**118th EAAE Seminar**
**"Rural development: governance, policy design and delivery"**
**Ljubljana, 25-27 August 2010**

# MULTIFUNCTIONAL LAND USE: IS IT A KEY FACTOR FOR RURAL DEVELOPMENT?

**Diana Kopeva**
**University of National and World Economy (UNWE)**
**Department Economics of Natural Resources**
**Studentski grad, 8th December Blvd., Sofia 1700, Bulgaria**
**Tel: +359(0)2 8195 294**
**E-mail: dkopeva@unwe.acad.bg**

**Mariya Peneva**
**University of National and World Economy (UNWE)**
**Department Economics of Natural Resources**
**Studentski grad, 8th December Blvd., Sofia 1700, Bulgaria**

**Svetla Madjarova**
**University of National and World Economy (UNWE)**
**Department Economics of Natural Resources**
**Studentski grad, 8th December Blvd., Sofia 1700, Bulgaria**

***Paper prepared for presentation at the 118th seminar of the EAAE***

***(European Association of Agricultural Economists),***

***'Rural development: governance, policy design and delivery'***

***Ljubljana, Slovenia, August 25-27, 2010***

## Abstract

The sustainable development of rural areas faces nowadays the challenges of global changes. The need to adapt land and landscape use to the new social, economic and ecological demands (non-farm activities, employment in rural areas, forest and agro- related tourism, real estate pressure, etc.) requires an analysis of the land multifunctionality and of the multipurpose land management strategies. The paper aims to review the concept of land use and landscape multifunctionality and to review the role of multifunctional land use in Rural Development Policy in Bulgaria.

**Keywords**: multifunctional land use, rural development, Rural Development Policy, Bulgaria

**JEL: Q01, Q15, R58**

## 1. Inroduction

Sustainable development of rural areas faces nowadays the challenges of global changes. The need to adapt land and landscape use to the new social, economic and ecological demands (non-farm activities, employment in rural areas, forest and agro- related tourism, real estate pressure, etc.) requires an analysis of the land multifunctionality and of the multipurpose land management strategies. Land use in rural areas can be reallocated between agriculture, forestry, nature areas and tourism. Agriculture and forestry are the largest land users but they are no longer the sole sources of income and employment in rural areas.

The concept of multifunctionality is discussed for the last two decades. The literature review reveals different view points and evolution of the concept. The approach to multifunctionality outlined in the EU does not aim directly to define the concept of multifunctionality but rather to adopt it as an argument for sustainable development of rural areas.The concept of multifunctionality that emerges from the documents underlines the various functions to the agriculture but in the political scheme it tends to standardise the concept of multifunctionality with environmental sustainability. As a policy concept, multifunctionality fulfils three specific functions: economic, environment and social, and is a prerequisite and precondition for sustainable rural development. Crossing point of multifunctionality of agriculture and multifunctionality of land and landscape is a parcel, where we can distinguish multiple land uses – for agriculture, for tourism, for recreation, for nature conservation, for water management, for waste management.

The paper aims (1) to review the concept of land use and landscape multifunctionality in the light of the EU Rural Development Policy (RDP); (2) to review the techniques of multipurpose land use and land management as facing the today's challenges; (3) highlight how land utilization is negotiated amongst the main stakeholders; (4) to review the role of multifunctional land use in Rural Development Policy in Bulgaria.

The paper is organized as follows. Section one of the paper is Introduction. In Section 2 we present a review of the concept of land use and landscape multifunctionality. Section 3 gives a brief description of the methodology and data used in the paper. In Section 4 we analyse the driving forces behind land use and landscape multifunctionality. Section 5 presents an assessment of the multifunctional land use in Bulgaria two years after EU accession. Section 6 gives some conclusions.

## 2. Land Use and Landscape Multifunctionality

The literature review reveals different viewpoints and evolution of the concept of multifunctionality. Multifunctionality is associated with agriculture and its dualistic functions – producer of food and fibre, and producer of non-commodity (non-market goods). Both functions are linked with land use. Policies and instruments that affect commodity production simultaneously have impact on non-commodity production and vice versa. The broader definition considers and emphasizes the generation of non-commodity outputs that relate multifunctionality not only with the environment (narrow definition) but with the safety of food production, rural viability and quality of life in rural areas. Holistic or 'joined-up' approach analyses all market and non-market production

relationships by examining the input and output ends of the production and household livelihood processes, as well as the positive and negative non-market outputs and inputs involved.

The Multifunctional Character of Agriculture and Land Concept (FAO, The MFCAL Concept. 2002) facilitates understanding of the complex interactions between agriculture and related land use, the multiple goods and services (food and non-food) produced by agriculture, the contribution that these goods and services make to the achievement of wider societal goals, and, in turn, the impacts on agriculture of the environmental, economic and social domains, including demography and the increasing globalisation of markets and trade.

The functions identified directly on the ground of practical experiences are grouped together into the following three main ones:

- *The Environmental Function.* Agriculture and related land use can have beneficial or harmful effects on the environment. biodiversity, climate change, desertification, water quality and availability, and pollution.
- *The Economic Function.* Agriculture remains a principal force in sustaining the operation and growth of the whole economy, even in highly industrialised countries.
- *The Social Function*. The maintenance and dynamism of rural communities is basic to sustaining agro-ecology and improving the quality of life (and assuring the very survival) of rural residents, particularly of the young. Social viability includes maintenance of the cultural heritage.

In theory and practice there is an ongoing debate on the opposing approaches of "multifunctionality of agriculture" and "multifunctional landscape". Both approaches are interlinked and cannot be observed separately, because they are dealing with land use, biodiversity, economic, social and environmental dimensions of sustainability. The crossing point of approaches is parcel and this relationship between multifunctionality of agriculture and landscape is illustrated on Figure 1 (Silber, R., Wytrzens, K., 2006).

The relationship between multifunctionality of agriculture and multifunctional landscape is studied by various researchers who emphasized on different aspects – landscape diversification and multifunctional agriculture (Ryszkowski and Kedziora, 2006); land use forms and maintenance of sustainable rural development (Bastian , Lutz, Roder, Syrbe, 2006); multifunctionality as an integrated as an integrated concept that is used to determine the land use distributions following the concept of sustainability (Jessel, 2006).

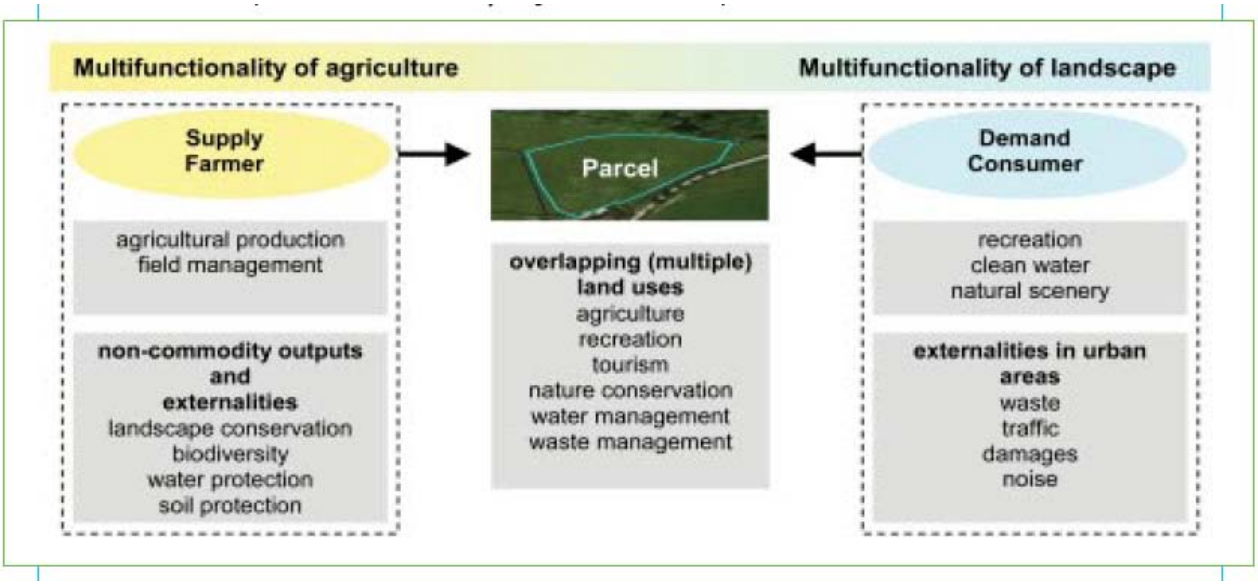


**Figure 1. Relationship between multifunctionality of agriculture and landscape (Silber, R., Wytrzens, K., 2005)**

The multifunctional land use is a key element of rural development and it conjugates: landscape maintenance, multifunctional resource use, food security, preservation of biodiversity, diversification of activities in rural areas.

## 3. Data

To assess the role of multifunctional land use and the decision-making process of stakeholders a survey was conducted in two planning regions in Bulgaria (NUTS2) – North Central Planning Region and South –Eastern Planning Region. Two groups of stakeholders were interviewed – institutional (local authorities, NGOs, branch organizations, institutions responsible for different patterns of land use) and individual (farmers, foresters, forest owners, entrepreneurs, representatives of tourism). The total number of all respondents is 165, in that number 137 individual and 28 institutional. The stakeholders undertake actions lead by different aims. Different patterns of land use and landscape multifunctionality are assessed and factors that drive stakeholders' choices are determined. For the fulfillment of RDP objectives, driving forces are identified and analysed.

## 4. Driving Forces Behind Land Use and Landscape Multifunctionality

Rural areas and their communities make a vital contribution to the prosperity of the European Union. The rural areas play a vital role, with the majority of small and medium-enterprises located within rural areas. One of the key issues for sustainable development of rural areas is multifunctional land use activities. They are animated by different external and internal forces that are influenced in themselves by certain factors.

Driving forces are set of key internal forces (such as economy of scale, innovations, participation in the decision-making process, ecological production, etc.) and external forces (such as national and regional policies, demographic process, globalization, economic transformation and changes, transition to market economy, climate changes, shift to alternative energy sources, etc. ) that shape the future of the system. They act of applying to propel the system in a new sustainable direction and state. Driving forces are grouped into two groups: internal and external (Table 1).

**Table 1. Groups of Driving Forces**

| **Internal DF** |
|---|
| • **economic:** economy of scale(in that number farmed land and types of land use), commodity prices, income inequality, start-up of a new business<br>• **technological:** new production technologies (innovations)<br>• **political:** measures and policies focused on multifunctionality, EU policy literacy<br>• **social:** participatory approach - participation in decision-making process, financial literacy<br>• **environment:** environmental conditions (air, water, soil), harvesting intensity in forests |
| **External DF** |
| • **demographic:** age, migration, dependency ratio<br>• **social :** ratio urban:rural population, possibilities for commuting,<br>• **political :** governance (structures and operations on different levels), EU policy, national & regional policy<br>• **economic:** business opportunities in , existence of better business conditions for non-farm activities, appropriate economic and logistic network (bank system and insurance network, transport and communications) |

- **environment:** biodiversity protection, shift to alternative energy sources (biomass energy, geothermic power, wind energy, water power,etc.), climate change

The driving forces that have the most important influence on multifunctional land use are:

- Migration processes- Socio-economic changes increased migration – within the region (NUTS 2 & 3) and outside the region. On one hand, migration causes decrease of labour force in active age. On the other hand, migration increased the amount of land offered on the land market for sale and/or for lease/rent.
- Unemployment - One of the outputs of the transition period is increased number of unemployed people. During the first years of transformation the level of unemployment achieved 16 -18 %. Labour market was not developed and consequently can not offer any long term option for employment. Thus, part of unemployed who simultaneously become heirs of landowners acquire agricultural land and started business in agriculture. Another part of unemployed initiated their own business activities in tourism, industry and services. Level of unemployment is an important factor for multifunctional land use activities.
- Structural changes - Structural adjustments to the new economic environment created a great variety of structures (some viable in a long term , others –not). New structures become a key players in land market. Also they are key players for a multifunctional land use activities.
- NATURA 2000 - NATURA 2000 set certain limitations before land use activities . Lands included in network are subject of specific rules and regulations. Natura 2000 supports the principle of sustainable development. Its aim is not to stop economic activities altogether, but rather to set the parameters by which these can take place whilst safeguarding Europe's biodiversity. NATURA 2000 is a factor having important influence on multifunctional land use activities with a special focus on non-commodity outputs.
- EU policies (Rural Developmen Programme in Bulgaria) - The Rural Development Programme was elaborated taking into account both the priorities set in the Community Strategic Guidelines and the Bulgarian National Strategy Plan (NSP) for rural development for the 2007-13 period. The Rural Development Programme responds to all priorities of the Community Strategic Guidelines. The distribution of the resources among the key areas of rural development is based on the identified needs of the agri-food sector, environment and rural population in Bulgaria.

## 5. Multifunctional Land Use in Bulgaria Two Years after EU Accession

The main sources of income in rural areas are agriculture and forestry. Implementation of rural development policy resulted in diversification of activities rural areas. This created an opportunity for adequate use of all resources in these areas, including land resources. The rural development policy provided conditions for multifunctional use of land resources, on one hand as a common wealth and on the other as a necessity for their preservation. "In this way multifunctional land use is closely related to the diversification of activities (horizontal and vertical) in the region and stimulates the development of activities in the fields of agriculture, forestry and tourism at the same time" (Peneva et al, 2010).

### 5.1. National Level

The most significant contribution of rural development policy to multifunctional land use in Bulgarian rural areas is shown in the program documents developed and implemented on the basis of EU Regulation № 1698/2005 – The national strategic plan for development of Bulgarian rural areas and the adjoining Program for development of rural areas (PDRA), which encompass the period of 2007-2013. These two documents are different but mutually dependant levels in the implementation of the policy and in the management of the whole process of rural development.

As of 30.05.2010 from a total of twenty only six measures are directly related to multifunctional land use in rural areas (Table 2). These six measures have undergone the following development:

- **Measure 112 "Creation of farms by young farmers"** – this measure is designed to facilitate the creation of farms by young farmers. It can provide assistance to up to 4096 young farmers, as the total investments could reach 416 mln. lv.
- **Measure 122 "Improving the economic value of forests"** – this measure is designed to assist all necessary activities for achieving sustainable forest project, plan or program (SFP) for the country as a whole. The SFP should ensure the ecological, the economic and the social functions of forests as well as the application of their multifunctional use.
- **Measure 311 "Diversification of non-agricultural activities"** – this measure is designed to encourage diversification of non-agricultural activities, creation of employment opportunities, income increase in rural areas and the development of integrated tourism in these areas. It can provide assistance to up to 4500 applicants with total investments of up to 432 mln. lv
- **Measure 313 "Encouragement of tourist activities"** – this measure aims directly to aid development of rural tourism, as well as diversification and improvement of tourist infrastructure, attractions and accommodations for visitors in rural areas. It inaugurates the term *integrated rural tourism* as something that is developed on the basis of social, cultural, human and natural resources. The measure has a limited resource - 76795834 lv. of investments, supporting 250 new tourist activities and creating 300 new workplaces.
- **Measure 321 "Main services for the economy and the population of rural areas"** – this measure provides directions for development and improvement of life conditions in rural systems by improving and expanding the range of services. The aim is to decrease the negative trends, the economic and social decline in rural areas by increasing the number and the quality of services. Investments on this measure are 825 mln. lv. and support 1500 activities. As a result of the improved services from these investments will benefit 320 000 people from rural areas, and 525 workplaces are expected to be created.
- **Measure 322 "Renovation and development of populated areas"** – this measure is aimed at improving life conditions in populated regions of rural areas, as well as creating better conditions for development of various businesses, including rural tourism. The measure is going to be implemented in 178 municipalities which are not included in urban agglomerations. The budget for the 2007 – 2010 period is 333511340 lv. and it is expected to encompass 800 villages with total population of 500 000, creating 1500 additional workplaces.

**Table 2. State of the PDRA applications that are directly related to multifunctional land use in rural areas as of 30.05.2010**

| Measures | Applications | Total requested amount | EU contribution |
|---|---|---|---|
| | number | BGN | BGN |
| **Measure 112 "Creation of farms by young farmers"** | **5433** | **265630236** | **265630236** |
| **Measure 122 "Improving the economic value of forests"** | **2** | **55863** | **43749** |
| **Measure 311 "Diversification of non-agricultural activities"** | **57** | **29258992** | **20481294** |
| **Measure 313 "Encouragement of tourist activities"** | **47** | **15801441** | **15801442** |
| **Measure 321 "Main services for the economy and the population of rural areas"** | **511** | **1923640928** | **1923640928** |
| **Measure 322 "Renovation and development of populated areas"** | **296** | **438532879** | **438532879** |
| Total: | 6346 | 2672920339 | 2664130528 |
| Total for all commenced measures: | 11288 | 4950170196 | 3932308529 |
| Total PDRA: | 117506 | 5087636599 | 4069774932 |

**Source:** Euro programs – Information for the progress of the PDRA as of 30.05.2010

According to the generalized data as of 30.05.2010 there are 6484 applications to measures directly related to multifunctional land use, which constitutes 56.22% of the total number of applications for measures of the PDRA. The total amount of applications is 54% of the total requested amount under all applications under the PDRA and 52.54% of the total subsidy of the investment projects. The biggest number of applications is received under measure 112, while the largest sums are set for measure 321. 4480 applications have been approved, 4419 contracts have been signed and 4219 contract payments have been made under measures 112, 321 and 322. The approved applications constitute 62.24% of the total number approved applications for all measures of the PDRA. Until now only 18-20% of the PDRA funds have been used which proves that not all land owners, rural municipalities and other beneficiaries have gain benefit by the program.

Analysis of the potential impact of measures from four axes of the PDRA illustrates various contributions of each measure. Experts' estimations group measures according to their impact on multifunctional land use, respectively positive, neutral and negative. Most measures have positive impact on multifunctional land use. They stimulate use of land for production of commodity and non-commodity goods, and support one or another dimension of sustainable rural development (Figure 2).

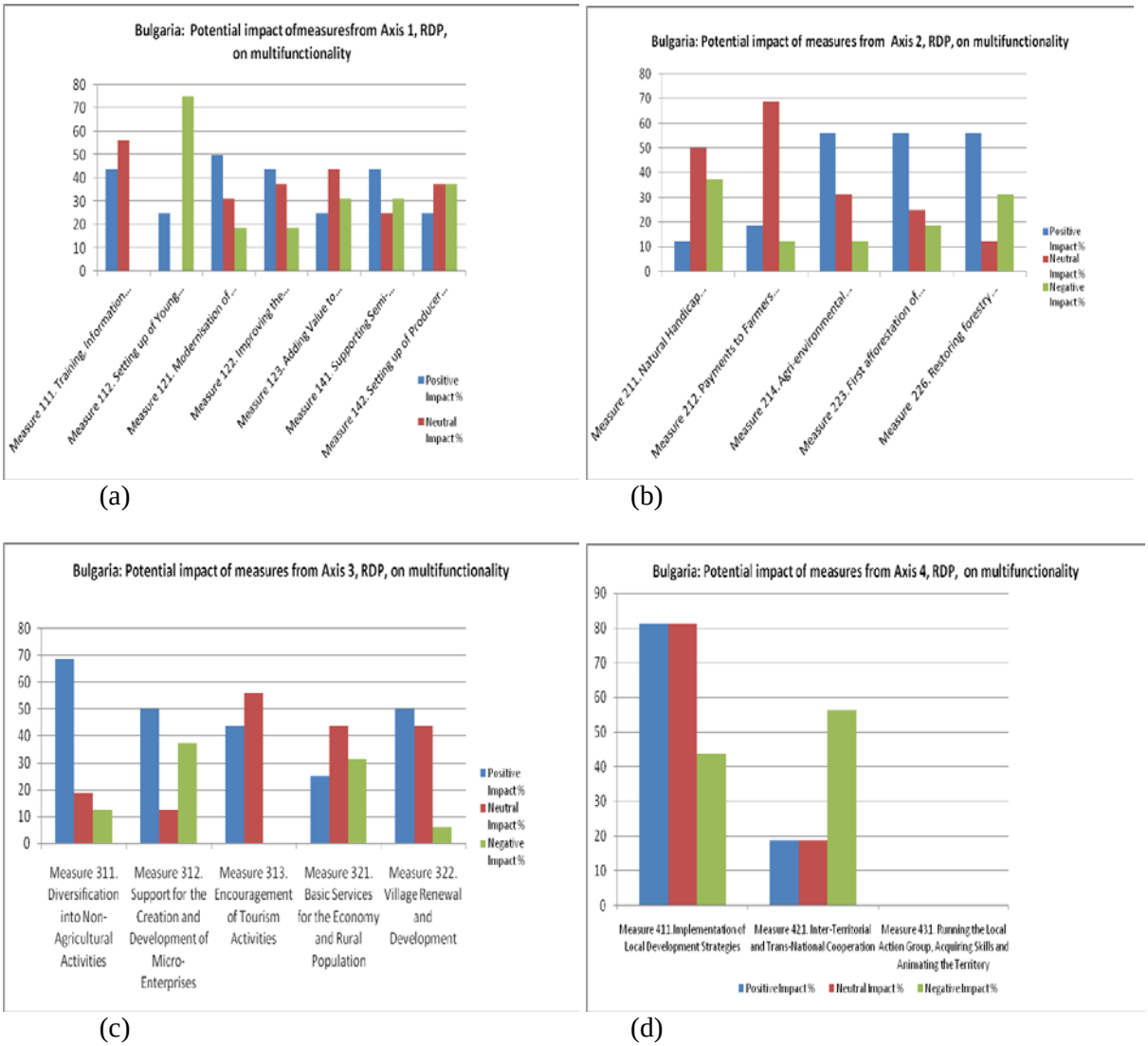


**Figure 2. Potential impact of PDRA measures on multifunctional land use activities (Kopeva et al. 2009).**

### 5.2. Micro level

The survey results provide more detail picture about multifunctional land use and sustainable rural development. Implementation of RDP provides more opportunities for local stakeholders.

Stakeholders are divided into two groups: group 1 – stakeholders who declare multifunctional land use, and group 2 – stakeholders without multifunctional land use. Change in land use was noted in both groups. Over the past five years (before he entry of Bulgaria into the EU) more intense and greater change in land use occured in farmers who did not participate in EU programs. The group of respondents participating in EU programs are not noted a significant change in land use. Equally represented are those in which marked a change and those where there is no change. After 2007 when Bulgaria become member of the EU in both groups is noted a change in land use. More than 73 % of farmers declare increase of land use change than five years ago.

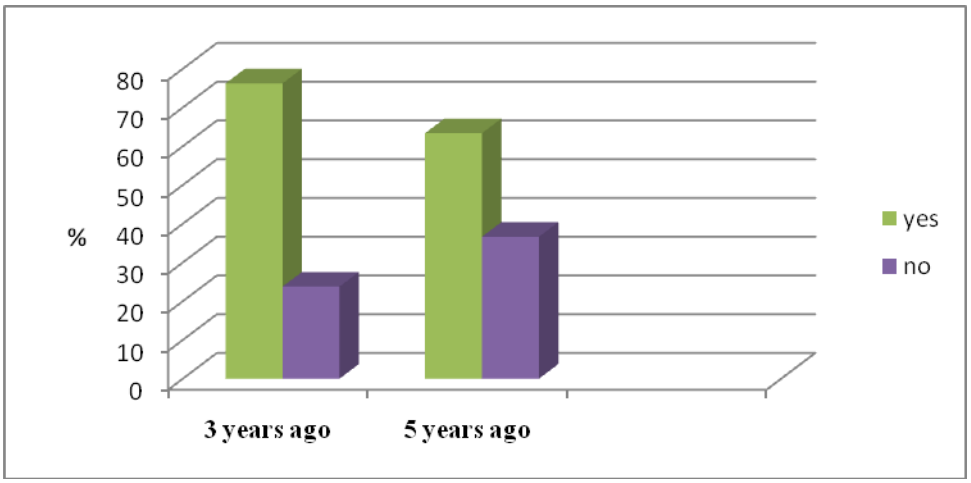


**Figure 3. Land use change before and after EU membership**

Farmers who are involved in multifunctional land use and participated in the EU programs own larger amount of land - over 500 ha, while the other (the second group) own land up to 500 ha (UAA). (Figure 4).

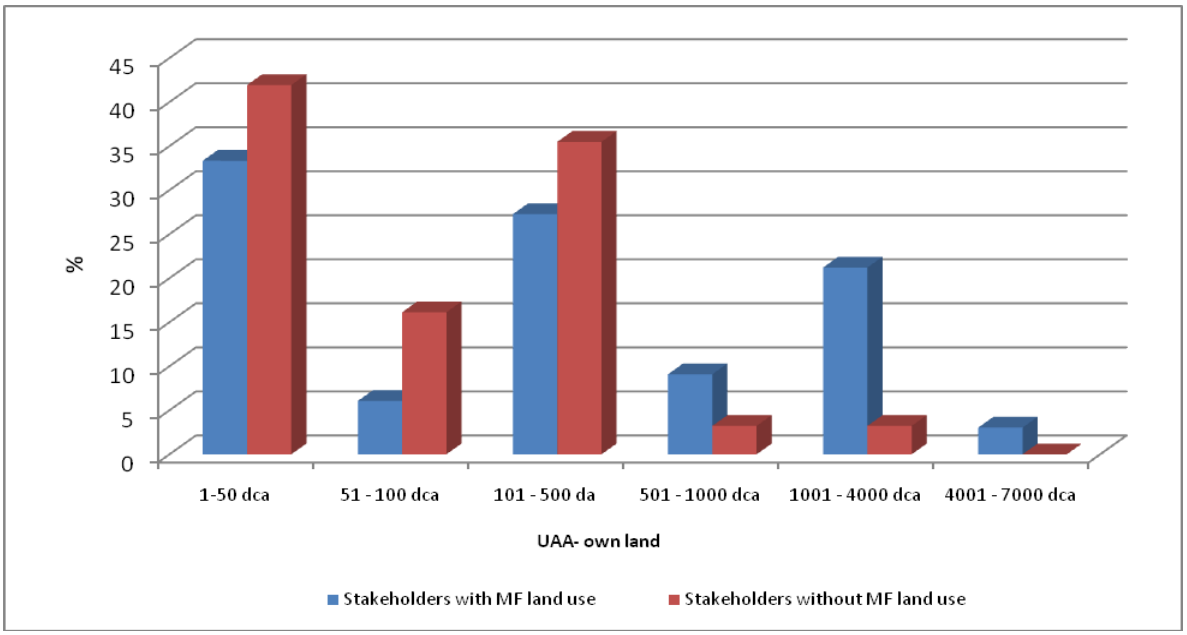


**Figure 4. UAA (own land)**

With respect to lease land it is observed great diversity in different groups. As of the case of UAA own land here those stakeholders who lease more land also actively participate in EU programs and financing. The highest is the share proportion of those who lease land between 7000 and 15,000 dca (21.62%). Together with those who lease land over 15,000 dca(16.22%) the share of big farms achieve level of 37.84%. The majority of farmers (55.88%) who did not involve in multifunctional land use and did not participate in EU programs, lease land to 500 acres. Only 5.88 percent of them lease land between 7000 and 15,000 ha. (Figure 5).

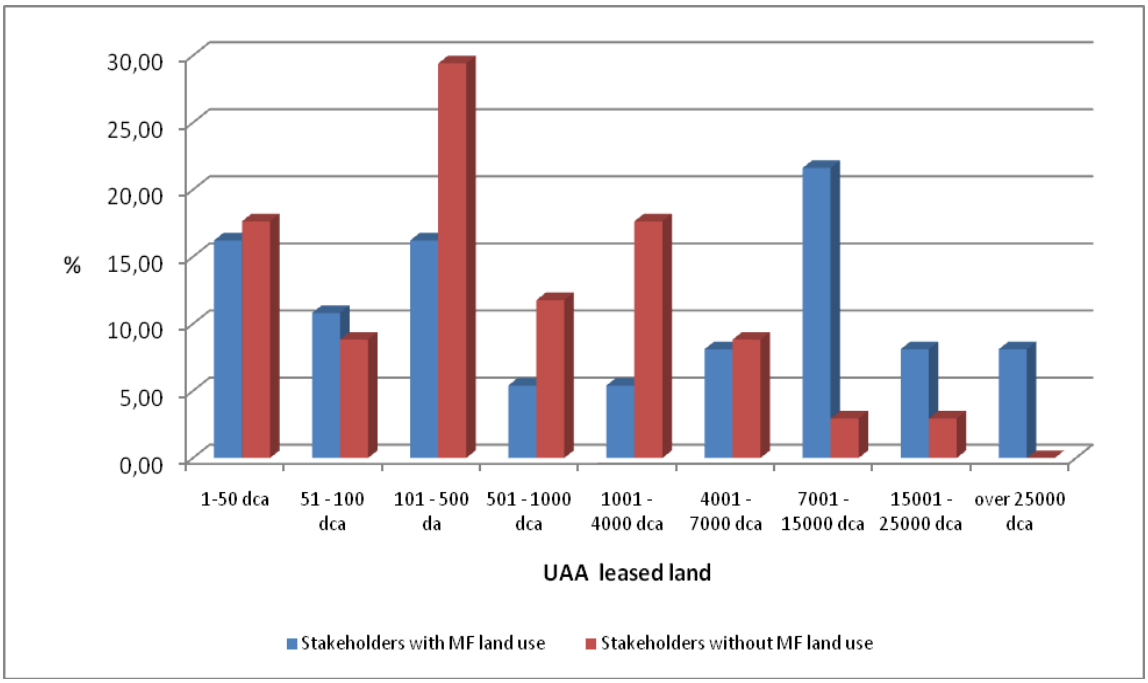


**Figure 5. UAA leased land**

Farmers who declare multifunctional land use have enlarged their acivities outside agriculture – tourism, forestry, industry (processing of agricultural goods). FMain reorienation of farmers is towards ecological prodcution (40%), following by industry (32%), tourism (14 %) and forestry (14 %) (Figure 6).

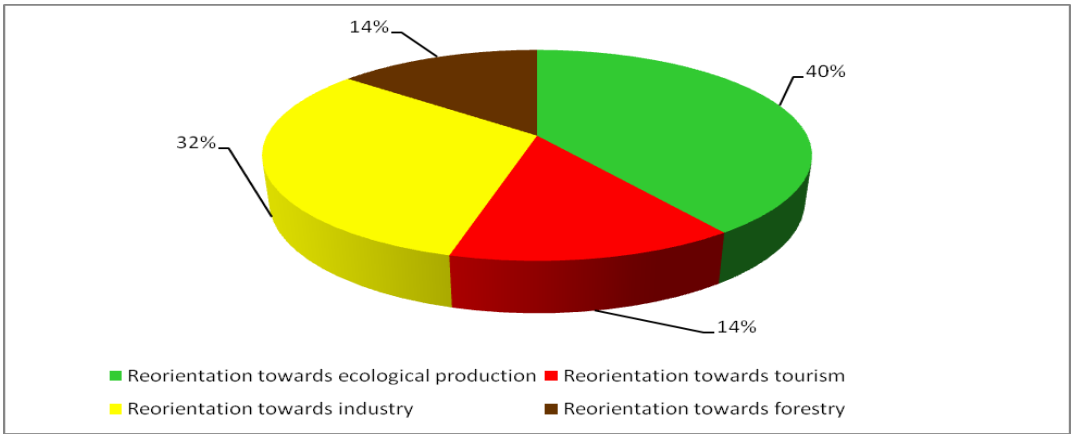


**Figure 6. Reorientation of activities**

Over the past three years, notes a change in the economic situation of farmers, whether they have stated or not multifunctional land use. In the vast majority of farms in both groups occurred stable

level of employees. 36 % of farms involved in multifunctional land use indicate an increase in the number of employees. The volume of production increased in the first group. This is accompanied by an increase in fixed assets, productivity, profitability and technological innovation. No change in both groups remains the market share. (Figure 7)

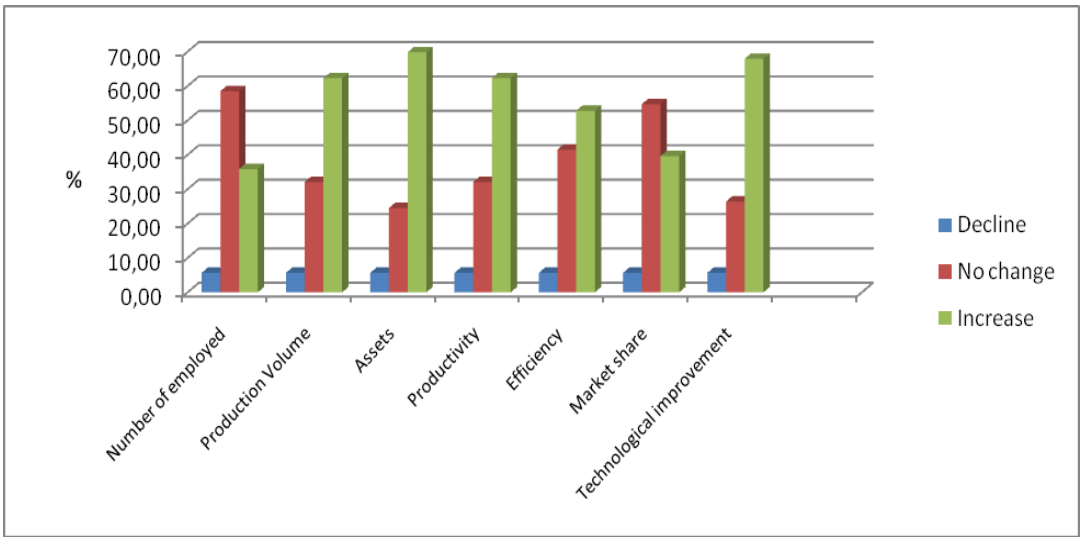


**Figure 7. Economic state of stakeholders**

## 6. Conclusions

Multifunctional land and landscape use plays a key role for sustainable development of rural areas. During the first phase of the implementation of the Rural Development Policy in Bulgaria (2007-2009) multifunctional land and landscape use is more oriented towards economic dimension of sustainability. Significant part of farmers follows well known practices and to use land for agricultural purposes only. Multifunctional land use is linked to use and participation of stakeholders in EU programs.

There are clear evidences that in rural areas on micro level multifunctional land use is a synonym of horizontal diversification in agriculture. In forestry and tourism it is observed land and landscapes are used multifunctional.

Our analyses show that under the influence of the rural development policy, particularly by applying the PDRA, it is possible to transform all rural areas, with farms becoming multifunctional enterprises. By utilizing land and other natural resources these enterprises provide new products and services while also protecting local natural landscape, and create new regionally specific products, develop rural tourism and ecological agriculture, use renewable natural resources and aim to develop on new markets. Through the financial aid of PDRA multifunctional land use is possible and is capable of ensuring the production of foods and raw materials necessary for society, at the same time preserving the quality of natural conditions and resources. Multifunctionality as a qualitative characteristic combines economic with ecological principles in production and improves the end economic results in the given rural area.

## Acknowledgements

This paper is based on the study “Impact Assessment of the EU Policies on Multifunctional Land Use” (NID 21.03-5/2008) financed by Scientific and Research Fund of the University of National and World Economy (UNWE) which is carried out since 2008.

## References


Bastian, O., Lutz, M., Roder, M., Syrbe,R-U. (2006). The assessment of landscape scenarios with regard to landscape functions. In: Meyer, B.C. (Ed.): Sustainable Land Use in Intensively Used Agricultural Regions. Landscape Europe, Alterra Report No. 1338, Wagenin-gen, pp. 15-22.

FAO (1999). Cultivating Our Futures. Issues Paper: The Multifunctional Character of Agriculture and Land. Paper presented to the FAO/Netherlands Conference "The Multifucntional Character of Agriculture and Land", 12-17 September 1999, Maastricht, The Netherlands.

Jessel, B. (2006): Indicators and Assessment of Multifunctionality - Operationalising the Concept for Planning Applications in Landscapes. In: Meyer, B.C. (Ed.): Sustainable Land Use in Intensively Used Agricultural Regions. Landscape Europe, Alterra Report No. 1338, Wagenin-gen, pp. 36-46

Kopeva,D. , Peneva, M., Madjarova, S. (2009). Impact Assessment of the EU Policies on Multifunctional Land Use. SRP 21.03-5/2008. UNWE. 85 p.

Kopeva, D., Baquiero, O., Franić, R., Garrod, G., Hautdidier, B., Ivanova,N., Jelinek,M., Konecna, M., Laplana, R., Meyer, B., Njavro, M., Peneva, M., Railey, M., Sahrbacher, A., Turpine, N. (2009). Critical analysis and assessment of EU policy on multifunctional land use activities on national and regional level. PD no. D1.3 PRIMA collaborative project, EU 7th Framework Programme, contract no. 212345, https://prima.cemagref.fr, 11 p.

Peneva, M., Kopeva, D., Madjarova, S. (2010). Impact Assessment of the EU Policies on Rural Development. In Proceedings of the VIII International Scientific Conference "After Crisis Development Problems", June 2010, Sozopol. 10 p.

Ryszkowski, L., Kedziora, A. (2006). Multifunctionality of agriculture, ecosystem services and landscape diversification. In: Meyer, B.C. (Ed.): Sustainable Land Use in Intensively Used Agricultural Regions. Landscape Europe, Alterra Report No. 1338, Wagenin-gen, pp. 6-14

Silber, R., Wytrzens, K. (2006). Supporting multifunctionality of agriculture in intensively used urban regions – a case study in Lintz/Urfahr (Austria). In Meyer, B.C. (Ed.) (2006) "*Sustainable Land Use in Intensively Used Agricultural Regions*" . Landscape Europe. Alterra Report No. 1338, Wageningen, p. 29-35.