Identifying multifunctional agriculture outputs and their importance for farmers

(Case study: Berat district)

Nertila Qafoku (Arapaj)

Abstract— Although the objectives that are sought were to orientate farmers towards multifunctionality in agriculture, this analysis was undertaken after important factors were revealed in the designation of multifunctionality. From an individual perspective, the overlapping of motivations to improve this agricultural model with motivations to go towards multifunctional agriculture, is an opportunity for farmers convince that the motivation for multifunctional agricultural depends on their income which is determined by their social origins. The strategy used to describe the multifunctional concept relates to the identification and determination of the most important attributes of the agricultural sector in social and cultural systems in the Berat district. Through the Analytical Hierarchy Process (AHP) method the most important agriculture objectives have been identified where the results achieved show that the production output remains among the most important. In addition to the views in general of the characteristics of multifunctional agriculture of our country, we will pause to look at in depth to recommend possible developments in the county of Berati. The main reason why we have chose this county is that it represents the average the economic indicators, social and environmental, of Albania.

Index Terms— multifunctionality in agriculture, production output, social output, environmental output, hierarchy analytical process, Berat district

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1 INTRODUCTION

Historically, agriculture has played a dominating role in the development of rural zones as well as in the formation of rural scenery. The role of agriculture in the future of rural zones is actually a topic of much discussion [1]. However, agriculture still remains today in many zones an important economic activity and a factor for the creation of natural riches and employment (in a direct way and indirect), in it's dominating role in rural economies which is in decline.

On the other hand, in many rural economies, agriculture plays the same role as it used to after there was away created a need for the diversification of activities on family farms [2]. Besides the economical contributions from agricultural production, society always waits for agriculture to contribute in the service of the environment and scenery, the management of waters and the control of flooding, and the societal care and cohesion as well.

Therefore, a multifunctional solution is argued to be the new paradigm to unite and bring post modern agriculture in accordance with new societal demands [3]. It is emphasized that besides agricultural production, agriculture also produces a wide range of produce and services, gives form to the environment, influences the social and cultural systems, and contributes to economical growth.

Historically, the concept of the sustainable development of agriculture, is in the context of the continual crisis of conventional agriculture- expressed in the dangers to increased health, the loss of the environment, the excess production of low quality produce, the decrease in the number of producers and workers on farms, etc., [4].

The integrated management of farms (MIF) can be thought of as an ideal concept of the purpose of the activity of the farm (production effectiveness) [5]. To say it simply, the concept is that all factors of production (material, natural and human) be integrated in the management of the special cultures in a way so as to profit from the interactions between them.

The sustainable rural development suggests a cooperative potential that interweaves the farms with the local economy, and implies a reconfiguration of asymmetric relationships between society and nature, technology and expertise [6]. This vision of agriculture is entirely different from the agroindustrial model. While the productive vision of rural development is dependent on continual specialization and the separation of agriculture from the other activities of the wider rural areas [7].

2 THE SITUATION IN BERAT DISTRICT

An important characteristic of this study is the aim to explore how the notion of MFA is interpreted and how much it is received from the farmers. Although, researchers orientated towards attitudes and motivations of farmers lately have been many and is widely accepted since it is necessary to conduct much research in this field.

In the conditions of our country, multifunctional agriculture, in a farming level, will contribute towards the modeling of a stable rural development and a reintegration of agriculture in urban life and rural through a series of integrated multidimensional activities. This is also the main reason why this study was undertaken.

From Economic Perspective: The county of Berat, seen in the

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perspective of GDP, the enthusiasm is low, buy anyhow, near the national average, keeping in mind the edited calculations of the population. In the structure of GDP, agriculture comprises 32%, while nationwide; this weight is at about 18%. Albanian agriculture from the nineties is characterized by very small sizes of farms (1.2 ha) and fragmented into an average 3.9 parcels/farms. The greatest portion of farms belongs to the category of farms between the sizes of 0.5-2 ha and a small portion of them is over 2 ha [8].

From Social Perspective: The district of Berat has a population of

TABLE 1
NUMBER OF FARMS BY SIZE OF LAND AREA (HA)

County	Number of farms by size of land area (ha)				
	< 0.5	0.5-1	1-1.5	1.5-2	> 2
Berat	3390	7209	8243	7052	3462

139 815 inhabitants, and it ranks eighth in the total number of districts for population. Currently 54.4% of inhabitants live in rural areas and 45.6% of inhabitants live in urban areas. In recent years, the population of district has declined by about 27%. The biggest decrease in population has been in rural areas. The number of inhabitants in the region has declined as a result of rural migration[8].

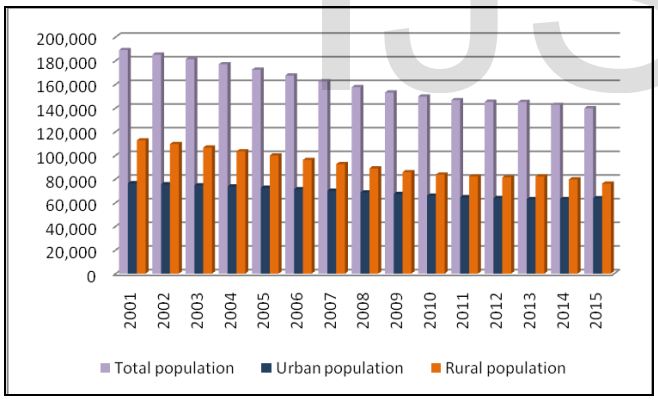


Fig. 1. Indicators of population in Berat region

From Environmental Perspective: The county of Berati has an area of 179,793 ha from which 52, 919 ha are agricultural land. The greatest portions of the terrain are hills and mountains. The percentage of agricultural land in the county is about 160% of the national average and indicators for the use of the land or similar in comparison with the national level. The county of Berati is characterized by mixed forms of terrain where mainly hills and mountains dominate [8].

TABLE 2
THE LAND FUND ALLOCATED TO BERAT REGION (HA)

Total Land	Arable Land	Forestry	Meadows, pastures	Other Land
179,793	52,919	58,833	30,472	42,569

3 METHODOLOGY

The main objective was the analysis and influence of multifunctional agricultural in the rural development of the county of Berat. In a special way, this research was focusing on the social economical contribution of multifunctional farms in the development of rural zones in the county. It's important to understand what encourages the development of multifunctionality at the family farm level analyzing the life decisions on family farms and the interpretation of multifunctionality in general in the county taken in a study while exploring and interpreting the multifunctionality at the farming level.
This analysis brings us to the formation of two research questions that directed our work:

Economic Contribution: How will multifunctional agriculture influenced the improvement of income for farmers in the county of Berat (ex. income, net profit, cost, prices, value portion added to the farmer, number of products offered, number of tourist, ect.,)?
Social Contribution: How was the connection between the social capital and multifunctional agriculture in the county of Berat (relationships, opinions, local groups, foundations, the possibility of employment, discriminated groups, etc.)?

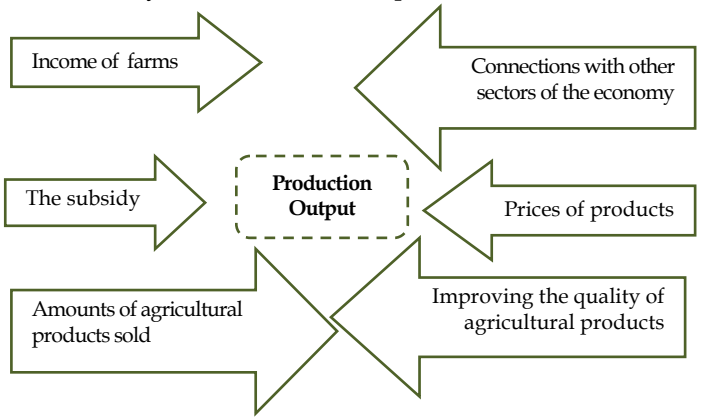
For a long time, people have been worried about the measured consideration of two events together, both the physical and social. The physical perspective has to do with a kind of objective reality outside the execution of measurements from individuals. On the other hand, society has a regard for the subjective ideas of farmers and the belief that farmers have in themselves and their experience. The issue is whether or not there exists a coherent theory that can be taken in both fields without making a compromise with anything else. The Analytic Hierarchy Process (AHP) is a method that can be used in both fields; physical and social.

AHP uses a hierarchal structure with many levels where there is also included objectivity, criteria, sub-criteria of the alternatives, and ensures quantitative computational methods to generate priorities based on comparative judgments that meet two out of the two criteria. So, a policy maker can choose considering the alternatives based on the relative values of each alternative [9]. In this way, AHP forms many factors that will be taken into consideration in this systematic way that ensures a structured solution for the problems of decision makers [10].

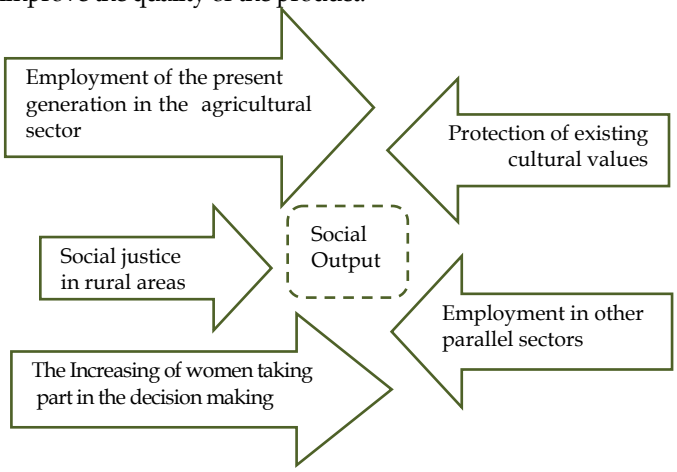
4 DATA ANALYSIS

Data used in this analysis were obtained from questionnaires realized in Berat district. Our study was structured in two phases. The first phase consists in the interviews with specialist of agriculture in the area. These interviews were realized in order to identify farmers' opinions, attitudes and objectives they usually consider in their farming management. The obtained information is used to design a structured questionnaire carried out in the second quantitative phase.

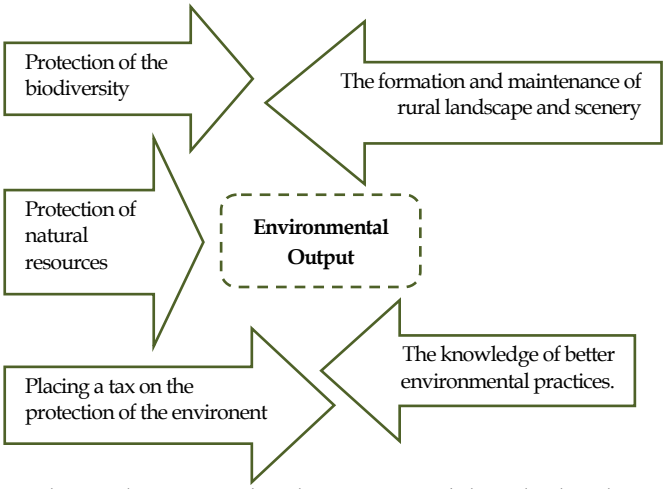
From the study of multifunctional outputs resulted that:



We saw from the results that the most of interviewed thought that the prices of products were more important for the output of produce tracked from the income of farms and afterwards, the subsidy. There were few farmers that thought that the connections with other sectors are important as it pertains to amounts and products that are sold. And fewer of farmers thought that it is important to improve the quality of the product.



From the results saw that the interviewed thought that the employment of the present generation in the agricultural sector is more important for the social output followed from the employment in other parallel sectors and afterwards social justice in rural areas. There were fewer farmers that thought that the protection of existing cultural values like that the increase of women taking part in the decision making was important.



From the results we saw that the interviewed thought that the protection of natural resources is more important for the environmental output followed from placing a tax on the protection of the environment and afterwards the protection of the biodiversity. There were fewer farmers that thought that the knowledge of better environmental practices as the contribution for the formation and maintenance of rural landscape and scenery are important.

If we are to group the interviewed farmers we have:

TABLE 3
CLASSIFICATION OF FARMERS

Farmers of survival	Farmers that desire better living conditions	Traditional farmers
- to provide the same level of income - to generate more income	- to have a healthy life - to have an independant life and to realize personal ambitions	- To carry on further the tradition of agriculture

Paired comparison matrix:

	Social output	Production output	Environmental output	Eigen vector
Social output	1	1/5	2	0.174137
Production output	5	1	6	0.722535
Environmental output	1/2	1/6	1	0.103328

Consistency Index CI = $\frac{\lambda_{max} - n}{n-1}$ and consistency is acceptable if CI < 10%. Random Consistency Index (RI) is 0.58, and the size of comparison matrix is n = 3, thus the λ_{max} is

λ_{max} = 13/2 (0.174137) + 41/30 (0.722535) + 9 (0.103328)
= 1.13188 + 0.98746 + 0.92955
=3.0493

$$CI = \frac{\lambda_{max} - n}{n-1} = \frac{3.0493 - 3}{3-1} = 0.024$$ (is acceptable)

If the value of Consistency Ratio is smaller or equal to 10%, the inconsistency is acceptable.

$$CR = \frac{CI}{RI} = \frac{0.024}{0.58} = 4.25\,\% < 10\,\%$$ (is quite consistent)

So, from the eigenvector we can see the importance of each output. The production output is the most important output by the interviewed.

5 CONCLUSION

The support of agriculture (multifunctional, specifically a policy regarding the price of the products) leads to increased income and to the possibility of increased activities on farms. This will ensure the increase of produce and this increase will come as a result of the increase of abilities of the farmer. Such politics would lead us toward the guarantee of quality food products in abundance. Also, it would increase exports and more importantly, we would have safe food.

On the basis of safe politics and with the support of societies, we will have the development of a multifunctional agricultural which will increase the income and possibility to add activities on the farm. The added number of farms will bring growth and employment in the agricultural sector especially n the employment of the present generation that leads to the decrease in migration movements.

Rural regions will be more populated and as a consequence, the cost of living will be lowered. This along with the support of quality public and private service. In those conditions, the county of Berat will have the greatest competitiveness in the region.

The general state of the natural and physical environment in the region requires a great investment but also new access for the management of human activities that damage the environment.

The support of multifunctional agriculture leads to increased income and to the possibility of increased activities on farms. The increased interest of farmers over environmental issues will bring protection to the rural landscape and the improvement of the environmental situation.

6 RECOMMENDATIONS

Although the objectives that are sought were to orientate farmers towards multifunctionality in agriculture, this analysis was undertaken after important factors were revealed in the designation of multifunctionality. From an individual perspective, the overlapping of motivations to improve this agricultural model with motivations to go towards multifunctional agriculture, is an opportunity for farmers convince that the motivation for multifunctional agricultural depends on their income which is determined by their social origins.

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