

## THE ROLE OF MULTIFUNCTIONAL AGRICULTURE FOR SUSTAINABLE RURAL DEVELOPMENT

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### Abstract

*Multifunctional agriculture is a continuation of the meaning of diversification. It is a way of undertaking an agricultural endeavor, combining different practices from different sectors. The idea behind such an approach is to use the typical resources of agricultural holdings to achieve results related to other sectors. Multifunctionality can refer to different functions. It has been adopted in agriculture as a paradigm of sustainable agricultural practices to achieve better rural development. Multifunctional agriculture can be an important factor in the economic development of both farmers and rural areas. The aim of the study is to analyze the economic, social and environmental effects of the application of multifunctional agriculture. The research is based on good practices of different farms in Bulgaria. The results show that multifunctional agriculture stabilizes the economic condition of agricultural holdings and contributes to the development of the rural areas in which they are located.*

**Key words:** multifunctionality; agriculture; good practices; rural regions, Bulgaria

### INTRODUCTION

Bulgarian agriculture occupies an important place in the national economy of Bulgaria. Agriculture is important because it produces food and raw materials, provides employment for part of the population and it is in direct interaction with the environment, biodiversity and nature.

Agriculture has always been multifunctional. Along with traditional agriculture, including agriculture and animal husbandry, multifunctional agriculture covers many different aspects such as social and pedagogical, health and health services, ecotourism, cultural activities, environmental protection or active marketing of agricultural products [13].

Multifunctionality helps to combine environmental and economic principles in the production of agricultural products and leads to improved final economic results in the region, district or settlement. The concept of multifunctionality of agriculture is logically linked to the objectives of sustainable rural development. The development of sustainable

agriculture requires its coordination with the natural resources and potential of each region. The complexity of sustainable rural development is connected to interests of larger number of economic and other subjects, as well as all local interested citizens [11].

In 2001, the FAO adopted the following definition of multifunctional agriculture: “Agriculture has significant environmental, economic and social functions in addition to its primary role of food production and contributing to food security. The multiple functions of agriculture are intrinsic”[7].

Within multifunctional agriculture, the different functions can be categorized into five colour categories. Firstly, the white functions represent a contribution to food security and food safety. Secondly, green functions represent a contribution to nature, the environment and landscape. Water management by farmers and the harnessing of energy on farms are categorized as blue and red functions, respectively. The yellow functions, which have a more social focus. The final category is the social farming belongs to the group of yellow functions [12].

### Multifunctional farm

Against the background of a significant number of publications for the multifunctional model of agriculture, the problems of multifunctionality at the individual level (in the farm itself) are considered much more limited [5]. Authors such as Belletti, Brunori, Marescotti and Rossi believe that the multifunctional economy is more than a company in which “something related is carried out production of public and private commodity or non-current goods”. According to them, this is a farm in which “multifunctionality is a structural principle, a network of rules that generate short - term and long-term elections”. The multifunctionality interpreted in this way gives grounds to conclude that all or many of the agricultural farms have some degree of multifunctionality [4].

At the same time, if we look at things realistically, a small part of them have adopted multifunctionality as a structural principle, i.e. can be defined as multifunctional.

Other authors [14] derive the multifunctionality of the farm itself through a historical overview of the evolution of management systems. They talk about coordination activities on the farm in agronomic and economic principles. On this basis, the effects of multifunctionality are defined as “technological logical synergies” for the agricultural holding itself (from better risk management) and as more positive environmental impacts.

Agriculture uses natural resources to manage activities and this is closely linked to the question of how these activities should be shaped by farmers. Much of the advice in this regard is aimed at pursuing policies related to strengthening the principles of sustainability. Sustainability, in turn, can be viewed from three perspectives:

- Economic - organizing resources in a way that leads to long-term benefits from a business perspective;
- Environment - to live in harmony with the natural environment, protecting it from damage and destruction;

- Social - people recognize and accept as something valuable the applied practices. In particular, the return of communities to values through inclusive approaches related to a higher quality and healthier lifestyle.

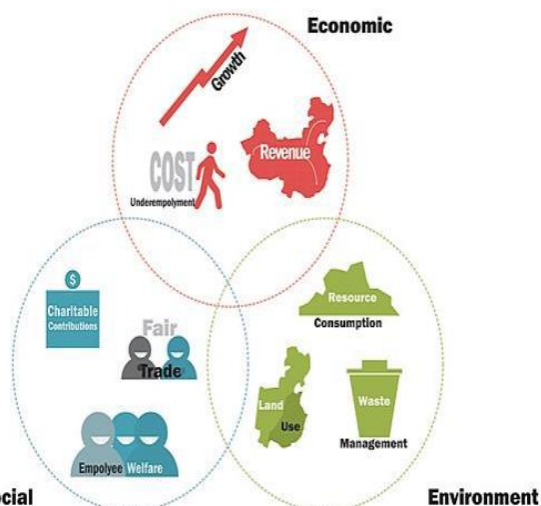


Fig. 1. Three types of bottom lines  
 Source: [15].

In recent decades, politicians have worked hard to get manufacturers to take sustainable action. Very often the results of their activities are missing. The lack of results from the pre-set goals creates unproductive costs and deteriorating working conditions. There are many reasons for these negative results. Some of them are related to the inability to access key resources due to higher costs, scarce available financial resources, and last but not least to the lack of knowledge and / or skills. Knowledge and skills are two different concepts. In the Skills pillar of the ESCO, a distinction is made between (i) the concepts of skills/competences and (ii) the concepts of knowledge by indicating the type of skill. Knowledge is defined as a set of information that forms a complete description corresponding to a certain level of awareness of a given problem. Skill refers to the ability to use this information and apply it in context. In other words, knowledge refers to theory, and skill refers to the successful application of that theory in practice.

This largely refers to the knowledge and skills related to multifunctional agriculture in Bulgaria. As a theory, it is already known to the public to some extent to some farmers, but

as a practice it is applied to a limited extent. The reasons for this are many and complex. There is no comprehensive state policy for the development of multifunctional activities in agriculture. The theory related to multifunctional agriculture is not taught in higher education institutions. Somewhere efforts have been made in this direction as it is embedded as an elective discipline in the curriculum. The practical successes of applying the theory of multifunctionality are related to the implementation of individual projects in this field.

In 2019, within the project eTOMATO - Training and Orientation for Multifunctional Agriculture - Entrepreneurial Opportunities, a survey was conducted at the University of Agriculture - Plovdiv with 63 students from six specialties from three faculties for bachelor's and master's degrees. Expected year of graduation - 2019-2021.

To the question "Does my education offer me enough knowledge to manage a farm properly?" students answered on average 68.05% positively (52.78% agree and 15.27% strongly agree) that their training offers enough knowledge for proper farm management. The best (74.60% positive answers - agree and strongly agree) is the training in sales, marketing and management, and the lowest is social and didactic agriculture with 12.70% positive answers (1.59% strongly disagree, 11.11% - do not agree that sufficient training is offered and 39.68% are neutral, which in a conversation with them was clarified that they respond because they are not aware of their nature). The situation is similar with short food supply chains – 9.53% believe that they do not receive enough training in this area, 28.57% are neutral.

## MATERIALS AND METHODS

An analysis of the multifunctionality in agriculture has been made by observing various agricultural producers in Bulgaria who perform agricultural and non-agricultural activities. Some farmers carry out organic production and offer their products directly to consumers, organizing their deliveries or have

their own shops, thus implementing a shortening of food supply chains, which is one of the areas of multifunctionality. Other farms apply unique traditional technologies in their production, have preserved the family tradition and apply the skills passed on to their fathers and grandfathers. A third of farmers combine different productions in order to improve the economic viability and sustainability of the regions. Some of them have guest houses, develop organic farming and animal husbandry and carry out rural tourism. The presentation of the various agricultural sites applying multifunctional agriculture aims to show the impact of this type of agriculture on the social and economic development of rural areas.

The case method was used to gather the necessary information. Researcher Robert K. Yin defines the case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and which multiple sources of evidence are used [16]. The case study is a research methodology that is appropriate for the case. We use the method of multiple case studies, which includes various relies on multiple sources of evidence formed as a result of research and also take advantage of previous developments in theoretical propositions.

As a case study method, it can provide information on the socio-economic characteristics of farms in terms of attitudes, future intentions and behavior, so that it can be used in both quantitative and qualitative research.

The exposition and analysis of the good practices applying multifunctional agriculture shows how much the society in Bulgaria is familiar with the ideas and practices of multifunctionality, how much the respective country has created appropriate conditions for stimulating and popularizing this type of activities.

There is a wide range of multifunctional activities in different regions of Bulgaria. It is therefore difficult to give a precise definition of multifunctional agriculture at farm level.

The study aims to show the social, environmental and economic results of the application of the multifunctional concept in agriculture. The survey covers three farms located in different regions of Bulgaria. The first and third farms are located in the South-Central region and the second in the South-West region. The multifunctionality of the first is expressed in the development of activities related to rural tourism and short food supply chains, the second farm - short supply chains, and the third is definitely related to the social functions of multifunctional agriculture.

## RESULTS AND DISCUSSIONS

Rural areas provide livelihoods for many people, much of the food and a number of basic raw materials. Each rural area is unique with its geographical location, its natural diversity, its historical past, the ethnic composition of the population, the religion and the economic potential it has. Rural areas have a huge potential for development in various directions, which is not only related to the development of the agricultural sector [9]

The projects in the Rural Development Program (RDP 2021-2027) are aimed at:

- organic production;
- disadvantaged areas;
- start-up aid for young farmers;
- support for small farms as well as investments in farms;
- processing of agricultural products and non-agricultural activities.

It is envisaged to support young and small farmers in the form of a grant in case their farm is up to 20,000 euros Standard Production Volume (SPV). The gratuitous payment will amount to a 100% grant, which will be available to a larger number of agricultural holdings and an easier and more accessible way of applying. The Rural Development Program also provides for investments in non-agricultural activities in rural areas.

They will target farmers and micro-enterprises, which are a major source of growth and job creation. It is proposed that the financial support be supplemented with

the possibility of combining it with loans to be granted by the State Fund "Agriculture".

Rural development policies can be grouped into three categories. The first approach is monosectoral. It is aimed at supporting agriculture as a separate sector for rural development. The second approach is multisectoral, it involves supporting all activities in rural areas. Measures for integrated and sustainable development of the regions are applied. The focus is on diversifying economic activities, caring for the environment, developing infrastructure, education, social services and revitalizing the overall socio-economic life. The third approach is a continuation of the second, but the emphasis is on the participation of target groups in support [3].

Multifunctional agriculture enables individual development, improves the quality of life in rural areas, is a source of additional income and contributes to the sustainable management of natural resources and the revitalization of rural areas.

Organic farming and integrated farming represent real opportunities on several levels, contributing to rural economies. The environmental advantages of these farming systems can bring significant benefits for the economy as well as to help for social inclusion of disabled or mentally handicapped people, long-term unemployed persons, drug addicts or socially disadvantaged people, children and juveniles with behavioral and learning difficulties [12].

Data for the development of organic agriculture in Bulgaria for the period 2006-2019 can be seen from Table 1 and Figure 2. The figure shows the growth of organic agricultural land in the country. At the end of 2019, 117,779 hectares were farmed organically, constituting 2.4% of the total usable farmland in Bulgaria. In 2010, 25,648 hectares were cultivated organically, which represented only 0.47% of the total usable agricultural land in the country. The development of organic livestock in the period 2006-2019 can be seen from the data in Table 1, which shows that since 2012 the number of certified farms and animals is constantly increasing. Organic agriculture had

220,765 beehives under organic management at the end of 2019.

Table 1. Development of the number of operators, organic agricultural land, certified animals and beehives in Bulgaria 2006-2019

	Certified operators	Certified organic land (ha)	Certified animals	Certified beehives
2006	181	3,061	1,514	708
2007	339	11,809	3,101	35,747
2008	285	16,662	4,565	44,861
2009	467	12,320	8,939	41,089
2010	820	25,648	9,952	46,429
2011	1,054	n.a.	n.a.	n.a.
2012	2,016	39,138	13,179	85,346
2013	3,123	56,287	12,940	117,360
2014	4,092	47,914	13,001	89,553
2015	6,173	118,571	31,460	178,331
2016	7,262	162,352	48,897	236,462
2017	6,822	136,617	49,280	250,434
2018	6,660	128,839	41,813	227,721
2019	6,405	117,779	42,951	220,765
2019/2006 %	3,538.6	3,847.7	2,836.9	31,181.4

Source: [6].

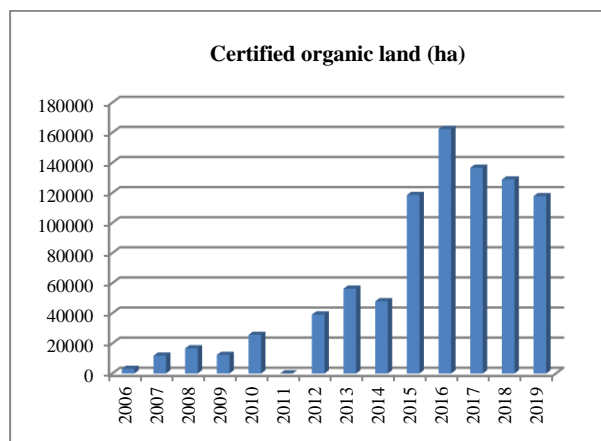


Fig. 2. Development of organic agricultural land in Bulgaria, 2006 -2019 year

Source: [6].

The availability of quality land resources, climatic conditions, traditions in the development of the agricultural sector and good production experience in the crop and livestock sub-sectors are the factors that contribute to the development of organic production in Bulgaria. Defining for the organic sector is the specific method of production, which maintains the ecological balances and produces products covering the

ecological principles. Therefore, we could consider organic production as a good basis for the development of multifunctionality in agriculture in the country.

We will try to present several organizations that have chosen a different way of life - to live in nature, to produce organic and environmentally friendly products and to preserve and transmit over time the local way of life, culture, tradition and biodiversity.

They are located in different regions of our country, are dedicated to different activities and bring a diverse range of environmentally friendly products. But there is one thing that unites them - their exceptional love, concern and understanding of nature - for them organic, ecological and organic clean agriculture and attitude to land, nature and life in general, is not just a good business idea - but something very bigger and deeper - it is the philosophy and meaning of life, what they deeply believe in and have dedicated their whole lives to.

The Wild farm of Nikolay and Blagovesta Vasilievi is located in the village of Gorno pole in the Eastern Rhodopes - a preserved and truly wild region of Bulgaria. The following can be indicated as distinctive features and activities of the company:

- The farm has a beautiful guest house;
- The farm is livestock breeding and the animals are being looked at as meat;
- Because of the completely free year-round grazing and constant free movement, the veal of these animals has a clean, deep aroma and is unusually tasty and tender;
- The farm has its own slaughterhouse and meat processing workshop;
- It offers organic products directly in its own shop in Sofia.

The farm combines different activities of multifunctional agriculture: rural tourism as a result of the built guest house and the natural resources of the region, production of organic products from farm animals and their implementation through the application of short food supply chains. One of the goals of the farm is to provide rest and to comply with the specific needs and interests of each guest by offering him organic food produced on the farm.

The Sofina family farm has been in existence since the beginning of 2009. Stoyan and Teodora Simeonov take care of nearly 70 acres of bio-certified plantations. With the help of family and people from the local community, the farm grows fruits, vegetables and birds. From the beginning of 2010 the expansion of the vegetable production begins and already from 2011 the methods of bio-dynamic agriculture are applied in growing vegetables, which contributes to the quality, healthy and tasty harvest.

-Their farm products include: nuts, hazelnuts, different types of tomatoes, cucumbers, zucchini, peppers, celery, pumpkins, carrots, potatoes, beets, beans, spinach, as well as the non-standard kale and chard.

- The proximity of the farm to Sofia allows the products to be picked up a few hours.

The farm welcomes visitors, including families with children - everyone is welcome during the Open Days or as part of Solidarity actions to come, spend a wonderful day with friends and family, to get acquainted with the way of raising vegetables and the principles of bio-dynamic agriculture.

Modern organic farming represents a merging of a number of different streams of thinking [2]. In 1924 the Austrian philosopher Dr. Rudolf Steiner presented an alternative vision of agriculture derived from his spiritual science of anthroposophy [10].

This forms the basis of the development of biodynamics agriculture, which is now practiced in many countries around the world. After Steiner's ideas, many others have contributed to the development of the concept of organic farming [12]. The definition of organic farming includes the concept of sustainability (economic, social and ecological). The term "sustainability" is used in a wider sense to underline not only the conservation of non renewable resources (soil, energy, minerals) but also the issue of social sustainability [8]. "Gerzovitsa" is the name of the area where the prison and the prisoners' farm are located in Smolyan. The location is in the Smolyan region with an altitude of 1,400 meters. Animal husbandry is free, pastures are not fed

with chemical fertilizers. The area is far away from settlements in a diameter of 15-20 kilometers. At least 100 km away there are no chemical and other contaminations from factories. Twice a month, the Food Agency checks the performance of fresh milk and all dairy products produced.

Prisoners take care of a total of 50 cows, 43 goats and nearly 100 sheep from whose milk they make their produce. The farm focuses on the breed of Rhodope bovine which is under protection and for which it receives good subsidies. Animals grown from 10 employees prisoners who deal with nutrition, grazing, cleaning and all activities related to good livestock. Each of the prisoners working on the farm is given a psychological profile, which includes the following: a desire to work with animals; skills for working with animals; possibility for work on an external object - assessment by the prison management in Smolyan. The Prison Dairy has all the necessary licenses for the production and sale of yoghurt and cheese. There is a modern production plant built. Every prisoner worker willing to work in the dairy undergoes a training course for working in the dairy. An exam is then held and the eight most knowledgeable and capable are chosen. Selected workers undergo a health check and behavioral control that ends with a psychological profile. Farming and dairy work creates working habits for prisoners while studying a new interesting craft. Workers prisoners receive monthly remuneration and every two working days are counted as three days of the verdict. Despite the frequent staff shift due to the expiration of convictions, the farm managed to maintain the range and quantity of production. For now it has realized its production in three districts - Smolyan, Plovdiv and Sofia. The dairy farm has a motto: "Who once tried just asking for it." In this case, the farm on the prison creates favorable conditions for people with special needs, providing them with participation in the daily activities of the farm according to the individual abilities and capabilities of each of them. The connection with the land, with the surrounding nature, the relationship with the people who train them and the production

process itself have a re-educational effect on the prisoners, and some of them acquire professional skills, which they apply even after their release from prison. The work itself and the calm atmosphere improves their mental state and has a proven healing effect.

The changing socio-economic environment in Bulgaria during the transition period had a strong impact on the social status of people, especially those with disabilities or people in prisons. The growth of unemployment, structural changes in the economy and others lead to the separation of these people from society and increase their social isolation. The constraints of their environment create greater barriers to social inclusion than the disabilities themselves. In order to be integrated into society, they must be included in the work process. Some of these people have lost their work habits and have no desire for social adaptation or it is very difficult to achieve. Many employers refrain from hiring people with this type of problem.

Farms are those that can create favorable conditions for people with special needs, providing them with participation in the daily routine activities of the farm in accordance with their individual abilities, capabilities and desires. This helps their development, integration into society and improves their lifestyle. The farms also provide employment to psychologists, therapists, instructors, teachers, counselors who are committed to improving the health and social adaptation of people with problems.

Sub-measure 6.4.1 "Investments in support of non-agricultural activities" of the RDP 2014-2020 creates conditions for supporting farms to develop their multifunctionality. The measure provides support for investments in non-agricultural activities, which are aimed at: promoting employment, creating new and preserving existing jobs; Reduction of seasonal fluctuations in employment; Encouraging the development of non-agricultural activities in rural areas; Encourage investment activities and support for the development of technologies in the field of "green economy", including energy from renewable sources for own consumption.

The sub-measure started with the first admission in the calendar year 2018, with a total budget of BGN 132,994,400, divided into three support procedures - in the sectors "Production", "Services", and "Crafts".

According to the agrarian report of the Ministry of Agriculture, Food and Forestry 2020 [1], the total number of applications received for admission is 826, with the value of the requested subsidy BGN 220,848,690. The budget for admission in the direction "Investments aimed at the development of crafts" amounts to BGN 5,867,400. 29 project proposals were received, with a total value of the requested grant of BGN 6,026,013. 25 project proposals were admitted for assessment of administrative compliance and eligibility and technical and financial assessment. Under the procedure "Development of services in all sectors and other non-agricultural activities", with a budget for admission in the amount of BGN 68,453,000, 507 applications were received, with a total value of the requested grant in the amount of BGN 133,461,838. As the total amount of the requested financial assistance under the submitted project proposals exceeds the available budget under the procedure, a preliminary evaluation of 471 project proposals was performed.

## CONCLUSIONS

The cases described in this article are only a part of the farms applying multifunctionality in their activity. Therefore, there is wide range of multifunctionality activities in different planning regions in Bulgaria. In this situation it is difficult to implement the general definition of multifunctional agriculture at the farm level. Multifunctionality represents much more than economic aspects and income opportunities. It has also strong socio-culture aspect. The case studies show that farm size has an important role for implementation of the different multifunctional activities. In Bulgaria, the large commercial farms are involved in growing up traditional crops and/or livestock production and agro-tourism. This model is accepted by larger number of commercial farmers and supported by

administration. The small farms implement different model of multifunctionality. Some small farmers often divide their time between on- and off-farming activities because of lack of financial resources, while others implement different activities on farming. Usually, small farmers are more interested in farms activities linked to environmental preservation than large farmers. The research of the Bulgarian farms shows that the development of multifunctional agriculture is still in its infancy, although it is much ahead of 2013-2014. The positive thing in this case is that although in a small scale, some existing examples can be shown. The negative is that the possibilities and the advantages of the this farming are not well known on the society level, as well as on national managing bodies level. As a consequence of this there is no common, purposeful and consistent policy to popularize and to develop this type of activity. The existing in the practice examples are realized as a result of a private initiative on a free principle without any protection, consultation or coordination of the activities from the governing bodies. We can conclude that there is a base for development of multifunctional agriculture in Bulgaria. A good link has been established between organic farmers. Many associations and organizations for organic farming have been established in different regions of the country, which provide a basis for multifunctional activities, i.e. we consider organic farming as one of the prerequisites for the development of multifunctional agriculture. The established network between organic farmers provides an opportunity to disseminate new knowledge and good practices in agriculture. At the same time, this production is associated with a number of environmental benefits that multifunctionality seeks. It is a good basis for the development of social and didactic farming, as well as short food supply chains due to the nature of its work. All this leads to the economic stabilization and sustainability of farms in different regions of the country and ultimately to increasing the sustainability of rural development.

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