



Agricultural knowledge transfer: A case study for small farms and young farmers' beneficiaries of European funds

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Abstract

Common Agricultural Policy represents the main instrument of the European Union for the development of agriculture and rural areas. European funds are vital for the productivity and competitiveness of agricultural holdings, as well as for the transfer of agricultural knowledge and innovation. Supporting small and young farms is essential for the vitality of rural areas and for the renewal of generations of farmers. The aim of this work is to transfer agricultural knowledge in order to improve the productivity of agricultural holdings, especially among young farmers and small farms. We implemented training program through European funds related to Measure 1. "Actions for knowledge transfer and information actions" from Rural Development Programme of Romania. The characteristic of 100 participants and their responses were analyzed. Most of the participants were young people up to 40 years old (59%). The vast majority of the participants were from the rural area and only 17% were from the urban area. 53% from participants were strongly agree with the fact that level of knowledge influence farm productivity. Actions for knowledge transfer improve the adaptation of farmers to the new challenges of agriculture, as well as productivity.

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1. Introduction

In the 2014-2020 programming period of the Common Agricultural Policy (CAP), some measures have been explicitly targeted to support knowledge transfer in agriculture.

European agricultural funds play an important role in promoting modern agricultural technologies, and these financial instruments are vital for agriculture and rural development in Romania (Popescu and Popescu, 2017). The European Union provides a number of subsidies and financial instruments for agricultural sector and rural development to promote food security, sustainability and economic growth of rural areas. One of these tools is represented in Rural Development Programme of Romania by Measure 1. "Actions for knowledge transfer and information actions". This measure is for the provision of information and training to improve the performance and, also, the social and environmental sustainability of businesses operating in rural areas and the targeted group are people working in the agricultural, food and forestry sector and in SMEs located in rural areas and not only. Access to agricultural knowledge is very important to develop

farmers' abilities in maintaining and increasing farm productivity (Pratiwi and Suzuki, 2017). According to Bonfiglio et al. (2017), the knowledge transfer and innovation are essential for sustainability development of a rural space.

The lack of information generates a poor application of agricultural technologies (Bandiera and Rasul, 2006). By supporting individual holdings to innovate and increase their productivity in a sustainable way, economic growth and competitiveness are enhanced. Investing in agricultural productivity can have a positive effect on the economy (Gollin, 2010). According to Smit et al. (2015), European funds implemented through rural development programs seem to have a statistically significant positive relationship with the increase of agricultural labour productivity in southern Europe. Investing in farm training schemes could increase the adoption of new technologies and improve the economic and environmental performance of farmers. Farm training measures, with aspects related to environment or climate change, can improve the knowledge and skills of farmers, increase the adoption of new technologies and innovations,

and increase the climate resilience of farm holdings (Giannakis and Bruggeman, 2018).

Small farms are the most agricultural holdings in Europe, but they only cover less than 25% of the total agricultural area. The importance of small farms for rural sustainability in Europe has been demonstrated in many studies. Small-scale farming avoid depopulation in rural areas and ensure income for millions of farmers (Davidova, 2014). According to Guiomar et al. (2018), small farms are important for to local food supply, food security, and they often are seen as an alternative to large and specialised farms (Guiomar et al., 2018).

The number of young farmers in Europe is declining. The European Union allocates funds to young farmers with the aim of improving the competitiveness of agricultural holdings and stimulating the renewal of generations in agriculture. Training of the young farmers is essential in terms of the motivation to stay in the rural area and for the productivity of the farms.

Most farmers in Romania, especially those with small and medium-sized farms, as well as young farmers, do not have adequate knowledge in the field of agricultural management, technologies and modern standards of agricultural production, focusing mainly on traditional agricultural practices. In such a case, farmers are not very productive and competitive.

The purpose of this paper is to provide information on the implementation of a training program for farmers, especially small farms and young farmers, financed with European funds. The main objective was to increase the competitiveness of agricultural holdings, in the context of common agricultural policy, through professional training and acquiring knowledge among farmers.

2. Experimental

The training program was implemented from February 2018 to March 2019 by the University of Pitesti, Romania. The training program was funded through European funds related to Measure 1. "Actions for knowledge transfer and information actions" from Rural Development Programme of Romania. 4 training sessions of 5 days were organized. The target group of the project was made up of 100 participants represented by farmers from Argeş County. Most of participants were owners of small farms and young farmer's beneficiaries of European funds. The participants had access to information on agricultural technologies and from marketing or farm management. The training program also aimed at improving the knowledge of community standards at the farm level. At the end of the training sessions participants completed a questionnaire. The survey used the Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

In this work, present the main characteristics of participants and the interpretation of survey are presented.

3. Results and discussion

In Romania, most farms are small, and the owners do not have current knowledge regarding the modern practices and standards in agriculture. According to Law no. 37/2015 updated on the classification of farms and agricultural holdings in Romania farms are classified in five categories (table 1). Small farms are agricultural exploitation with economic value from 8.000 to 12.000 EUR.

Table 1. Classification of a Romanian size farm according to European Union typology

Farm type	Economic Dimension
subsistence farm	< 1.999 EUR
semi-subsistence farm	2.000-7.999 EUR
small farm	8.000-11.999 EUR
medium farm	12.000 – 250.000 EUR
large farm	> 250.000 EUR

In the training program, most of the participants were owners of small farms and young farmers. Most of young farmers involved in training had projects with European funding, so they have some experience with the implementation of projects with European funding. Also, small farmers had some experience with European funds. Other participants in the training program were farmers who did not apply for European funding or the person who wants to invest in agriculture (Figure 1).

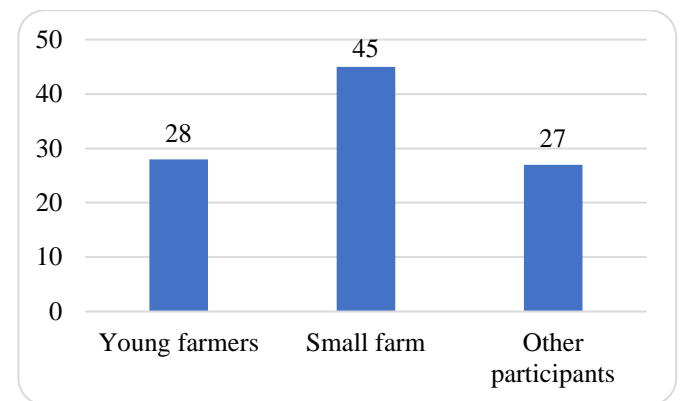


Fig. 1. Training participants

40% of the participants were women, while men represented 60% of the target group (Figure 2). Most of the participants were young people up to 40 years old. They represented 59% of the total number of participants (Figure 3).

28 participants of the program were young farmers who had projects on their farm, while the number of small farmers who had European projects on their farm was 45. The vast majority of the participants were from the rural area and only 17% were from the urban area (Figure 3).

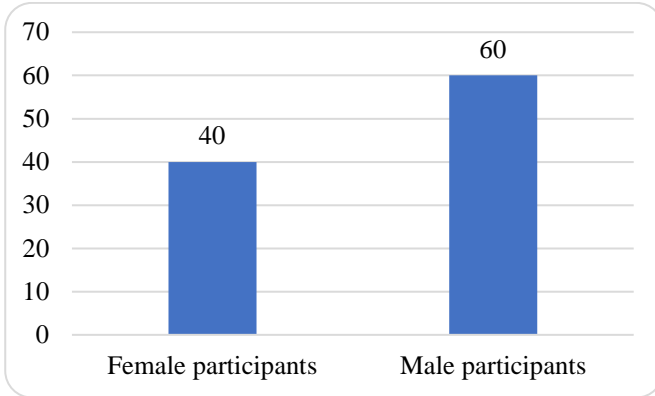


Fig. 2. Participants' gender

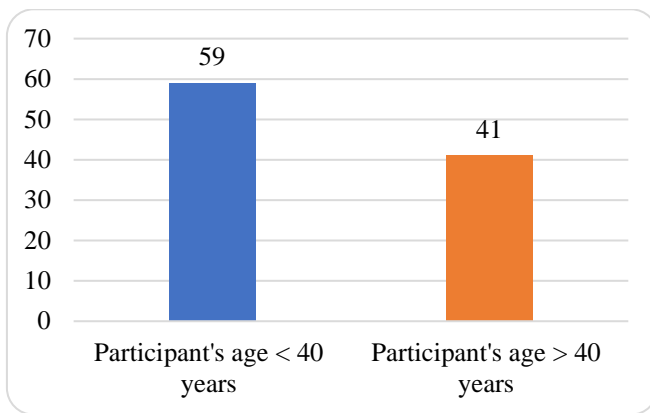


Fig. 3. Participants' age

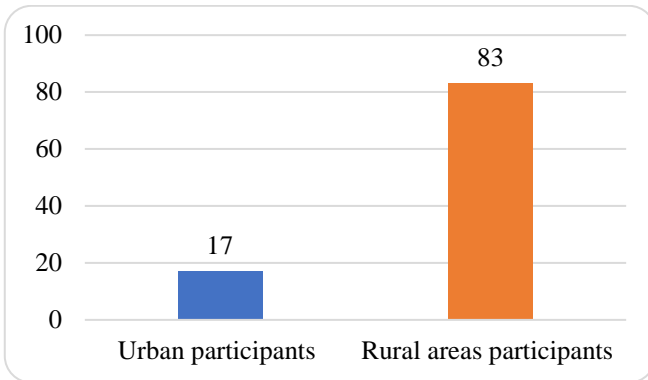


Fig. 4. Participants' place

Figure 5 presents the participants' response to a question regarding the relationship between knowledge acquisition during the training and farm productivity: 5 answers for neutral, 42 answers for agree and 53 answers for strongly agree.

The participants in the training to a large extent, completely agreed with the fact that they developed skills for the practical solution of some problems within the farm (Figure 6). No participant would strongly disagree or disagree with the fact that the knowledge gained would not be useful on their farm.

Most participants answered that they understood the concepts and principles of the agricultural training program (Figure 7). 12% of participants agree that they understood the concepts and principles of the agricultural training program.

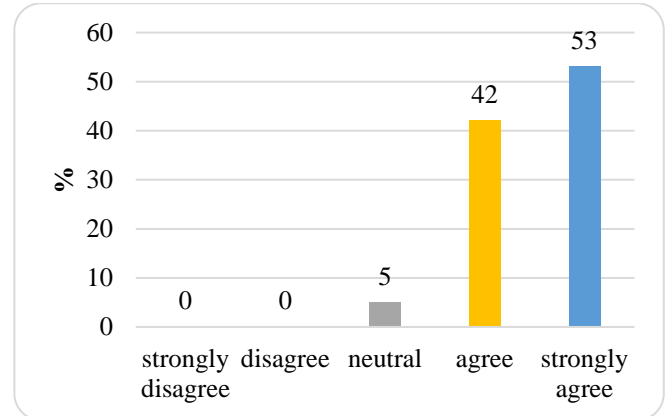


Fig. 5. Knowledge acquisition and farm productivity

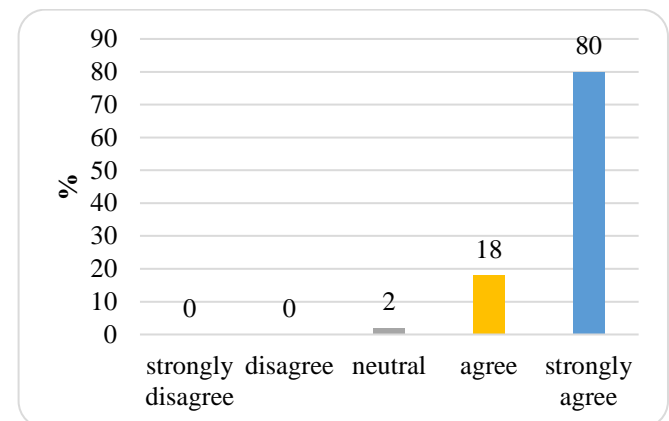


Fig. 6. Developed the ability to solve practical problems in farm

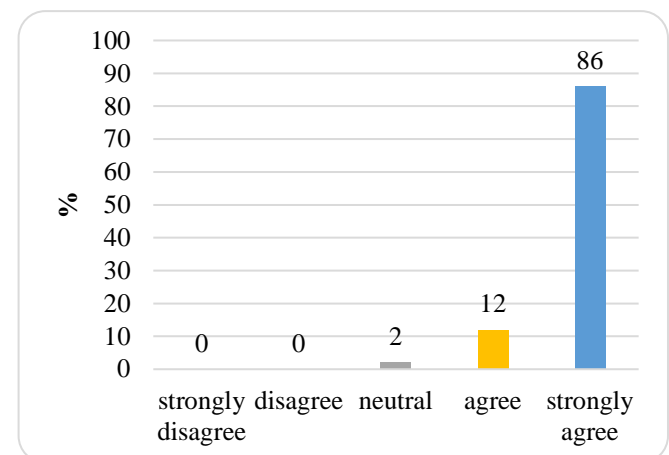


Fig. 7. Good understanding of the concepts/principles of this agricultural training program

Improvement of agricultural knowledge has led to the better implementation of fertilization plans among almost 40% of farmers participating in a training program (Pan and Zhang, 2018).

Huang et al. (2015) also reported that agricultural training has a positive impact on Chinese farmers' fertilizer management knowledge acquisition. Giannakis et al. (2016) reported that a better trained farm population facilitates the introduction of technical innovation, the absorption of externally generated knowledge and plays an important role in the adaptation of the sector to climate change.

4. Conclusion

Small farms and young farmers play an important role in ensuring food and the vitality of rural areas. Farmers besides financing also need technological information to be competitive. The productivity of farmers is closely related to the accumulation of knowledge. The training program had a significant impact on the level of knowledge of the farmers. In our study we found that farmers, especially young farmers, are interested in improving their level of knowledge and applying modern agricultural technologies.

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农业知识转移：以小农场和年轻农民的欧洲基金受益人为例

關鍵詞

知识
欧洲基金
生产率
青年农民
训练

摘要

共同农业政策是欧盟促进农业和农村地区发展的主要手段。欧洲资金对于农业生产的生产力和竞争力以及农业知识和创新的转移至关重要。支持小农场和年轻农场对于农村地区的活力和几代农民的更新至关重要。这项工作的目的是转让农业知识，以提高农业生产的生产力，特别是在年轻农民和小农场之间。我们通过与罗马尼亚的农村发展计划的措施1“知识转移和信息行动”相关的欧洲资金实施了培训计划。分析了100名参加者的特征及其反应。大多数参与者是40岁以下的年轻人（59%）。绝大多数参与者来自农村地区，只有17%来自城市地区。53%的参与者非常同意知识水平会影响农场生产力这一事实。知识转让行动使农民适应农业的新挑战以及提高生产力
