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## **MULTIFUNCTIONAL AGRICULTURE IN BULGARIA - OPPORTUNITIES AND PROSPECTS**

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## **MULTIFUNCTIONAL AGRICULTURE IN BULGARIA - OPPORTUNITIES AND PROSPECTS**

### **Abstract**

The purpose of the paper is to analyze and to assess the status of the multifunctional agriculture in Bulgaria and on the basis of the attitudes of the agricultural producers to develop such activity to suggest trends for strengthening their adaptation to CAP conditions.

The paper presents the main results from a scientific research of a team from the University of National and World Economy, Department "Economy of Natural Resources", Agribusiness Section - Sofia, Bulgaria (2006-2007).

**Key words:** multifunctional agriculture, multifunctional agricultural holding

The concept of multifunctional agriculture emerged in the last decade of the twentieth century in developed countries where the economic importance of agriculture was negligible, and the community was increasingly concerned more with the quality of consumed food and the surrounding environment. In this concept developed in a period of political change is justified the need for continuing support of the sector in terms of liberalization of world trade. In practice, the concept of multifunctionality confirms the positive effects and impacts of agricultural production.

In 2005 the multifunctional agricultural holdings are almost 24% of the holdings with size higher than 1 ESU and 63.2% of the registered agricultural producers. These data, as well as the results from different surveys depict the large interest of Bulgarian producers to the linked with agriculture and rural regions activities.

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### **Methodological basis**

In scientific literature there is no common understanding of the nature of multifunctionality of agriculture. Even the most frequently quoted in the literature working definition of the Organization for Economic Cooperation and Development (2001) does not reflect the nature of the phenomenon, but rather only its two main characteristics. According to it, "the key elements of multifunctionality are a lot of market and outcomes that are jointly produced in agriculture", as well as "the fact that some of the non-market effects obtain the characteristics of public goods with the result that markets for these goods do not exist or function poorly" (OECD, 2001).

Among European researchers more and more widespread support finds the positive approach towards the issues of multifunctionality. It is bound and displayed from the characteristics of the agricultural production process and its results. Together with the production of market and non-market public goods, the subject of research interest are the impacts of agricultural activity. Most authors do not distinguish the effects of agricultural production by produced by it related products and public goods. Even researchers who have recognized this distinction accept that due to the complex nature of the impacts of agriculture that line is non-clear (Mollard, 2003).

Agriculture multifunctionality is interpreted through the functions that are immanent to the industry - the production function, food security, social function, employment in the territory and the impact of environment. Only the latter is among the widespread aspects of the analysis of the multi-directional impact of agriculture on environment.

Some authors (Potter, Tilzey, 2005) associate multifunctionality concept with the social welfare and the need for diversification of the additional functions of agriculture such as biodiversity, landscape, cultural heritage and others. For other researchers (Tilzey, 2003) multifunctional agriculture is a concept that encompasses many physical benefits and services to the agricultural system, which have similar effects on humans and the surrounding environment.

Multifunctional farm is defined as an organization in which "multifunctionality is a structural principle, network of rules, which generate short-term and long-term choices" (Belletti, Brunori, Marescotti and Rossi 2002). It is asserted that the multifunctionality of the agricultural productive process is included in the entrepreneurial values and knowledge. On agricultural holding level the entrepreneur should work on different ways, combining resources, knowledge and other in order to obtain the multifunctional effects, generated in the productive process realized in the holding.

On the basis of Van der Ploeg model of the farming are reviewed the different activities which expand holding participation in the agro-industrial network and diversify the executed activities in local context. They are used for interpretation of the differences between the conventional and multifunctional agricultural holding.

Activities that underpin the expansion of the farm by diversifying its activities as a rule create possibilities to use available in farm landscape and resources to increase employment of the rural population, to increase and stabilize income of farm households.

On the basis of the model of multifunctional holding some researchers base the diverse effects that it creates. These effects occur both for the holding and for the members of the household of the farmer as well as for the surrounding market, environmental, social and cultural environment, i.e. for the surrounding farm area.

While the conventional farm was motivated solely by the market value of the results, the multifunctional seek a combination of both types of results. However some non-

market outcomes, although being realized at individual level (on the farm) can be obtained only by organized joint efforts of the farmers in a given territory.

### **Methodical research frame**

Farm is presented by its production specialization, size, organizational status and various combinations of ownership of used production factors. Combination of these characteristics determines the unequal opportunities for the development of various activities which can be interpreted as potential factors for the development.

The farmer with his education, experience and age style is the basis for the formation of other attitude towards the incentives for preserving the environment, agricultural policy and more.

Rural areas for the purpose of the study are interpreted as the immediate surroundings of the farm, which to some extent affect the development and capacity to adapt to changes in the external environment due to general and national agricultural policies. For these reasons, was given preference to different rural areas, which at the same time are typical rural areas in the country with various traditional production specializations. Was taken into consideration the distance from large towns; variety of size of agricultural holdings; variety of landscape; variety of towns and villages.

Development of agriculture-related activities and the use of farm production resources for other purposes presuppose the involvement of farmers in various professional organizations with business and non-business purposes. They increase the effectiveness and efficiency of the activity of the individual farm. Examples in this respect are the providers of various tourist services in the territory of a municipality, associations of craftsmen and other.

To assess the status and opportunities for development of multifunctional holding are used the inquiry method combined with structured interview. Are ground questions for assessment of the attitudes of the agricultural producers to the multifunctional activity.

The investigation is carried out on two levels:

Regional level - 5 municipalities from which 4 are classified as rural regions. Object of research are the opinions and evaluation of experts working in the regional offices "Agriculture and forestry" and of specialists in the area of agrarian business from the municipalities.

Agricultural holding level - 108 agricultural holdings with multifunctional activity or expressed interest to its future development.

## Research results

The results show substantial differences in the evaluation of the experts and agricultural producers per municipalities, between municipalities with small and big towns, per holdings with different productive specialization. The biggest differences are in terms of reasons of farmers not to wish to be registered and thus to not have the possibility to use the different measures of the CAP. While experts of intensive areas associated it with the low amount of own farmland and low single payment per hectare, in the cereal regions the experts do not agree with this opinion. Explanations of the experts are associated with the size and cost structure of the most widely grown crops. In areas with arable crops the single payment per hectare is assessed as low (in fact it is about 25-35% of direct production costs in 2007), while for many other crops (vegetables, perennial crops, some technical, etc.) its relative share is insignificant (2-5%). Another explanation are the existing differences in the average amount of own land in both areas.

To assess the relations between experts' evaluations is applied correlative analysis and is used Spirman coefficient as well as regressive model.

Highest value (0.856) have correlation coefficients of the assessment of farmers awareness and of the assessment that the small number of registered farmers due to the low rate of payment for one hectare. Further is the relationship between awareness and the tendency of manufacturers to invest in machinery and technology to increase the efficiency of their activities (0.764). With similar value (0.766) is the coefficient of correlation between the adoption of multifunctional model of agriculture by farmers and the tendency of farmers to diversify their business holdings. It is the basis of the need to promote the European experience and capabilities, which are provided by various measures of the CAP.

Particularly high (0.818) is Spirman coefficient of the tendency for manufacturers to focus on processing agricultural products and positive assessment of the impact of agriculture on environmental quality.

The following general conclusions are made:

- Higher is the expectation for development of the multifunctional model of agriculture in the regions with intensive crop production, close to big cities in comparison to the typical agricultural regions close to relatively small towns;
- The higher degree of knowledge and information and the acceptance of the multifunctional model as desired aim for the development are preconditions for successful adaptation of producers to CAP conditions;

Are assessed the expected changes in the productive specialization of the holdings and the intentions of agricultural producers to develop variable multifunctional activities as well as to become members in different collective organizations - of agricultural producers, ecological organizations and other NGO structures.

The survey study of 108 farms conducted during the summer of 2007 showed an increased interest of their owners to multifunctional activity.

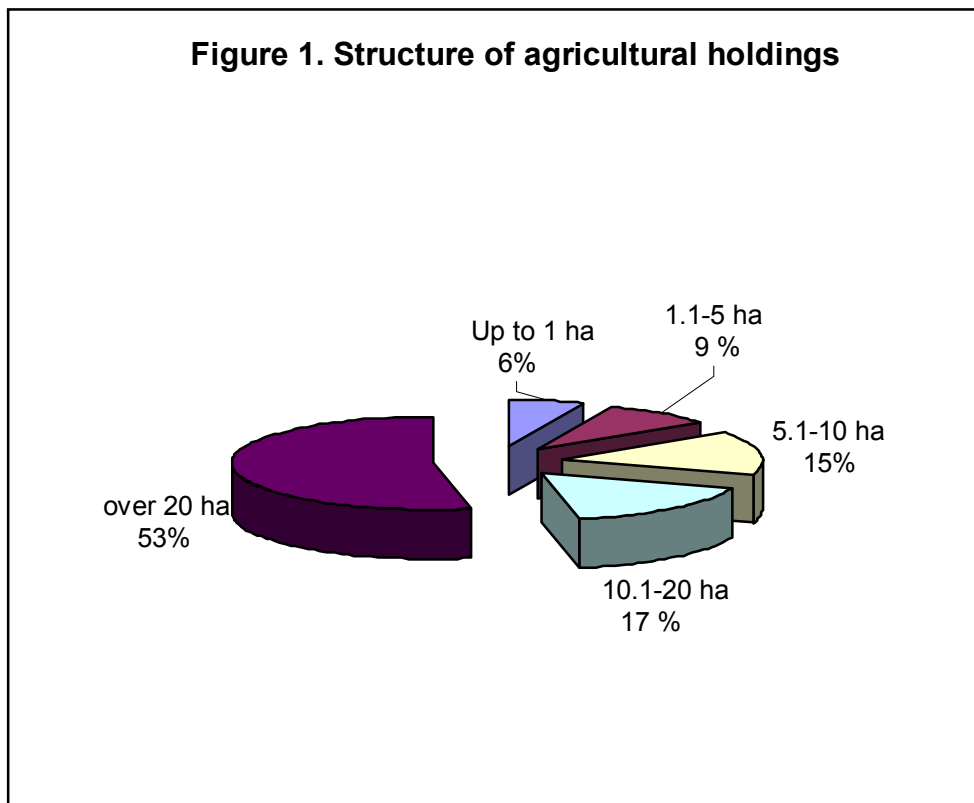
In determining the objects of research, the specialists in the municipal service "Agriculture and Forests" in the five municipalities used data from the census of agricultural holdings for 2003.

In the survey are included farms with different specialization and size. Most significant is the presence of specialized in cultivation of arable crop farms in the municipalities of Silistra and Tutrakan - 30 and 35 percent, followed by specializing in perennial plants farms (25% in September and Brezovo municipalities and 20 percent in the Rhodopi municipality) and mixed plant-breeding farms (between 25% in the municipality in September and between 15% and 20% in other municipalities).

In the structure of the studied farms dominate these in size of the land over 20 hectares (53%), followed by those between 10 and 20 hectares (17%), (Figure 1). Explanation for these high rates is the criteria for selection of objects of interest, including farms with multifunctional activity and producer's actively seeking information about changing business environment.

Of them own land fully or up to 80 percent of the land cultivates 32% of the respondents. Own and leased land up to 50% of the utilized agricultural area are managed by 11% of farms and leased land by over half of the utilized land – 57%.

In the farms involved in livestock are kept between one and three animal species. These include 48% of all surveyed sites. Most numerous are the farms breeding one type of animal. They are 23% of all farms and almost half of the livestock farms. Most livestock farm are interviewed in Brezovo Municipality (65%) and least is the number of interviewed farmers in Septemvri (40%).



Regarding the legal status in the study were included 71 family farms of individuals, 23 registered as sole traders and 11 companies. In most of them (10) the partners are relatives of family members. The only exception is a limited liability company in the municipality of Silistra, which members are distant relatives and former colleagues.

In 45 percent of the farms with multifunctional activity the relative share of these activities is significant, in 38% is negligible (up to 10 percent of farm income) and is prevalent in 16% (Table 1). In most municipalities, farms with a predominant and significant income from non-agricultural activities were noticed in two municipalities near the bigger cities - Rhodopi and Silistra, followed by Brezovo and Septemvri.

Among the holdings engaged with multifunctional activity the biggest number are those which provide mechanized services. These are provided by 29% of all farms. On the next place are those which are engaged with the direct sale of agricultural products (45.45%) and others. Smallest it the number of the engaged with processing of agricultural non-food products and aquaculture.



**Table 1** - Distribution of farms according to the relative share of non-agricultural activities in household income

Municipalities	Up to 10 %	11 % - 50 %)	(over 50 %)	No income from agr. activities
Silistra	15	30	15	40
Tutrakan	35	10	5	50
Brezovo	20	20	10	50
Rhodopi	5	40	15	40
Septemvri.	30	25	0	45
Total	21	25	9	45

Overall the majority of farmers have opted to develop more than one multifunctional activity. Average for a farm are developed 2.1 activities and the differences between municipalities range from 1.6 in Tutrakan to 2.12 in Silistra and Rodopi.

The activity of the agricultural producers towards the use of CAP measures is low. Evidence for this is the following data:

- Executed variable business projects - 23% of interviewed,
- Participation in ecological projects is only 8%.
- Participation in collective organizations - 28%

Subject of special interest in the inquiry were the intentions of farmers to adapt to the new conditions of EU membership.

CAP will influence the development of the non-agricultural activities according to 63% of the interviewed.

Participation in collective organizations as a whole is supported by 89% of the interviewed but 41% put a condition for a significant income increase (over 30%) and 27% - to have confidence in the managerial body. Only 3% do not link their participation in collective organizations with a considerable income change.

Participation in ecological projects is supported by 90% of the interviewed. Around every third of them (32%) do not link its participation in similar activity with income change, whereas 22% will participate if their incomes increase with 30 percent.

Agricultural producers order the reasons for their interest in multifunctional activity as per following way:

1. Higher income - 93% of interviewed;
2. Better use of own resources - 45% of interviewed;
3. More evenly received income - 23% of interviewed;
4. Additional activity for household members - 35% of interviewed;
5. Diversification of labour occupancy - 38% of interviewed;
6. Provision of new products and services to local inhabitants - 18%;

7. Preservation of environment of interviewed - 22% of interviewed;
8. Higher prestige of the put in work labour in comparison to the agricultural labour of interviewed - 26%.

The responses are higher number, because every farmer gave up to 3 reasons.

It is noticed a linkage between the desire to develop multifunctional activities and the age and educational level of producers. Highest is the relative share of the people desiring to develop such activities in the two groups of the younger farmers - 100% of the farmers from the age group (35 to 44 years) and 93,8% of the interviewed of the farmers of age between 25 to 34.

Data from Table 2 show higher degree of desire for multifunctional activities with the farmers with higher level of education, because all with Bachelor and Master

Degrees of education are prone to be engaged with different activities supplementing their income. At the same time 37,5% of those with primary education and every tenth of the people with secondary education and with specialist degree do not have desire to develop linked with agriculture activities.

Using clusters analysis with the method of K-medium (K-Means Cluster), farm owners and their 4 groups were formed with 25 signs/indicators (Table 3). Clusters include different number of farms with similar combinations between the characteristics of farms, farm owner's styles and assessing their intentions to develop multifunctional activity and the farmers to use various options due to our country's membership in the European Union. The biggest small farms are included in the first group (19%). In cluster A are grouped mostly mixed farms in which production takes place at a relatively lower level of intensity. Farmers have a relatively high level of education and highlighted interest in environmental practices and innovations.

**Table 2** - Distribution of agricultural producers according to level of education and intentions for development of multifunctional activities

Level of education	Will not develop	Expansion (diversification)	Processing and other activities in the food chain	Total
Primary	37,5	12,5	50	100
Secondary	11,1	27,8	61,1	100
Secondary Technical	12,1	42,4	45,5	100
Specialist	12,5	37,5	50	100
Bachelor		16,7	83,3	100
Master		44,4	55,6	100
Total	10	36	54	100

In cluster B are referred specialized farms, with relatively less educated owners who do not develop themselves and have relatively limited intentions to develop non-agricultural activities. Compared with other groups in group B were included farmers who can be referred to the so-called traditional farmers.

Most numerous are farms in cluster C (31%). In it are grouped holdings with increased interest in multifunctional activity and at the same time developing agricultural production at a relatively high level of intensity, reflected in their final production results. Here are included farmers with increased interest in the creation of producer organizations and others.

Cluster D includes 23 percent of the farms that are managed by highly educated owners in the field of agricultural science with relatively limited production experience. Farmers have desire to develop and combine farming with other activities. They organize mainly specialized farms with high intensity of production, using good practice.

Producers from cluster C and D have higher potential and attitudes for development of multifunctional activity, because they combine a desire for multifunctional activity with high intensity of agricultural production and farming styles higher level of adaptation to CAP conditions.

### **Conclusions**

In the last part are developed trends for speeding the development of multifunctional agricultural holdings. They focus on the conditions and preconditions for obtaining vast community support and regulations in the following main directions:

- Building of Community Councils and the needed for them institutional measures;
- Elaboration of regulatory and legislative basis for their implementation;
- Implementation of tailored economic instruments for influence and speed of multifunctional producers' activity.

Are assessed the expected changes in the productive specialization of the holdings and the intentions of agricultural producers to develop variable multifunctional activities as well as to become members in different collective organizations – of agricultural producers, ecological organizations and other NGO structures. The legislative basis and linked with it regulators are directed towards concrete areas for diversification of rural regions economy in the following directions:

- Development of service for rural tourism;
- Creation of preconditions for local crafts development;
- Expansion of activities linked with processing and direct sale of own production in the holding itself;
- Building of a social service for local population system;
- Production of energy from renewable sources.

**Table 3 - Main characteristics of the groups using clusters centres**

<b>Groups of holdings</b>	<b>Features</b>
Cluster A	Focused attention to the multifunctional activity Mixed farms Relatively low intensity of agricultural production Greater interest in non-agricultural activities Educated producers with relatively less experience in agriculture production Farming style, similar to the innovative Intentions to participate in environmental projects
Cluster B	Focused attention to agricultural production Specialized farms Low intensity farming Farmers with relatively low educational level Intentions to participate in environmental projects
Cluster C	Highlighted attention to multifunctional activities and high level of support for future development Specialized farms Greater interest in non-agricultural activities High level of intensity of agricultural production Farming style of multifunctional type Participation in collective organizations
Cluster D	Combining agricultural with non-agricultural activities Specialized farms High level of intensity of agricultural production Average longevity of production experience Highly educated owners Education related to agricultural sciences Farms that are registered as sole traders or trading company

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