

Employment in the Agricultural Sector in the Coordinates of the Digital Economy: New Parameters and Strategic Vectors of Social Policy

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Abstract

The intensive development and spread of digital technologies in recent years have significantly changed the face of key sectors of the economy and the social sphere. In current conditions, agriculture is on the verge of overcoming global challenges associated with transformational processes in the economy and society as a whole. Rural territories are the most important resource of the country, they have a powerful natural, demographic, economic, historical, and cultural potential, which can ensure sustainable diversified development of the region, full employment, high level and quality of life of the rural population. Employment in rural areas is affected by several complex and ambiguous factors - the total number of able-bodied population, the development of the agricultural sector, the provision of enterprises with material and technical resources, and the entrepreneurial activity of rural residents, the development of social infrastructure and several other factors.

Keywords: Agricultural sector; Agricultural enterprises; Digital economy employment; Social policy.

1. Introduction

In current conditions, agriculture is on the verge of overcoming global challenges associated with transformational processes in the economy and society as a whole. Global trends such as the need to provide food for the growing population of the earth, the transition to organic food in growing urbanized areas, the increasing differentiation of the population in terms of living standards and access to healthy foods, the need to increase life expectancy with preservation of its quality, global warming, increasing aridity and desertification of agricultural lands, increasing anthropogenic pressure on the ecosystem.

The current and future of the social and labour sphere in general, especially in the field of employment and income of the economically active population, is now becoming crucial. We are all involuntary witnesses that the new economy and the network society, which are increasingly becoming more digital, do not show the expected human-centeredness and sustainable socialization of labour relations. The scale and depth of problems related to employment, income in the broadest sense, and asymmetries in the field of economic and social development are such that they threaten the social security not only of countries with economies in transition or developing countries but also which until now were considered successful. In addition, the world's population is growing every year; the primary need is clean water and food. That is why the agricultural sphere is one of the areas where innovations and technologies are actively implemented, which accelerate the main processes in the agrarian sphere and significantly affect workers. The transition to a digital economy is a natural process and requires the modernization of employment and the search for new parameters and strategic vectors of social policy.

Thus, the purpose of the article is to analyze the state of employment in agriculture and the coordinates of the digital economy and develop strategic vectors of social policy based on the study.

2. Theoretical and Analytical Basis of the Study

Employment is the activity of citizens that is related to the satisfaction of personal and social needs and brings them income in cash or in another form.

According to the Law of Ukraine "On Employment", employment is an activity not prohibited by law, related to meeting their personal and social needs in order to receive income (wages) in cash or other forms, as well as the activities of family members, who carry out an economic activity or work for business entities based on their property, including free of charge.

Analytical analysis of employment. At the present stage of development, there are many expert predictions about the impact of digitalization on employment. According to Sobolev and Musiyuk [1]; Azmuk, *et al.* [2]; Ildiko and Vamosi [3], responsible for organizing the work of the Government Commission for Coordination of the "Open Government" on the digital economy by 2036, can be automated up to 50% of work expressed in person-hours, and by 2066, the share can reach 99%. Jobs will appear in high-tech areas and will be reduced in the real sector of the economy and administrative work.

However, the list of popular and profitable professions for the next 10 years does not include any profession related to the agriculture or food industry [4]. In Ukraine, according to the State Employment Service, from January-May 2020, 48.1% of the unemployed were employed in agriculture, forestry and fisheries. Quarantine did not affect the work of farmers – 12.6 thousand agricultural workers acquired the status of registered unemployed from March 12 to May 31, 2020. In the same period last year, 2019, 11 thousand farmers became unemployed, i.e. growth against the background quarantine took place only 1.6 thousand people, which is almost 13%.

Unfortunately, the agricultural sector remains one of the most significant economic activities where shadow employment is popular. In the structure of employment in the informal sector, agriculture accounts for 42.1%, which is the highest among other areas of activity.

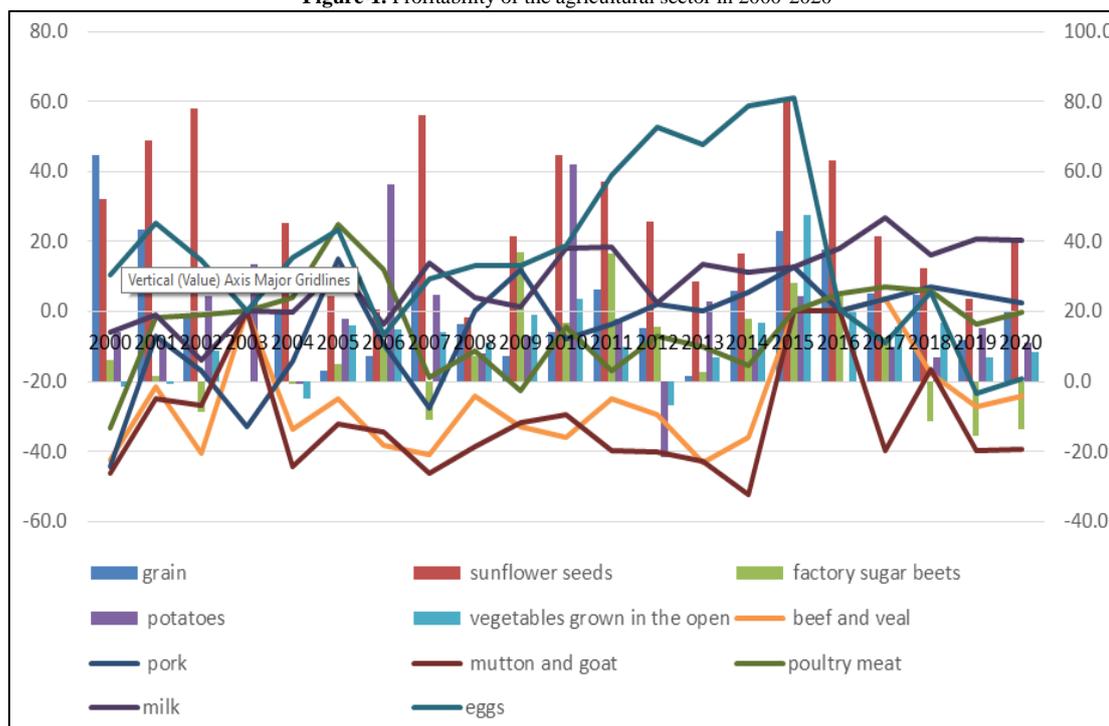
The All-Ukrainian Association of International Employment Companies calculated and concluded that about 5 million Ukrainians are forced to work abroad in different countries [5].

Ukrainians in Poland mainly perform simple physical work, work in construction and repair work, in transport sector, agriculture, services, in the production of plants and factories. There is also a small percentage of Ukrainian citizens working in the field of IT technologies, in higher education institutions, in the field of health care [6].

However, it is necessary to take into account the seasonality of work: in the season the agricultural sector is in first place.

Analytical analysis of the agrosphere of Ukraine. There are several industries that are unprofitable and will not be able to exist without state support (Fig. 1). This is primarily beef and veal, mutton and goat.

Figure-1. Profitability of the agricultural sector in 2000-2020

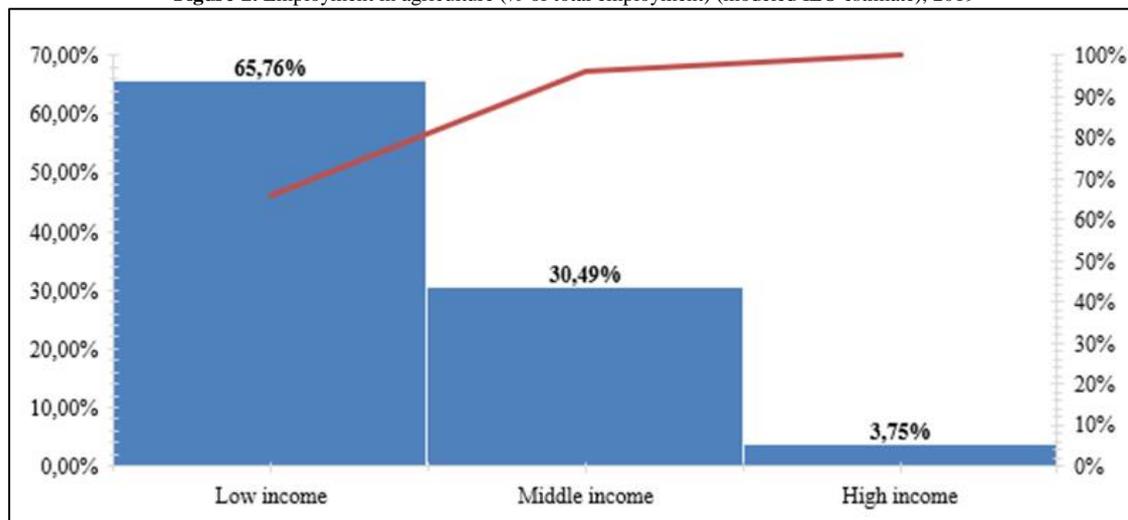


Source: authors' development according to State Statistics Service of Ukraine [7].

The analysis showed that the average profitability of agricultural industries over the past 20 years is negative - the production of absolutely all types of meat (beef and veal; pork; mutton and goat; poultry meat); The average profitability over the past 20 years of other crops, except for grain and sunflower seeds, also does not exceed 20%.

Thus, the analysis shows that Ukrainian agriculture needs fundamental changes and the digital economy, along with effective social policy, can become effective tools.

At the same time, high employment in the agricultural sector is inherent in low-income countries (Fig. 2)

Figure-2. Employment in agriculture (% of total employment) (modeled ILO estimate), 2019

Source: authors' development according to World Bank [8]

This distribution once again proves that it is necessary to modernize agriculture.

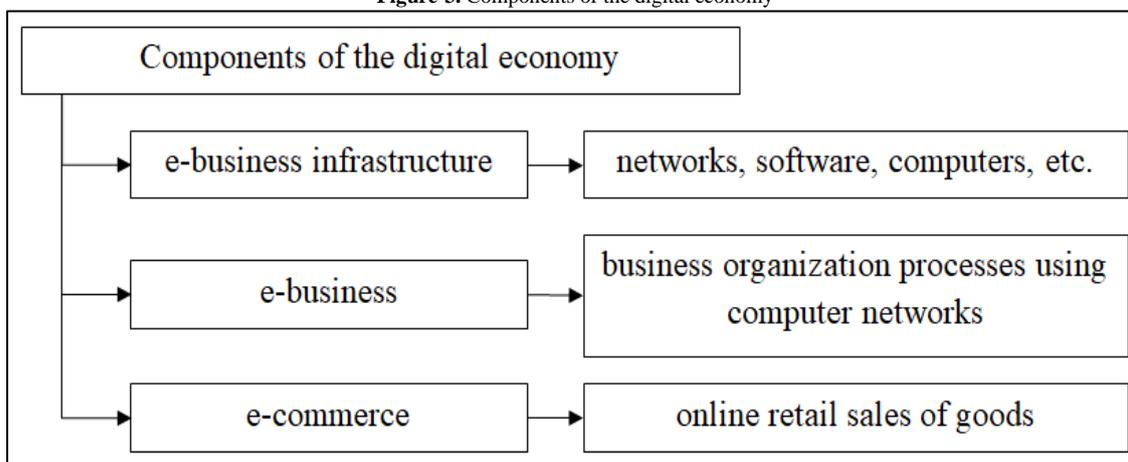
Under the current conditions, the modernization of agriculture is a non-alternative option for achieving stable economic growth, especially against the background of the influence of global trends, the need to increase the competitiveness of the agricultural business in the context of increasing globalization, the spread of digital, robotic technologies and intelligent production systems, as well as the growing role of the agricultural sector for domestic economy [9, 10]. Modernization, being an inseparable aspect of social development, as a systemic phenomenon, was updated during periods of the need to reduce the backlog from socio-economically developed countries. The problem of modernization of the economy is inextricably linked with the process of changing technological patterns, which determine its type and the specifics of economic mechanisms. Associating periods of modernization transformations with a change in the technological platform for the development of the economy, we proceed from the total replacement of the existing technological level of economic development with a more modern one, based on the latest achievements of scientific and technological progress, while the “waves” of modernization transformations have a periodic nature inherent in cyclic processes

3. Coordinates of the Digital Economy

The term "Digital Economy" (less often - electronic economy) appeared in 1995 simultaneously with the Canadian management professor [11, 12] and the American computer scientist [13] and quickly became widespread, pushing the concepts: "New Economy", "Web Economy", "Internet Economy", "Network Economy" and giving this term more specific content. The term "Digital Economy" became widespread after the Ministerial Conference of 40 developed countries held under the auspices of the OECD in 2016, which adopted Declaration 23 "Digital Economy: Innovation, Growth and Social Well-Being" (www.oecd.org).

The concept of "digital economy" is very multifaceted and can be interpreted very broadly [14-16]. It is formed as a generalization of a rather large variety of phenomena, and the specific meaning largely depends on the context in which the concept is used. In short, the digital economy is an economy based on digital computer technologies, but, unlike informatization, digital transformation is not limited to the introduction of information technologies, but radically transforms spheres and business processes based on the Internet and new digital technologies.

Initially, three components of the digital economy were distinguished (Fig. 3).

Figure-3. Components of the digital economy

Source: authors' development

However, as new technologies spread: Big Data, Cloud Computing, Blockchain, Cognitive Computing, Internet of Things, robots, financial Internet technologies (Fintech), as well as virtual goods (games, music, films, books), this concept has become much more broad meaning, and the central element of the digital economy became clear – the Internet. It also became clear that the digital economy significantly changes traditional business processes, which is called digitization of economics abroad (or in industry – digitization of industrial organization). In industry, changes in technology and business processes under the influence of the digital economy have been called the fourth industrial revolution (Industry 4.0) [17-19].

Due to the well-known shocks in the field of production, science and education that took place in Ukraine, there is a noticeable narrowing of the scope of highly specialized knowledge - both scientific and industrial. Market processes themselves do not require such knowledge, and, causing a decline in production, the breakdown of industrial ties and many associations, push out not only middle-skilled workers, but also professionals with knowledge and experience, forcing them to perform random functions.

Thus, the digital economy forms the directions of employment modernization:

- 1) automation and robotization of existing business processes;
- 2) formation of a new management system (social policy).

4. Results

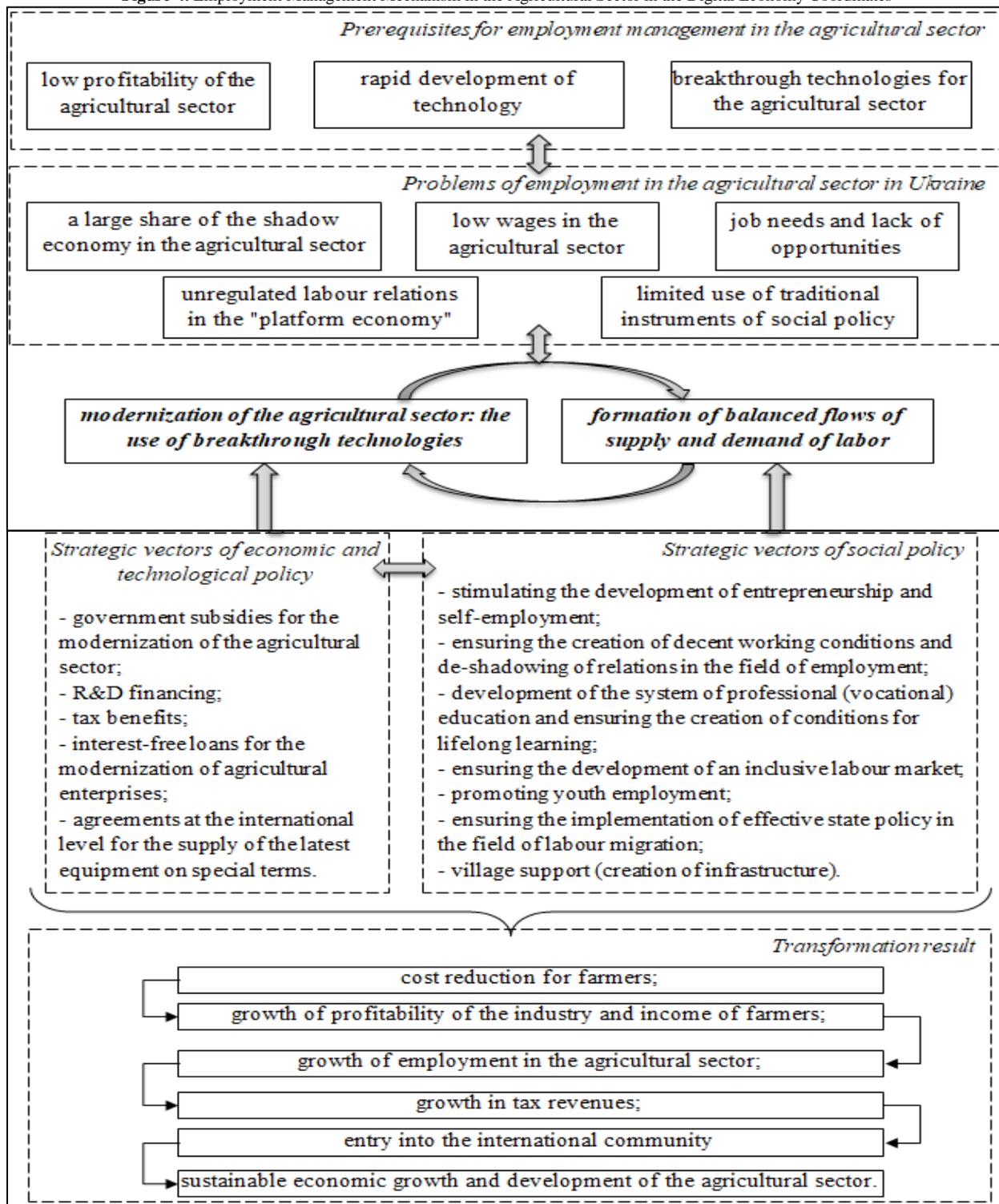
Employment policy involves a system of measures to create conditions for full use of the potential of labor and business activity of the working population, linking this activity by taking into account the specifics of group interests with the objectives and guidelines of socio-economic development. It should play the role of a stabilizing factor that prevents unemployment from significantly exceeding the allowable level, i.e. to become long-term, stagnant during the economic recovery due to the qualitative mismatch of supply and demand in the labor market.

Emphasis in employment policy should be placed on the formation of competitiveness of all groups of economically active population as a basis for ensuring high mobility and adaptability of employees and entrepreneurs to fluctuations in the world market. The main condition for the formation of an optimal labor market is the creation of balanced flows of supply and demand of labor. Currently, the professional qualification level of citizens who offer their labor force, does not fully meet the growing demands of employers. The reason for this is a number of previously noted demographic and socio-economic factors, including insufficient adaptation of the vocational education system to the realities of a market economy. Thus, we offer a mechanism to solve the identified problems in the agricultural sector (Fig. 4).

The increase in the migration loss of the population in rural areas is characterized by the labor aspect, that is, the movement of the population is carried out in accordance with the needs for employment and the capabilities of specific municipalities to provide jobs in the relevant areas. The level of wages of workers also acts as a factor in reducing the employment of rural residents.

Social living conditions of the rural population largely depend on the level of development and arrangement of highways in rural areas. In the crisis, new road construction has virtually stopped, and existing roads are not repaired and fail. As a result of off-road, UAH 800 million is lost annually [20]. Therefore, the preservation and development of the system of roads in rural areas is an important socio-economic problem of national importance. In modern conditions, the density of roads is insufficient and has not changed over the past 25 years.

Figure-4. Employment Management Mechanism in the Agricultural Sector in the Digital Economy Coordinates



Source: authors' development

There is a sufficient number of kindergartens, schools and medical institutions in the villages. But we are talking about the lack of modern equipment in most of them. With insufficient funding, neither schools nor art and cultural institutions are able or interested in organizing clubs for children and adults, sports and cultural and educational activities, amateur activities, etc. The spread of new technologies also changes public consciousness, individualizes social life; contributes to the growth of social selfishness, loss of national identity and the development of mass culture.

These circumstances, as well as unsatisfactory working conditions and unemployment in rural areas have caused the degradation of human capital, reducing the educational, cultural, professional level of the population. Thus, in 2013, 51.7% of rural residents were employed in the simplest professions, not because they lack professional education, but because of the lack of jobs in the specialty. The solution of these problems can be based on the development and implementation of at least three groups of activities: the revival of past practices of extracurricular activities, clubs, sports sections, amateur art.

It is necessary to organize new activities in the countryside - construction of school (rural) stadiums, institutions of the leisure industry, health and tourism, the creation and operation of scouts, business associations, activation of rural communities in general [21]. Special attention should be paid to the introduction of innovations in socio-economic activities in rural areas - through the creation of marketing-analytical and consulting centers (centers) based on existing PC capacity of schools, clubs, village council to provide information and other services to villagers, landscape design studios personal growth, etc.

These measures can be financed on the basis of the use of state and local budgets, rural communities, patrons, volunteer assistance. It is where the attributes of social responsibility of large and medium agribusiness are used, all residents, local authorities, there is proper employment, mutual support of the population, development of new activities and rural areas in general.

5. Discussion

The study identified the following reasons for low employment in the agricultural sector:

- a large share of the shadow economy in the agricultural sector;
- low wages in the agricultural sector;
- job needs and lack of opportunities;
- unregulated labor relations in the "platform economy";
- limited use of traditional instruments of social policy regulation.

Ensuring employment has always been one of the priority vectors of social policy. In the coordinates of the digital economy, new parameters and strategic vectors of social policy were proposed to improve the situation, namely:

- stimulating the development of entrepreneurship and self-employment;
- ensuring the creation of decent working conditions and de-shadowing of relations in the field of employment;
- development of the system of professional (vocational) education and ensuring the creation of conditions for lifelong learning;
- ensuring the development of an inclusive labour market;
- promoting youth employment;
- ensuring the implementation of effective state policy in the field of labour migration;
- village support (creation of infrastructure).

Ultimately, this will reduce the costs of farmers and increase their income. As a result, the industry will begin to develop, which will lead to the creation of new jobs. The expansion of the sector will lead to an increase in tax payments, which will ultimately lead to sustainable economic growth and development of the agricultural sector and of the country.

6. Conclusion

In our opinion, further development of the labor market, employment of the rural population, promoting the improvement of human capital in rural areas, improving the welfare of rural residents, the revival of rural areas should be based on further reforms in the agricultural sector. Their institutional support is based on new additions to existing laws and the adoption of new regulations.

Their main provisions - encouraging entrepreneurs to create new jobs, supporting young people and women in employment, retraining of those who were uncompetitive in the labor market, improving social and labor relations, supporting rural communities, volunteering as manifestations of social responsibility are extremely important measures for solving the problems of employment and socio-economic development of the population of rural areas.

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