point of view. Conceptually, the gap between the rural part of the overall theme of inequalities in development, which is central to the concept of human development. In practical terms, people in rural areas are a target group in terms of reducing poverty, improving education, health and environmental protection. Rural areas are characterized by seasonal employment, arising from the lack of permanent employment. This can be avoided through diversification of economic activities on farms, which is achieved through multifunctional conversion of conventional agriculture. An example is the combination of livestock and farm equipment to produce biofuel from animal waste, or combination of farming and rural tourism. Multifunctional agriculture is a relatively new concept in Europe and particularly in Bulgaria (5). There are not many surveys made in terms of impact on the multifunctional activities of farm and rural development in Bulgaria.

Empirical data show that the concept of multifunctionality in rare cases has been used in Bulgaria. Government in the country does not include the concept of multifunctionality in the National Plan for Rural Development, but used comparative concepts such as alternative farming diversification and non-agricultural activities. Environmental and social issues that are other aspects of multifunctionality are discussed separately. The size of farms is important for carrying out different multifunctional activities. Large stock farms in Bulgaria perform various agricultural activities such as cultivation of traditional crops and / or livestock production and rural tourism. Manifestation of multifunctional small farms in the region is most often expressed in a combination of agricultural and non-agricultural activities. These farms are more interested in activities related to environment and landscape than large commodity farms.

Multifunctional activities implemented in Bulgarian agriculture contribute to sustainable rural development, achieved by reducing poverty and food security of the population. In addition, we can say that multifunctional agriculture is able to stabilize the society and protect the environment in areas of unequal development. According to the concept of multifunctionality, agriculture has other functions than food production by developing the rural landscape, enhancing the natural and cultural heritage, supporting the rural economy and improving food security. The Organisation for Economic Cooperation and Development (OECD) considers as multifunctional agriculture, which produces a number of basic goods (food and fiber) and a number of products with non market nature, including environmental and social products and services such as biodiversity conservation, land conservation and renewable energy sources and environmental protection. Consequently, European agriculture can be characterized as multifunctional. Hence the traditional function of the Common Agricultural Policy (CAP), namely the production of healthy and safe food for 498 million users were added other dimensions, including spatial planning, conservation and sustainable management of the environment, fight against climate change or production of energy and biomaterials. This multifunctional nature also serves to ensure diversity and quality of European agricultural products in the increasingly fragmented market for commodities. Furthermore, multifunctional

agriculture, which complies with strict standards of food safety, health and welfare or the environment, is compatible with the maintenance of competitive agriculture and agricultural industry, holding capacity and ability to play a significant role on the world agricultural markets. Agriculture plays an important role in rural development and rural vision as a whole. Although today agriculture remains a major economic sector in rural areas, it is dominant decay. This can be overcome in future by introducing the concept of multifunctionality in agriculture. Discussions on the issues of multifunctionality appear on the agenda in the mid 80's as a result of changing agricultural policies in Europe. The philosophy of the summit in Rio de Janeiro in 1992, approved the road to sustainable development. "Agenda for the XXI Century" aims to harmonize the relationship – man-environment-society and nature. There is a compliance with the manufacturing process to the specific factors of production in the region. In this exhibit the essential characteristics of multifunctional agriculture, and achieved significant productivity increase in production input of human effort. As a result, increased return to the investments made in production per unit of output in agriculture, which is an indicator of production efficiency and growth factor for the competitiveness of agricultural products in international markets. Farming is organic in nature proceeding in which living organisms in the course of their life create large mass of biological matter. The used in agriculture tools - plants and animals have specific natural features, which necessitates the production process in each region to observe their physiological requirements and needs, to ensure good economic result. Knowledge of the natural laws that guide the development of living organisms used in agriculture, allows businesses to increase yields by improving soil fertility, subject to the technological requirements for the cultivation of species and breeds. The economic interests of the manufacturer motivates the choice of cultivation to make informed decisions in the production process to ensure its highest and permanent income for each specific area. Relations between society and human nature are dynamic. Social and environmental rights can not be strictly limited. This is due to the indivisible unity of phenomena in nature and consequences of human activities on them. Human environment is formed under the combined influence of natural and social

systems that are interconnected and are engaged in active interaction. Those conditions and requirements can be inferred that the use potential of land and nature in each region are dominant factors for the multifunctional characteristics of agriculture. That his nature, combined with the particularities of the region is a prerequisite for the revival of industry and promoting it within the national economy. The forum in 1992 on multifunctionality of agriculture defines it terminological. In the process of production of material goods is increasingly consuming natural resources from nature. Depletion of natural resources caused by human economic activity is now the limiting factor of economic growth. This requires active business activities of the person to fit into the natural organization of the biosphere. It is well known that agriculture provides the absolutely necessary food and products for the existence of man and society. This qualitative characteristics of the industry is considered the most significant features in the UN in 1992 multifunctional character of agriculture. Nowadays it is industry, which with its multifunctional characteristics contribute to improving economic, social and environmental performance of national and regional development (6). This is one of the tasks of the revised 2005 Common Agricultural Policy. Agriculture is part of the national economy with an active exchange of adverse effects of this process as a whole and in part. The state of farming and multifunctional characteristics, directly affect the whole system of national economy, thus stabilizing the industry is essential as the economy of the country and on the final performance of each individual entity. As for the separate production and the industry as a whole must take into account ecological and economic characteristics and features of micro, meso and macro level (7). One of the challenges of the XXI century is increasingly emerging shortages of energy resources, forcing humanity to reinventing nature and seek new business solutions. Increasingly important role is assigned to the production of energy from renewable sources. To innovation in this direction, or Europe as it called - innovation is already allocated and thermomechanical process for biofuel production from manure, which is a perfect example of multifunctional agriculture. This process is embodied in Regulation (EC) № 1678/2006 of the European Commission, on November 14, 2006. In the Annex to this

document set out the conditions under which the treated animal products to get the process of thermomechanical production of biofuel. In order technological steps are the following:

- Animal products are placed in a converter and subjected to thermal treatment for 8-10 hours at temperature of 80 ° C to 100 ° C. During this period, the material is reduced in size. To facilitate this and appropriate mechanical handling equipment.
- During the heat treatment of material vapor is in the process water is continuously extracted (removed) from the air over biofuel and is passed through a capacitor. Condensed water is maintained at a temperature of at least 70 ° for about one hour. Then disposed of as waste water.
- After the heat treatment of materials derived biofuel converter is released and automatically passed through completely covered conveyor and connected to the same subject burns.
- Throughout maintain a system of hazard analysis and critical control points, allowing to carry out continuous monitoring of all the requirements set out in the previous paragraphs.
- The described process can always be done in the presence of lots of animal products. This regulation biofuel production from animal waste is important for the future expansion of opportunities for producing energy from alternative sources.

Thermomechanical process, providing an additional source of energy, contributes to the relative independence of the separate business unit. This, in turn, as a promising projection in terms of changed philosophy of the CAP, contribute to economic activity in rural and prosperous future plan helps stabilize the common European economic space (4). Agriculture is the part of material production in which the biological cycle of substances and energy is an unbreakable link with the appropriate business of the human and economic systems of society. This reaffirms the importance of multifunctional agriculture as an essential element in the theory of sustainable development. The principle of sustainability imply a requirement, the business of the individual and society as a whole to be kept so that future generations be able to use the same strength and quality resource. Preserved natural environment is a vital prerequisite for obtaining a better economic future results. With development

technologies ensure maximum production volume at minimal risk of distortion of the ecological balance in agro. One of the main directions of future agricultural production is to minimize energy consumption and raw materials, including optimal use of natural resources and conditions. The strategy for multifunctional agriculture, economic growth at any cost is converted to ecological-economic balance stored in the system, society and nature, leading role of the human mind to harmonize production, environmental and social objectives. The harmony between environmental, economic and agro-ecological systems is a guarantee to remove the preconditions for the quality of human environment. Quantitative indicators of growth in agriculture are increasingly in a causal relationship to the preservation of natural capital. The significance of the problem is reflected in increased legislative and regulatory activity realized in a number of national programs developed on the basis of directives and regulations of the EU. All of these quality characteristics of multifunctional agriculture determined not only its place in the rural economy, given the changed philosophy of the common agricultural policy, but it implies the substantial and significant impact on national economy. These characteristics predetermine its substantial and significant impact subject to the principles and requirements of the Nomenclature of territorial units for statistics (NUTS) at the European Union. Six economic planning regions - Northwest, North Central, Northeast, Southeast, South Central and Southwest are the subject of future targeted support and impact. Highlights will be under the agrarian sector, which determines the future relationship between multifunctional agriculture and regional development. In agriculture, agri-environmental criteria for industrial restructuring is related to agri-environmental potential of agricultural land. The application of environmental assessment to determine the potential of agricultural land in regional industrial restructuring is a direct expression of the multifunctionality of agriculture. In the course of industrial activity and economic activity, human economic systems interact with ecosystems and the biosphere as a whole. Changes that human activity causes to nature lead to long-term consequences and affect the natural human environment - the biosphere. Modern trends in the chain man-society-nature emerge more and more rising crisis point in the relationship of

humanity with nature. In response to this challenge, studies from many fields of social sciences focus in research on new global issues. By changing the frame of his life in the process of satisfying its needs, man must observe basic environmental imperatives of natural law. In considering the challenges of the XXI century, the focus in which refracts the activity of the human race has globalization. Globalization is not only forming a single economic space, but its binding imperative to create a global society that requires a reassessment of the relationship between economic activity and human environment. The new reading of economic life, environmental protection is an economic problem of macro, meso and micro-economic perspective. Human relations with nature and society are much more complex than the framework of market relations and the pursuit of profit maximization. Integrated analysis of economic, environmental and social factors suggest that environmental input - output has no market price. Therefore, the material prosperity of society should not lead to environmental degradation. Farm production is presented with its specialization, size, organizational status and ownership of different combinations of factors of production used. The combination of these characteristics determine the rough opportunities for development of different activities that can be interpreted as potential factors for development. Education, experience and style of the farmer as a basis for developing their attitude to issues relating to environmental, agricultural policy, etc. (7). Agricultural development is linked to agricultural production but also to the use of productive resources for other purposes, suggesting the involvement of farmers in various professional organizations and business profit. Membership in these organizations increase effectiveness and efficiency of farm production. To assess the status and opportunities for development of multifunctional holding different methods are used in combination with interviews. The questions are aimed at farmers' attitudes towards multifunctional activity. The survey is carried out at two levels:

- Regional level - 5 municipalities, 4 of which are classified as rural. Object of research are the views and assessments of the experts who work in regional offices of the Office of Agriculture and Forestry and specialists in agricultural business from municipalities.

- At farm level - 108 farms with a multifunctional business or interested to carry out such activities in future.

Research done show us why farmers are motivated by the introduction of multifunctional activities in their farms. These reasons are grouped as follows:

- Higher income - 93% of respondents;
- Rational use of resources on farm - 45% of respondents;
- Diversification of employment - 38% of respondents;
- Additional employment of household members - 35 percent of respondents;
- The revenue generated evenly - 23 percent of respondents;
- Environmental protection - 22% of respondents;
- Provision of new products and services to local residents - 18 percent.

A link is established between the age structure and educational attainment of farmers in the desire to introduce multifunctional agriculture. The largest is the proportion of people aged 35 to 44 years who wish to engage in this activity - 100%. They are followed by people 25 and 34 years of age - 93.8 %. Farmers with a bachelor's and / or master's degree in education are more likely to be engaged in various activities in addition to their income. Meanwhile, 37.5 percent of people with primary education and one in ten secondary education does not wish to develop activities related to agriculture. The results showed significant differences in the estimates of experts and farmers in the municipalities and between municipalities and the towns and cities on farms with different productive specialization. The largest differences are observed in terms of security for farmers, plant and equipment. Another major problem is lack of information that is accessible to small farmers in areas with typical rural character. Therefore, many of these small rural producers are not registered as farmers and thus can not take advantage of opportunities which provide various measures of the Common Agricultural Policy.

## CONCLUSIONS

Expectations for development of a multifunctional model are greater in areas with intensive agriculture in developed near cities than in typical rural areas (near the small towns).

The higher the degree of knowledge and information, the greater the degree of multifunctional model to be adopted by farmers and be a prerequisite for successful adaptation to the conditions of the manufacturers of the CAP (8).

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