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ASSESSMENT OF THE POTENTIAL OF THE HUMAN FACTOR FOR SUSTAINABLE DEVELOPMENT OF THE RURAL TERRITORIES IN REPUBLIC OF BULGARIA

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Abstract

The primary trends defining the paths toward sustainable development in rural areas of Bulgaria underscore the significant influence of human resources., and the priorities are oriented towards stimulation of the vocational training and science based skills, obtained through appropriate education and specialized training, and leading to success in the development and management of the local economy. The tendency, related to the problem is highlighted as the shortage of adequately educated and skilled entrepreneurs capable of harnessing technological advantages in agricultural production and implementing innovative technologies. The goal of our study is related to investigation and summarization of basic tendencies in this aspect, within Bulgarian agricultural enterprises, the emphasis lies on the crucial connection between theoretical knowledge and hands-on experience, particularly highlighting the importance of educating and training agricultural producers. The education and practical application of scientific knowledge by those engaged in agriculture are vital components for achieving success and ensuring the sustainability of economic endeavours at the local level. By promoting education and training for individuals involved in agricultural activities in the agrarian sector, the agriculture guarantees its sustainable and efficient development, which without doubt reflects on the increase of the sustainability of the rural territories, as a whole. The results of the study formulate guidelines, conclusions and recommendations related to recognition of the need of ensuring the proper education and training of agricultural producers, especially in the realm of environmentally friendly practices and innovative technologies. In conclusion, the synthesized research findings provide insight into the tendencies in basic strategic documents supporting knowledge, as well as data for the educational status in the Bulgarian agrarian sector regarding the potential and significance of the human factor. Future guidelines for the study in the sphere of human resources are outlined in the modern agriculture and the Bulgarian rural territories.

Key words**:** *human factor, education, training, agricultural producers, rural territories.*

INTRODUCTION

The Common Agricultural Policy (CAP) [7, 19], for the period 2023-2027 has decisive significance for *the development of rural areas* and for guaranteeing the future of the agriculture. *The main factor for the successful fulfilment of the planned goals are the human resources* [33, 36], In the present report we turn the attention towards *the significance of the human thought for the future* ***via transmission and reception of knowledge*** and we emphasize precisely on this *potential of the human factor*. The new legislation, in effect from 1st January 2023, suggests a fairer and more ecological CAP, based to a greater extent on the results, which will be implemented by the practices and the approach of the agricultural producers in their practical work [13]. Here is the point of intersection, on which we are placing our emphasis in the present study, between the following ***factors for achieving the capacity required for the contemporary requirements and conditions and scientific and vocational training of the human resources, as well as conditions for achieving sustainability in the development of the rural territories***:

-the relation between ***the theoretical training and practical work*** (all changes and guidelines in the new CAP are based on

accumulated tendencies and scientifically substantiated facts and new necessities, which are to be applied in the work of farmers in the Bulgarian rural territories);

-***basic guidelines, emphasises, conditions and incentives in strategic documents***, related to the education and the training of the agricultural producers [23, 34, 37].

-environmentally-oriented ***thought*** for protection of the environment and health of people and ***actions*** on the part of the agricultural producers for achieving of these goals;

-***role of the institutions, centres and trainers organizations*** in the stimulation and the vocational training of the agricultural producers;

-***the relation - trainers and trainees*** (uncontested fact for the development is the appropriate education in higher schools and vocational trainings of the agricultural producers, held by specialized centres).

This combination of factors enables the transition to a fairer, environmentally-oriented and sustainable economy, based on knowledge and innovations. We are looking for and specifically analyse the listed factors and their application during the implementation of two of the ten main goals of the new CAP, and namely – which is the most important, according to us: ***stimulation and application of knowledge and innovations (education and training)***, without which there can be no sustainable development and successful future for the agriculture and the significance of this factor for another main goal of CAP, and namely - ***development of the rural areas(in the particular case - in Bulgarian rural territories)***.

The European Commission has outlined the Long-Term Vision for EU rural areas up to 2040, delineating areas of focus to foster stronger, interconnected, sustainable, and prosperous rural communities. Through initiatives like the Rural Pact and the EU's action plan for rural areas, featuring key projects and novel tools, the objectives of this vision are pursued. The Rural Vision Ten Shared Goals represent the collective aspirations of rural communities and stakeholders regarding the desired state of EU rural areas by 2040. These goals emerged from extensive dialogues with diverse voices across various rural regions. Central to this vision are the perspectives, intentions, needs, and drive of the human element, serving as the foundation upon which the vision and goals are built, aligning with the objectives of the EU Rural Action Plan and the Rural Pact. *The main engine for implementation of the symbiosis between scientific theoretical intentions and the practical application in the real situation of the rural areas is the inexhaustible potential of the human resources* - ***qualified people with entrepreneurial spirit and forward-looking thinking****, who jointly create the technological, ecological and social progress* [14].The latter is also supported by the new CAP, which ensures the sustainable development of the agricultural holdings, providing support for the smaller ones with an opportunity for adaptation of the planned measures to the specifics of the particular rural territories and conditions. We specify the guidelines, ***evaluate the human potential for environmentally-friendly intention and conscientious fulfilment of ideas behind the policies and we emphasise again on the role of the human factor*** for improvement of the future condition of the agrarian sector via:

-*More environmentally-oriented CAP* – through greater commitment to conditions-the payments are bound by mandatory requirements, for example, at least 3 % of the arable land in each farm should be intended for elements related to the biological diversity; eco-schemes - allocating a minimum of 25% of the budget for direct payments to incentivize agricultural practices and methodologies that promote climate and environmental sustainability; rural area development - dedicating at least 35% of funds to initiatives supporting climate resilience, biodiversity preservation, environmental enhancement, and animal welfare.

[18, 22, 32];

-*Fairer CAP* - through support for the redistribution of income support, in order to better meet the needs of the smaller and

medium agricultural holdings; active farmers, and only they will be able to receive certain support from the EU; support for the young farmers; equality between sexes and increase of participation of women in the agriculture;

-*Improvement of competitiveness* – by strengthening the position of the farmers in the supply chain and increasing the competitiveness; stronger position for negotiations, by encouraging the farmers to work jointly.

Priority emphasis of the CAP for the period 2023-2027 is on *the results and implementation* of the goals set, and outline the ten *specific goals* (as mentioned herein above), related to the social, ecological and economic sustainability in the agriculture and the rural areas, and namely: provision of fair income to farmers; increasing the competitiveness; improvement of the position of the farmers in the food supply chain; actions to combat the climate change; care for the environment; preservation of the landscape and biological diversity; supporting the change of generations; viable rural areas; preservation of the quality of food and health; ***stimulation of knowledge and innovations***. All of them are fundamentally connected to the opportunities and potential of the human resources and their work for application and implementation of the scientific formulations in a practical environment [14]. The outlined goals lie behind the National CAP Strategic Plan, which combines financing to support the income, development of the rural areas and marketing measures, created depending on the national necessities and capacity [27] and, as emphasised at the beginning of the report, we underline those, which concern the direction of the present research – ***assessment of the human factor potential in the Bulgarian rural territories***:

-*Attraction of young and new farmers* (in the period 2005-2020 the share of the young farmers decreases, and the average share of young women-farmers is particularly low);

-*Dependence between the age of the agricultural producers and the size of the holding* (the average farm, managed by an older farmer, is considerably smaller in comparison with all other age groups both in terms of farm land, and in relation to potential production value, the smaller quantity of agricultural holdings owned by young farmers is offset by the rise in the average size of each holding. [16, 30];

-Promotion of growth and equality in rural areas: Fostering employment, economic growth, and gender equality, including active involvement of women in agriculture, social integration, and local development in rural regions. These objectives are closely linked with the circular bioeconomy and sustainable agricultural practices.

-Creation of employment opportunities in rural areas: Stimulating job growth in rural areas is crucial for enhancing quality of life, ensuring access to essential services, and halting the decline in rural population.

-***Training*** (there are many differences in the level of training, acquired by the young managers of agricultural holdings; improvement of educational status of the agricultural producers and provision of access to vocational training remains priority for the policies, oriented to viable production of foods and sustainable use of natural resources);

-***Increasing the cooperation for sharing of knowledge*** (support for exchange of knowledge, training, advises and innovations is of crucial importance for the provision of smart and sustainable agriculture in the rural territories. It includes investments in transfer of knowledge and information actions, consultancy services, etc.);

Encouragement and sharing of knowledge, innovations and digitalization (modernization of agriculture and rural areas via encouragement and sharing of knowledge, innovations and digitalization and their adoption by the agricultural producers through improved access to scientific research, innovations, exchange of knowledge and training).

Achieving progress in the sphere of scientific researches, sharing of knowledge and innovations are of crucial importance for ensuring intelligent and sustainable agricultural sector. EC supports the scientific researches and the innovations in the agriculture, and allots funds for projects,

related to food, agriculture, development of rural areas and bioeconomy, while CAP utilizes the increased investments through inclusion of stronger ***Agricultural Knowledge and Innovation Systems (AKIS)***, in order to stimulate development of innovatory projects, spread out the results of them and encourage their widest possible use. ***Consultancy services*** in the sphere of agriculture are a key instrument for exchange of new knowledge and ideas [24, 25, 26].

Scientific researches and innovations play decisive role, in order to guarantee that EU develops to meet the challenges, it encounters, and at the same time to keep on achieving the goals of its policy, being guided by the long-term strategic approach, oriented towards encouragement of the innovations in the rural areas. This is extremely important instrument in combating problems such as climate change, deterioration of the state of the environment and loss of biological diversity.

In this context, the purpose of the paper is to investigate and summarize the basic tendencies in the characteristics of human resources in the Bulgarian agricultural holdings, emphasizing on the significance of the relation between theoretical training and practical work, with the focus being on the role of education and training of agricultural producers.

MATERIALS AND METHODS

The **methods** used **for the study** of significance and evaluation and the potential of the human element in attaining sustainability in Bulgarian rural areas encompasses various approaches, including standard scientific research methods such as investigation, observation, and review of scholarly literature. Additionally, it involves summarizing and synthesizing statistical data sourced from official channels, employing logical methods, and graphically representing characteristics and trends.

These investigations facilitate the gathering of data regarding the educational attainment of farmers, we can analyse the experience of individual producers and how education affects their agricultural practices, the observational investigations provide information for analysis of the behaviour of farmers with different education and the subsequent decision for action under different conditions, according to the scientific preparation and the skill for its application. The review of the literature provides the opportunity to analyse the existing studies and new guidelines to consider the effect of education and training on the agricultural practices.

Combining these methods, the research workers can get a more in-depth understanding about the way education and specialized training intensify the effect and provide the opportunity to apply and deploy the potential of the human factor in the modern agriculture.

The study aims to highlight the key factors, as perceived by us, concerning the characteristics of human resources that are essential for ensuring sustainability within agricultural holdings, particularly within an economy transitioning towards sustainability.

To accomplish this objective, we will analyze the development opportunities and potential of human resources, focusing on factors such as education and training within the agricultural sector. We will explore their significance in enhancing efficiency and promoting sustainability.

in the Bulgarian rural territories.

RESULTS AND DISCUSSIONS

In Bulgaria, the agricultural sector holds significant importance for the economy. Approximately 4% of the Gross Value Added (GVA) and over 6% of the total employment in the country stem from agriculture. This sector also makes a positive contribution to the country's trade balance. With around 47% of the nation's territory designated as agricultural land, and rural areas occupying 22% of Bulgaria's landmass, they are home to 13% of the population.

During the economic year 2021/2022, the total number of registered farmers stood at 72,371, which decreased slightly to 69,669 as of June 2023. Moreover, the total number of agricultural holdings amounted to 132,742.

[15, 24].

This data confirm *the decisive role of the human factor in the agrarian sector*, but *among the positive tendencies, there are certain problems*, which delay introduction of innovations in the practical work of farmers in the Bulgarian rural territories. Using technologies, introduction of new agricultural ecological and sparing practices, achievements of the agrarian scientific thought are to be inevitably and indispensably adopted in the sphere of the agrarian sector, but this is only possible through transfer of knowledge, of specialized trainings, of vocational education in the area. This is the critical point, which we pay attention to in the present report – the statistics points out a large number of aged producers with experience, but without the necessary education and training and a small number of young educated farmers, who need support. And here comes the role of all strategic documents, which set their goals in this aspect, because it is extremely important to popularise the measures, incentives, conditions and opportunities, so that they will successfully implement their intended use and functions [35, 37].

All strategic documents concerning the advancement of modern agriculture affirm that supporting the exchange of knowledge, training, advice, and innovations is crucial for fostering smart and sustainable agricultural practices and rural development. Therefore, one of the primary objectives is the modernization of agriculture and rural areas through stimulation and sharing of knowledge, innovations and digitalization and through encouragement for their use by the farmers with the help of improvement of the access to researches, innovations, exchange of knowledge and training [25, 21].

As affirmed [8, 9, 10, 11], a deeper understanding of agricultural science is essential in agribusiness and education and training play a crucial role in modern agriculture.

In this aspect, information sheets and the Bulgarian analytical reference book [12] offer an updated and organized overview of the agricultural sector and rural development in Bulgaria. The provided information encompasses key indicators related to agriculture and rural development. The goal of the information notes is to systematize knowledge and facts related to modernization of the agriculture, and to intensify the cooperation and exchange of knowledge and to improve the agricultural qualification.

The current study sheds light on significant disparities in the level of education attained by young managers of agricultural holdings. Enhancing the educational qualifications of agricultural producers and ensuring their access to vocational training remain key priorities for policies aimed at fostering sustainable food production and the responsible utilization of natural resources.

Data from the agricultural holdings census in the preceding programming period reveals that only a mere 3% of agricultural holdings managers possess agricultural education. Among them, 2.08% have completed secondary vocational agricultural education, while 0.83% hold higher agricultural education degrees. Comparative data illustrating the agrarian training of agricultural holdings managers in Bulgaria, in comparison with the EU, can be found in Figure 1.

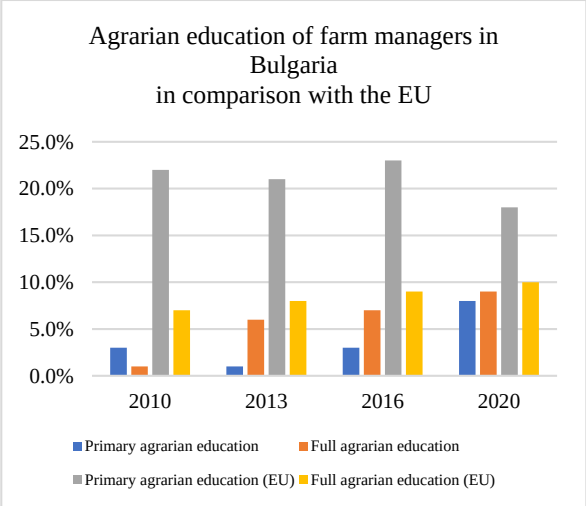

Fig. 1. Agrarian training of managers of agricultural holdings in Bulgaria in comparison with EU

Source: Authors' figure on the basis of data from the Ministry of Agriculture, Agrostatistics [20].

We found the educational status by years, and report positive tendency of weak increase, but still the agrarian sector has an indispensible need of educated managers, who will apply new scientific approaches and innovations in

the practical work. Modern dynamic environment necessitates increasing of the educational capacity, because the European standards and mostly, the complicated ecological situation require much more work and measures in this aspect.

By age group - the managers with secondary vocational education aged between 25 and 44 years are just above – 4%. These values are lower in the age group above 55 years – around 1-2 %. The next graphic represents the age – education dependence and confirms the thesis for predominance of mainly young educated entrepreneurs and the tendency for the older ones to relay mostly on practical experience and to be more reserved towards the continued education and training. This makes them less prepared for the contemporary ecological and technological requirements and challenges.

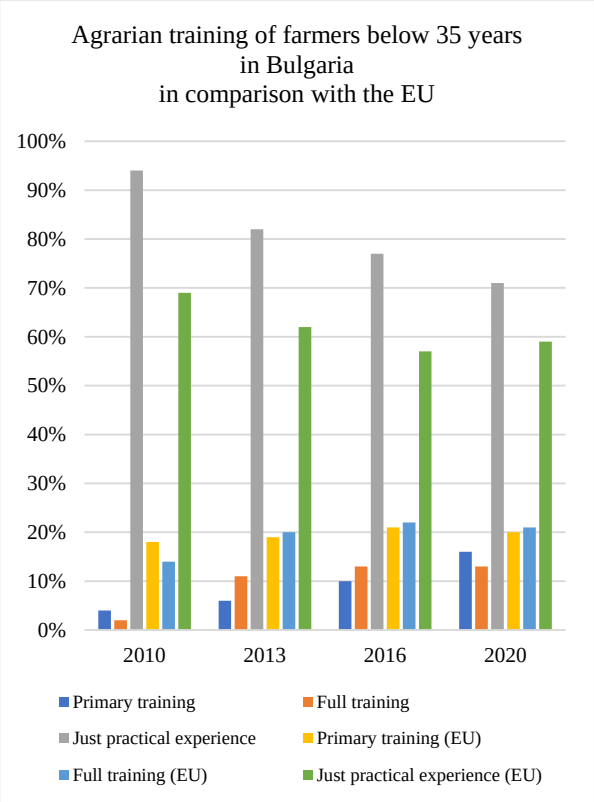

Fig. 2. Agrarian training of farmers below 35 years in Bulgaria in comparison with the EU
Source: Authors' figure on the basis of data from the Ministry of Agriculture, Agrostatistics [20].

With the managers with higher agricultural education there is no particular difference by the age groups, and their share is slightly higher than - 2 % only in the group between 25 and 34 years [19]. It is exactly this unsatisfactory data regarding the educational status of the agricultural producers in the Bulgarian rural territories, which with the rest of the member states is not much higher, that brings up inclusion of promoting training and education within the agricultural sector is highlighted as one of the main goals in the new programming period. Emphasizing capacity building is a primary focus, with a range of measures, incentives, and conditions established to ensure the effective utilization of human resources potential.

CAP provides opportunities for encouragement of the inclusion of young people with specialized agricultural education in the sector of the agriculture and furthermore for increasing of the professional qualification of farmers. The Rural Development Programme sets eligibility conditions for supporting agricultural producers, if they have the respective professional skills and knowledge, and namely: secondary education in the sphere of agriculture or veterinary medicine or secondary economic education with agricultural orientation; higher education in the sphere of agriculture or veterinary medicine or higher economic education with agricultural orientation; completed course of minimum 150 hours under measure 111 of the RDP. Measure 111 is related to courses and information activities, and the training organizations can be Vocational Training Centres, professional high schools, higher schools.

Research of the scientific literature related to the problems and tendencies in the Bulgarian rural territories [1, 5, 6, 28, 29].

Prospects and obstacles in marketing agricultural produce from small and family-owned farms in Bulgaria, were analyzed by [17, 31] who made the review of basic strategic documents, and mostly, the shared opinions and experience from the practical work found that everybody, who is into agriculture, consultations, scientific analyses, training and education, finds difficulties and challenges in his/her adaptation to this ever changing environment.

The main problems, which we could be outlined are:

-A major part of the agricultural producers are already making use of the digital technologies, but there are still hindrances, which stop them from using their full potential, due to lack of qualification and appropriate education and training;
-Most agricultural producers need support, so that they can become familiar with the new technologies and adopt them, as well as for make decisions on using information and communication technologies (ICT), adapted to their particular necessities, and here comes the role of the specialized services, systems, centres, strategies, programmes.
On the basis of the studied research works [2, 3, 4] and the analyses done and authors' findings, we would suggest and consider that the working ***solutions*** for the problems specified can be:
-The relation between the agricultural producers, the society and the natural world changes due to the diminishing resources, the increasing population and the pressure on the environment, the changing expectations of the society, the new technologies and the increasing effect of the climate change. It is due to these particular reasons that the agricultural producers need ***new knowledge, new skills and innovative ideas for*** development and management of smarter and more sustainable production systems;
-All over Europe ***new instruments and approaches*** for improvement of exchange of knowledge and development of the rural areas are being used. Agricultural community becomes more and more creative and inventive. Valuable successful approaches are being shared, such as comparison of the results of the agricultural holdings, which help the agricultural producers in adapting and improving the management of their holdings;
-***EIP-AGRI's „Interactive model for innovations"***, knowledge is already created jointly by agricultural producers, scientists, consultants, enterprises, NGOs, etc.;
-Agricultural Knowledge and Innovation Systems (AKIS) are used to describe the entire ***system for exchange of knowledge***: the ways in which people and organizations interact in a given country or region. AKIS can include practices in agriculture, businesses, bodies, research works, etc. and can vary within broad limits depending on the country or the sector. Upon developing of a new AKIS it is necessary to take into account the technical, organizational and social dimensions („*systemic approach*"), as this *helps in filling the gap between the science and the practice*;
-The „linear transfer of knowledge" model, where researchers, trainers and technical experts develop solutions for problems in the agriculture, whereupon they hand them over to the agricultural producers, becomes less and less corresponding to the present reality. Significance of ***learning through partnership*** increases - agricultural producers and consultants start working through interactive methodologies, which provide better support of the innovations and changes. *New skills for wise and efficient use of the new necessities and opportunities in the agricultural sector are required, along with focusing on the real problems, the agricultural producers are faced with*. This way will be provided solutions applicable in practice, and the agricultural producers will be motivated to integrate and make use of them;
-There is an increasing number of practical ***„networks for knowledge"***, which provide information for the agricultural producers. Example in this aspect are the topical networks, funded by the programme „Horizon 2020", which emphasize the collection and distribution of the best practices and useful findings among the agricultural producers. Integration of these networks for knowledge in the regional AKIS is of critical importance;
-***Exchange of knowledge between agricultural producers.*** Most agricultural producers resolve alone their problems and experiment. They know the specific situation in their holding and adapt their agricultural systems to improve productivity and cost-efficiency. However, when the agricultural producers try or test something, they do it independently, because testing in the sphere of agriculture are not concentrated sufficiently on the specific necessities of the agricultural holdings. Exchange of information with another agricultural producer can lead to breakthroughs in dealing with the challenges;

-Comparative analysis for better results of the agricultural holdings. The comparative analysis provides the opportunity for the agricultural producers to juxtapose the results of their own holding with the ones of similar other holdings. The parameters, which are usually measured, are quality, time and price. Holdings with the best practices are identified and compared with the results and processes of the other studied holdings, and this is called comparative analysis. This way the agricultural producers learn how well they work and more importantly, why some holdings are successful. Comparative analysis is an important instrument for exchange of knowledge and for improvement of productivity and sustainability of the agricultural holdings, and it can be innovative instrument for advisors.

The proposed solutions delineate specific measures and efforts, underscoring the human element as pivotal for sustainability within agricultural holdings. Hence, this report particularly highlights the importance of educating and training human resources. Education and specialized training enhance agricultural producers' knowledge, refine their skills, bridge theory and practice, enable the adoption of modern environmentally friendly practices, and facilitate informed decision-making. These improvements optimize management processes, enhance overall agricultural operations, boost yields, and improve efficiency. Proper education also equips producers with essential knowledge for environmental conservation.

An important benefit of educated farmers is their ability to introduce and utilize new technologies and innovations, thereby enhancing productivity and cost-effectiveness. Moreover, educated agricultural producers are well-informed and knowledgeable on the opportunities for financing [1] and inclusion in different programmes for supporting.

As emphasised at the beginning, the active relation between scientific researches and the condition in practice is of extremely crucial importance. Therefore, we will back our thesis about the need of measures in the direction of increasing the vocational training of the farmers through real and particular statistical data from the practice by regions in the Bulgarian agrarian sector, which bind the education with another factor – upon examining the data on agricultural holdings, we observed that the count of managers with varying levels of education, as detailed in the table below, does not correlate significantly with the number of agricultural holdings. This is because the numbers are nearly identical across the six planning regions. Here comes the summarized data in Table 1.

The most educated in the sphere they work in are the managers of agricultural holdings in South central and in North central region. This can be seen in the statistical table published on the web site of the Ministry of agriculture and food. South central region comprises the areas Plovdiv, Stara Zagora, Haskovo, The most educated in the sphere they work in are the managers of agricultural holdings in South central and in North central region. This can be seen in the statistical table published on the web site of the Ministry of agriculture and food.

South central region comprises the areas Plovdiv, Stara Zagora, Haskovo, graduates among the population aged 25-64 years are more than 30% and above the average level for the country, the industrial area of Gabrovo attracts more people with secondary education – 66% (with 54% for the country), and in the areas of Razgrad and Silistra the share of the population with primary and lower education is significant – more than 31% (with 17% for the country) [19].

We can summarize that the training and education of people working in agriculture, according to the statistics specified, plays important role for its development and sustainability.

The interplay between age and education fosters the cultivation of distinct skills and knowledge within agribusiness. Older individuals impart invaluable experience in traditional agricultural practices, while younger counterparts bring familiarity with new technologies and innovations. This balance of skills enhances the efficiency and productivity of agricultural work [31].

Table 1. Level of education in the sphere of agriculture of the manager of the holding

Level of education in the sphere of the agriculture of the manager of the holding					
Level of education in agriculture of the holding's manager					
Regions	Only with practical experience	Primary agricultural training (completed course in agriculture of at least 150 hours)	Secondary vocational agricultural education	Higher agricultural education	
	Only practical agricultural experience	*Basic agricultural training (a course in Agriculture with a minimum of 150 hours)*	*High-school specialization in agricultural training*	*Higher university degree of agricultural education*	*Statistical regions*
North-western	27,894	487	1,471	529	*Severozapaden*
North central	25,121	485	2,188	839	*Severentsentralen*
North-eastern	25,104	379	1,862	654	*Severoiztochen*
South-eastern	33,731	698	1,644	682	*Yugoiztochen*
South-western	49,871	422	1,493	295	*Yugozapaden*
South central	74,315	886	2,228	864	*Yuzhen tsentralen*
BULGARIA	**236,036**	**3,357**	**10,886**	**3,863**	**BULGARIA**

Source: Authors' figure on the basis of data from the Ministry of Agriculture, Agrostatistics [20].

Among the most significant conclusions from the present study we can outline that the new, common agricultural policy appears to be the intersection point of education and training in agriculture. The guidelines in the development of the rural areas are based on *leading priorities*, which reflect the respective *topical goals of the Common strategic framework* with an emphasis on the following areas, which fully confirm the thesis defended by us about leading role of the education of human resources: stimulation of the transfer of knowledge and the innovations in the sphere of the agriculture and rural areas; strengthening of the relations between agriculture and scientific and research work and innovations; encouraging the lifelong learning and vocational training in the sectors of the agriculture.

CONCLUSIONS

The conclusions drawn from the study regarding the importance and impact of education on the human element in agriculture offer valuable insights into the practices and behaviors of agricultural producers. Younger farmers demonstrate a greater inclination and motivation to enhance their education and pursue specialized training, driven by their innate innovativeness and open towards the contemporary challenges of the economy transforming towards sustainability. The analysis done by regions found predominating in statistical aspect better educated or less scientifically prepared producers, but with an increase of the tendency for introduction of young educated entrepreneurs in the agrarian sector;

Education and training play a crucial role in modern agriculture as a deeper understanding of agricultural science is essential in agribusiness. Moreover, education enables agricultural producers to stay abreast of the

latest technologies and practices, facilitating informed decision-making regarding their operations. Entrepreneurs with higher levels of education tend to be more inclined towards adopting sustainable agricultural practices, whereas older farmers may exhibit greater resistance to change. The examination of the education factor reveals a prevailing trend in Bulgaria favoring individuals with primary agricultural training or secondary vocational agricultural education over those with higher education. This underscores the necessity of elevating the educational attainment of agricultural producers. The research proves that improvement of the agricultural training is required, because ***knowledge*** allow farmers to better cope with the economic, ecological and public challenges. In the EU most managers of agricultural holdings acquire knowledge through practical experience in the farm. Although the share of those, who obtain basic training (any kind of training courses, completed in comprehensive agricultural college or similar institution, or completed agricultural internship) and full agricultural training (equivalent to at least two regular years after the compulsory education), is increasing, it remains relatively low. An integrated package of knowledge, information, advises and training is required to cope with this problem along with an updated and thorough approach, combining advises with research and education, and at the same time including other stakeholders and organizations.

The influence of education and training on the agricultural practices varies depending on the distinct context and culture of the agricultural community under examination, it is crucial to interpret the results of each study with care, considering the unique attributes of the agricultural holdings in Bulgarian rural areas. Education among individuals involved in agriculture stands out as a pivotal factor for the sector's success and sustainability. Therefore, fostering the education and training of the next generation of agricultural entrepreneurs who are to enter the agrarian sector, the agriculture guarantees its continuous success and growth. Acquiring of new knowledge, corresponding to the necessities of agricultural producers and stimulation of changes, encourages agricultural producers to introduce new technologies, implement new techniques, enhance their education level, which is to correspond to the ever changing external and internal environment in the agricultural organizations.

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