

Personnel Potential in Agribusiness Enterprises in the Context of an Innovation Economy

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Abstract

The sustainability of social and economic development of countries and individual regions depends on various factors, one of which is the personnel potential shaping the labour market. In recent years, the number of people employed in agriculture has declined and has led to a shortage of agricultural personnel in the labour market. The aim of the research is to study the condition of human resources in agricultural enterprises under the conditions of pandemic and economic crisis and to identify ways of solving personnel problems. The object of the study is the personnel potential in agricultural enterprises in the example of the countries of the Eurasian Economic Union for the period from 2016 to 2020. The methods of comparative analysis, absolute and relative values, and abstract thinking served as a methodological basis for the study. The information base of the study was statistical data from the Eurasian Economic Union, and the works of scientists. The article analyses the dynamics of the urban and rural population in the countries of the Eurasian Economic Union, the number of the employed population by types of economic activity, including the agricultural sector. The main task of improvement of agricultural and industrial enterprises is to provide the industry with highly qualified personnel, solve which it is necessary to pay a lot of attention to agricultural education. Currently, many school graduates do not want to work in the agricultural sector due to the fact that it is considered unclaimed, non-prestigious, and low-paid. Therefore, various measures are needed within the states to attract graduates to the agricultural sector and to retain young professionals in rural areas. The article identifies and proposes the main ways of improving the training of in-demand personnel for agricultural and industrial enterprises based on conducted research.

Keywords

Agricultural sector, employment, digital technology, pandemic, economic crisis.

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Introduction

In recent years, urbanisation has been taking place throughout the world, with the movement of people, especially young people, from rural to urban areas, which has led to the problem of agricultural labour supply in the agrarian sector. This problem can, in turn, cause labour shortages in the agricultural sector of the economy and significantly affect its productivity. The problem of outflow of personnel from rural areas is addressed both by special commissions at the federal-state level and by relevant departments in the agricultural sector enterprises at the local

level. The agricultural and industrial complex (AIC) is one of the main spheres and branches of the national economy and is of strategic importance for the economic development of all countries and regions (Dovgal et al., 2017). The main task of the agricultural and industrial complex is to provide the population of the country with food and raw materials for industry. The agricultural and industrial complex consists of the industries that produce agricultural products; the enterprises that process agricultural products; the enterprises that bring food products to the end consumer (Schetytnina and Stenkina, 2019).

The development and improvement of agricultural and industrial enterprises largely depend on the provision of AIC with highly qualified agricultural personnel, which has an impact on the labour market. The qualitative composition of agricultural personnel forms the personnel potential of an agricultural enterprise, which is influenced by such factors as age of employees, education level, practical work experience, skills and abilities of employees, moral and material interest, ability to adapt quickly to the rapidly changing new economic conditions (Gusakova and Gusakov, 2020).

The problem of studying the personnel potential of various sectors of the economy, in particular the enterprises of the agricultural and industrial complex, is relevant and of high priority for ensuring the sustainable functioning and consistent development of social and economic systems of the agrarian sector of the economy and the state as a whole. As a central figure in the agrarian economic system, the AIC is called upon to systematise and optimise the staffing distribution and inflow locally in accordance with the actual needs of each particular enterprise, village, or agricultural and technical complex (Makhazhanova et al., 2022). At the same time, ensuring high rates of attraction of highly qualified personnel to the agricultural sector of the economy and the rational use of human resources for its dynamic and innovative development requires a constant diagnosis of the implemented personnel policy of agricultural organisations and identification of internal and external factors that affect its transformation (Akhmetzhanova et al., 2023). Young people, loose and often unemployed, or working in sub-optimal conditions, are best suited for working in the agricultural sector. However, special conditions are required to attract them. The employment rate of the working-age population is characterised by various factors, the main ones of which include: social and economic factors; technical and technological; structural; sectoral (Çera, 2022). The inflow of personnel into the sphere of rural employment is influenced by such factors as the standard of living in rural areas, the state of social protection of the rural population, development of the real economy, the rate of labour force growth, the share of the employed population in rural areas; the state of material and technical base of agricultural enterprises, the level of development of social infrastructure (Postnova et al., 2020).

Materials and methods

The theoretical and methodological basis of the study was built on the works of leading academic economists in the field of studying the problems of development and improvement of the agricultural and industrial complex, and the issues of formation of agricultural human resources. In the course of the study to determine the current state of market potential, and the need for agricultural personnel, the method of expert survey was applied, which was conducted in the online format and included the participation of graduates of agricultural universities. In Russia, the urban population for 2020 was 109562.5 thousand, compared to 109032.4 thousand in 2017, an increase of 530.1 thousand. According to statistics, the number of the rural population compared to the urban population in the Eurasian Economic Union (EAEU) countries has decreased in recent years, except for Kyrgyzstan and Kazakhstan. Thus, in 2020 the rural population was 52345.6 thousand people, while in 2017 it was 52962.9 thousand people, a decrease of 617.3 thousand people is observed. The rural population in Russia has decreased by 585.5 thousand in recent years from 37772.0 thousand in 2017 to 37186.1 thousand in 2020. In the EAEU, the urban population in 2020 is 131928.3 thousand, the rural population 52345.6 thousand, the share of the rural population concerning the urban population is 39.7%, while the share of the urban population is 60.3%. In Russia the share of the rural population in 2020 is 33.9%, urban population 66.1%. In Kazakhstan, the share of the rural population in 2020 is 70.4%, while the share of the urban population is 29.6% (Polevaia, 2019; Gagiyeu et al., 2020).

The aim of the research is to study the condition of human resources in agricultural enterprises under the conditions of pandemic and economic crisis and to identify ways of solving personnel problems. The object of the study is the personnel potential in agricultural enterprises in the example of the countries of the Eurasian Economic Union for the period from 2016 to 2020.

Results and discussion

Ways to improve the agricultural sector

In spite of high performance in higher education, the majority of graduates demonstrate a deficit of self-confidence, self-sufficiency, and emotional stability. They have excellent knowledge

of economic terminology, technical, agronomic, veterinary, and other knowledge, but the share of entrepreneurial initiative, in general, does not exceed a tenth of the respondents (Gagiyev et al., 2020). To develop and improve the agricultural sector, one of the priority tasks is to retain young professionals in rural areas, for the solution of which the state should develop necessary measures to improve the level and quality of life in rural areas. The main priority is to develop state-level rural youth employment programmes. There is currently an acute shortage of qualified personnel in agriculture, while many young specialists are not employed. The main reasons are as follows:

1. The low level of qualifications of agricultural personnel, which makes them uncompetitive in the labour market.
2. Low wages for agricultural personnel, which is unattractive to young professionals.
3. Harsh working conditions that are not paid decently.

All of these reasons can lead to young people having difficulty finding work for long periods of time and an increase in unemployment. The consequences of unemployment lead to the fact that young people lose interest in work, their skills are lost, and their moral and psychological state deteriorates, which can lead to serious consequences, in particular, it can lead to drunkenness, crime, and other negative phenomena (Holovenchyk, 2019). And therefore, to prevent all these negative consequences, it is necessary to work on moral and material incentives for rural youth. For the agricultural sector to be attractive, it is necessary to work on the improvement of villages and infrastructure, the creation of natural landscapes, the improvement of ecology, etc. To attract young specialists and to retain them in rural areas, it is necessary to carry out a set of measures at the state level, which will entail costs from the budget, but the incurred costs will pay off and bring their benefits (Liasnykov and Romanova, 2019; Herasimov et al., 2020). Basic measures to retain young people in the countryside:

- the payment of a placement allowance for young professionals on arrival at their place of work;
- providing young professionals with housing;
- the creation of good working conditions, i.e., the provision of jobs;
- ensuring a decent wage;
- development of social infrastructure in rural areas;

- providing opportunities for career development.

One of the new directions of increasing the attractiveness of rural areas is the development of agricultural tourism, as many rural areas are located in favourable climatic conditions and tourists have the opportunity to relax and taste natural products (Shcherbakov, 2021; Blynova, 2020; Antonova, 2020; Aletdinova, 2019; Akimbekova, 2019). The development of agricultural tourism will provide agricultural enterprises, in particular entrepreneurs, with additional income to supplement their core activities. It is possible to resume work by holding various competitions to identify the best agricultural workers according to the results of the year for their moral and material encouragement (Blynova, 2020). The solution to these tasks will raise the prestige of living and working in rural areas. There is an acute shortage of qualified personnel in rural areas. One of the main factors in the sharp decline in agricultural development has been the fall in the level of wages (Khodakivska et al., 2022). At the current stage, the difference between wage levels in agriculture and urban areas is about 60%. Improving working conditions, combined with motivational measures, would create a base that would increase the attractiveness of working in rural areas for highly qualified personnel. Solving the problem of supplying the village with qualified human resources, by identifying the factors that have an intensive influence on the decrease in people's motivation to live and work in rural areas, and finding ways to form a qualified personnel reserve is of the greatest interest to research (Gagiyev et al., 2020). The requirements for young professionals are constantly increasing and are reduced not only to the presence of a high level of professional erudition but also to the ability to creatively organise agricultural production, the ability to motivate agricultural workers, to prevent and resolve managerial conflicts. To develop and strengthen a highly qualified human resource potential, one of the main ways is to attract investment, the feasibility of which is as follows:

- increasing the competitiveness of agricultural enterprises;
- expansion of production and the expansion of agricultural enterprises to a higher level, including the global level;
- improving the financial condition of enterprises through higher profits, lower production costs, and higher labour productivity (Shahini et al., 2023).

Young people mostly leave for the cities and do not want to engage in agriculture (Gainanov and Migranova, 2020; Zabelina, 2021). Table 1 demonstrates the number of urban and rural populations in Eurasian Economic Union countries in recent years (2017-2020) according to Statistics of the Eurasian Economic Union (Statistics of the Eurasian Economic Union, 2021). Due to the process of urbanisation all over the world, including in the countries of the Eurasian Economic Union, the number of the urban population compared to the rural population is increasing every year, which can be seen in Table 1.

Due to the data in Table 1, the urban population has increased in recent years in almost all EAEU countries except Armenia. The increase in the urban population indicates that there is an urbanisation process, i.e., an outflow of the rural population to cities, which creates the problem of a lack of human resources in rural areas. The urban population of EAEU countries in 2020 was 131928.3 thousand people, compared to 13065.8 thousand people in 2017, i.e., an increase of 13025 thousand people, compared to 2018 an increase of 7905 thousand people. In Kazakhstan, there is also an increase in the urban population in 2020 compared to 2017 by 607.2 thousand people (Liasnykov and Romanova, 2019). From the analysis in Table 1, it can be concluded that, overall, the urban population dominates, characterised by an urbanisation process in which urban settlements increase in relation to rural settlements. The main reasons for the rural population's exodus to cities are as follows: more employment opportunities; more favourable living

conditions than in rural areas; higher wage levels; career prospects for young people (Lakomý and Alvarez-Galvez, 2022).

Analysis of data on employment in areas of economic activity

The working-age population of countries is employed in different areas of economic activity, and in order to determine the ratio of the employed population in different areas of economic activity, an analysis of the population and its dynamics in recent years has been carried out (Herasimov et al., 2020). Table 2 shows the number of people employed by type of economic activity in recent years from 2016 to 2020.

According to data in Table 2, the number of the employed population in Russia has increased in recent years from 1011, thousand people in 2017 to 1077.4 thousand people, including a decrease in the agriculture, forestry and fishing industries from 317.1 thousand people in 2017 to 235.9 thousand people in 2020. The decrease in the number of people employed in the agricultural industrial sector is mainly due to the fact that in recent years there has been an outflow of the rural population to urban areas, which directly affects the human resources potential of agriculture. The industry sector has seen an increase in the number of people employed in recent years, from 132900 in 2017 to 149000 in 2020. In Kazakhstan, the total employed population by economic activity increased from 8583.4 thousand people in 2016 to 8832.0 thousand people in 2020, including a decrease in the employed population in agriculture

	2017	2018	2019	2020	Deviations of 2020 from		
					2017	2018	2019
Urban population							
EAEU	130625.8	131137.8	131512	131928.3	13025	7905	4163
Armenia	1901.5	1895.8	1894.9	1892.1	9.4	3.7	2.8
Belarus	7286.5	7284.3	7291.7	7303.9	17.4	19.6	12.2
Kazakhstan	10331.5	10509.8	10698.2	10938.7	607.2	428.9	240.5
Kyrgyzstan	2073.9	2121	2173.7	2231.1	157.2	110.1	57.4
Russia	109032.4	109326.9	109453.5	109562.5	530.1	235.6	109
Rural population							
EAEU	52962.9	52577.6	52448.3	52345.6	617.3	232	102.7
Armenia	1084.7	1076.9	1070.4	1067.6	17.1	9.3	2.8
Belarus	2183.2	2164	2137.5	2106.4	76.8	57.6	31.1
Kazakhstan	7586.7	7647.5	7697.4	7697.4	110.7	49.9	
Kyrgyzstan	4066.3	4135.7	4215.8	4292.4	226.1	156.7	76.6
Russia	37772	37553.5	37327.2	37186.1	585.5	367.4	141.1

Source: Statistics of the Eurasian Economic Union (2021)

Table 1: Urban and rural population (at the beginning of the year, thousand people).

	2016	2017	2018	2019	2020	Deviations of 2020 from			
						2016	2017	2018	2019
Armenia									
Employed population	1006.2	1011.7	1048.5	1077.4	1025.4	19.2	13.7	23.1	52
Agribusiness	338.1	317.1	272.0	235.9	229.6	108.5	87.5	42.4	6.3
Belarus									
Employed population	4 405.7	4 353.6	4 337.9	4 334.2	4 319.6	86.1	34	18.3	14.6
Agribusiness	425.1	416.6	404.9	377.0	375.9	49.2	40.7	29	1.1
Kazakhstan									
Employed population	8 553.4	8585.2	8695.0	8780.8	8732.0	178.6	146.8	37.0	48.6
Agribusiness	1 385.5	1319.0	1228.2	1184.7	1175.1	210.4	143.9	53.1	9.6
Kyrgyzstan									
Employed population	2 363.7	2 351.2	2 382.5	2 442.7	2 445.2	81.5	94	62.7	2.5
Agribusiness	633.3	541.4	482.7	443.2	446.0	187.3	95.4	36.7	2.6
Russia									
Employed population	72 392.6	72 315.9	72 531.6	71 933.1	70 601.4	1714.5	1930.2	1930.2	1 331.7
Agribusiness	4 863.2	4 268.0	4 266.8	4 196.1	4 236.7	626.5	31.3	30.1	40.6

Source: Statistics of the Eurasian Economic Union (2021)

Table 2: Number of employed populations by type of economic activity (according to NACE ed. 2; annual average; thousand people).

from 1385.3 thousand people in 2016 to 1157.1 thousand people. In 2020, the decrease is 210.4 thousand people. The decrease in the employed population in agriculture is associated with the development of urbanization, i.e., the outflow of the rural population to cities. Young people do not want to work in rural areas, as agricultural occupations are currently considered to be non-prestigious and low-paid. Currently, there are several reasons why school graduates do not want to enter agrarian specialties (Shcherbakov, 2021). To make agrarian specialties prestigious it is necessary to carry out extensive work at the state level to attract school graduates to agrarian education, first of all, it is necessary that agrarian specialties are in demand, promising and highly paid in the labour market. Table 3 shows the distribution of the employed population by main economic activity in the EAEU countries and in Russia and Kazakhstan in 2020 relative to 2019.

Table 3 demonstrates, that in the EAEU countries, the share of the employed in different economic activities has fluctuated insignificantly over the last five years. Thus, in the EAEU countries over the period from 2016 to 2020, the highest share of the employed population is in the service sector, which fluctuates between 65.1-66.7%. In industry, the share of the employed population in recent years has varied between 18.9% and 19.1%. The lowest share of the employed population is in agriculture, which accounted for 7.3-8.6%

of the total employed population from 2016 to 2020. This figure is very low compared to the service sector and indicates that the countries' populations are not interested in working in the agricultural sectors. In Russia, for example, over the last five years, the service sector has also had the highest share of the employed population, ranging from 66.3 to 67.5%. The agricultural sector employs between 5.8-6.7% of the population, which is also very low. In Kazakhstan from 2016 to 2020, the share of the employed population in 2020 has increased by 3.6% compared to 2016 to 66.8%. The share of the employed population in agriculture in Kazakhstan is higher compared to the EAEU and Russia, but nevertheless, there has been a 2.7% decrease in the share in recent years from 16.2% in 2016 to 13.5% in 2020. The decrease in the share of the employed population in agriculture is mainly due to a decrease in the share of agricultural enterprises. The decrease in the number of working-age people in agriculture is a major blow to the development of rural areas, in particular, the shortage of agricultural personnel is increasing, which affects the investment attractiveness of the village (Trusova et al., 2021). One of the main indicators determining the level and quality of life of the population is the amount of workers' wages by type of economic activity (Blynova, 2020). Table 4 shows the ratio of average monthly nominal wages of employees by the main types of economic activities in 2020 as a percentage of 2019.

	Agriculture, forestry, and fisheries	Industry	Construction	Service sector
EAEU				
2016	8.6	18.9	7.4	65.1
2017	7.7	18.9	7.3	66.1
2018	7.5	19.0	7.2	66.3
2019	7.3	19.1	7.1	66.5
2020	7.4	19.1	6.8	66.7
Russia				
2016	6.7	19.8	7.2	66.3
2017	5.9	19.7	7.3	67.1
2018	5.9	19.7	7.1	67.3
2019	5.8	19.9	6.9	67.4
2020	6.0	19.9	6.6	67.5
Kazakhstan				
2016	16.2	12.7	7.9	63.2
2017	15.4	12.7	7.1	64.8
2018	14.1	12.6	7.2	66.1
2019	13.5	12.5	7.2	66.8
2020	13.5	12.5	7.2	66.8

Source: Statistics of the Eurasian Economic Union (2021)

Table 3: Distribution of the employed population by field of activity (as a percentage of total employment).

	Armenia	Belarus	Kazakhstan	Kyrgyzstan	Russia
National average	103.2	114.2	114.6	107.7	106.0
agriculture, forestry, and fisheries	98.6	116.1	114.4	102.3	107.0
mining industry	95.6	111.6	110.3	109.5	106.5
manufacturing industry	99.0	110.6	112.0	106.0	
electricity supply, gas supply	98.9	110.4	109.9	104.4	
water supply	109.4	109.3	106.9	115.4	104.1
construction	108.7	112.8	104.8	100.9	101.6
wholesale and retail trade	103.9	110.6	105.4	101.8	103.2
transport and storage	100.6	105.1	109.4	91.6	102.8
accommodation and food services	92.1	102.4	113.7	112.4	94.1
information and communication	111.6	124.8	109.6	116.1	109.6
real estate	104.2	111.5	107.8	96.0	102.8
education	106.0	113.3	130.3	118.7	106.2
health	108.6	129.5	130.9	101.2	114.5
provision of other services	99.6	110.9	135.0	88.3	111.6

Source: Statistics of the Eurasian Economic Union (2021)

Table 4: Average monthly nominal wages and salaries by major economic activity in 2020 (as a percentage of wages and salaries by 2019).

Due to Table 4, nominal wages in all EAEU countries increased in 2020 compared to 2019, in Armenia by 3.2%, Belarus by 14.2%, Kazakhstan by 14.6%, Kyrgyzstan by 7.7%, and Russia by 6.0%. The largest increase in nominal wages is observed in Kazakhstan, while the smallest increase is observed in Armenia. Thus, the average monthly nominal wage in Armenia increased by 3.2%

in 2020 compared to 2019. The average monthly wage in Armenia increased in such economic activities as wholesale and retail trade – by 3.9%, water supply – by 9.4%, construction – by 9.4%, information and communication – by 11.6%. The average monthly wage in agriculture decreased by 1.4% in 2020 compared to 2019. In Kazakhstan, average nominal wages in 2020 compared to 2019

increased in almost all economic activities, with a nationwide increase of 14.6%, in agriculture by 14.4%. In Russia, nominal wages in 2020 increased in almost all economic activities compared to 2019, except in accommodation and catering services, where the decrease amounted to 5.9%.

Agriculture is one of the main branches of the national economy and provides the population with food, and raw materials for industries, including food and light industry (Atamanyuk et al., 2016; Antonova, 2020). The provision of high quality and affordable food has a huge impact on the level of food security of the countries. In this regard, an important role in the production, procurement, and processing of agricultural products belongs to agricultural personnel. The labour market is currently experiencing an acute shortage of highly qualified agricultural specialists whose role is very important in production and technological processes (Shcherbakov, 2021).

To determine the reasons for reluctance to work in rural areas, a survey was conducted among students. The survey was conducted among students studying agricultural specialties and according to its results, the main reasons for students' reluctance to live and work in rural areas were identified, as shown in Table 5. The respondents were selected 250 students of agricultural specialties of I-V courses of Zhetysu University named after I. Zhansugurov. Zhansugurov. Of them 170 women (68%) and 80 men (32%). The age range of the students was from 17 to 23 years old.

No.	Reasons	Percentage, %
1	Low wages	2.1
2	Poor organisation of work – no normal working conditions	12.3
3	Inadequate social infrastructure	7.2
4	Lack of desire to work in the village	22.0
5	Agricultural occupations are unattractive	12.5
6	Lack of prospects for further professional development	15.2

Source: Statistics of the Eurasian Economic Union (2021)

Table 5: Main reason for lack of desire to work in rural areas.

Nevertheless, according to the results of the surveys, some students expressed a desire to live and work in rural areas under the following conditions:

1. High wages – 45.0%.
2. Normal housing and living conditions, i.e., the provision of comfortable accommodation – 25%.

3. A well-established infrastructure – 30%.
4. Creation of normal working conditions, opportunities for further career development – 25%.

However, some students do not want to live and work in rural areas, even if all the conditions are in place (Aletdinova, 2019; Akimbekova, 2019; Tsyhankova, 2019; Petrova, 2021; Altykhov, 2019; Gainanov and Migranova, 2020; Zakuskin, 2021). Time has shown that the development and improvement of the agricultural sector require agricultural specialties. Based on the research, taking into consideration supply and demand in the labour market, the list of the most demanded specialties in the Eurasian labour market in the agricultural sector for the coming years has been determined. Table 6 shows the list of the most demanded professions in the Eurasian labour market in the field of the agricultural industrial complex from 2021 to 2022.

At present, the most in-demand professions in the agricultural sector are those in both crop production and animal husbandry. There is a shortage of agronomists – specialists who are engaged in the effective management of crop production, studying the issues of planting, care of plants, and harvesting. It is the work of the agronomists that determines the high yield of plants at minimum cost (Petrikov, 2020; Lischuk and Kapeluk, 2021; Dudin, 2021; Polukhina, 2020). Plant protection specialists, who deal with plant protection against various pests and insects, also play a major role in the efficiency of crop production. There is a shortage of seed agronomists, who deal with the breeding of new zoned plant varieties. In animal husbandry, the most sought-after specialists are veterinarians, who deal with the prevention and treatment of farm animals. In recent years, there is no recruitment for such a speciality as “Zootechnics” and after a certain period, there is a shortage of this profession, which is engaged in breeding and caring for animals. There is also a shortage of veterinary laboratory technicians, as their number has decreased in recent years (Tsyhankova, 2019). Time has also shown that in recent years enrolment in such specialties as “Reclamation Engineer” and “Hydrotechnician” has decreased due to which there is a shortage of these specialties. The main function of these specialties is to work on improving the quality of land, which directly affects the yield of crops. Table 6 reflects the most demanded agrarian professions in the Eurasian labour market, but it is not a complete list, which was supplemented

No.	Name of the agricultural occupations in demand				
	Armenia	Belarus	Kazakhstan	Kyrgyzstan	Russia
1	Agronomist	Agronomist	Agronomist	Agronomist	Agronomist (various specialisations)
2	Specialist (crop protection agronomist)	Plant protection agronomist	Plant protection agronomist	Plant protection agronomist	
3	Seed agronomist	Seed agronomist	Seed agronomist	Seed agronomist	
4	Veterinary surgeon	Veterinary surgeon	Veterinary surgeon	Veterinary surgeon	Veterinary surgeon
5	Geneticist		Geneticist		Breeder zootechnician
6	Hydrotechnician		Hydrotechnician		Hydrotechnician
7	Zootechnician	Zootechnician	Zootechnician	Zootechnician	Zootechnician
8	Keclamation engineer			Keclamation engineer	Keclamation engineer
9	Veterinary laboratory technician	Veterinary laboratory technician	Veterinary laboratory technician	Veterinary laboratory technician	Veterinary laboratory technician

Source: Statistics of the Eurasian Economic Union (2021)

Table 6: List of the most demanded professions in the Eurasian labour market in the agricultural sector (ACS) from 2021 to 2022.

with professions according to the requirements of the modern labour market. Since in modern conditions of management preference is given to more advanced specialities and given the widespread application of digitalisation in the near future, the following specialities may be the most in-demand:

1. The agronomist-geneticist. This profession will be in demand in the future, and the agronomist, in addition to solving problems in cultivation and plant care, may also be involved in the development of new plant varieties and their adaptation to each climatic zone (Mero et al., 2023).
2. Agricultural engineer. Given the fact that more modern agricultural machinery is being produced every year, where knowledge of programming, microelectronics is required, there is a shortage of specialists in agricultural machinery in the labour market. In this regard, the agricultural engineering profession will be the most in-demand in recent years.
3. Drone operator. Drones are now widely used in agriculture, which has created a need for drone operators.
4. Agricultural ecologist. The profession of ecologist has existed for a long time, but few ecologists deal directly with the ecological climate in agriculture. Therefore, this speciality will be in demand in the coming years.
5. Agrocybernetics. The speciality of agrocybernetics is necessary due to the use of automation and digitalisation

of all production and technological processes. This specialist is engaged in the development of new automation programmes, and digitalisation methods (Erochkina and Potapova, 2020; Ryabchikova, 2021).

Conclusion

To enhance the competitiveness of agricultural specialists, there is a pressing need to elevate the standards and quality of agricultural personnel training. This entails active engagement of employers in the educational process to instill practical skills and the potential for practical training leading to graduate employability. Furthermore, the integration of educational institutions and agricultural enterprises within the agricultural industrial complex is imperative. Establishing favorable working, social, and living conditions, along with providing competitive wages, will heighten the prestige associated with agricultural occupations. Moreover, a systematic approach is required to continuously elevate the qualifications of agricultural personnel, involving ongoing training, retraining, and the establishment of a talent pool.

To address the agricultural sector's need for a skilled workforce, key measures include reviving state-sponsored training programs, ensuring graduates have access to employment opportunities, providing social and economic support during their transition into the workforce, and implementing incentive systems. Revitalizing targeted training programs helps align education with industry demands. Creating employment pathways for graduates

through partnerships with agricultural enterprises, rural administrations, and educational institutions is crucial. Supporting graduates with measures like installation grants and financial assistance fosters a smooth transition. Finally, introducing incentives, such as scholarships, training programs, and professional competitions, not only motivates talent but also contributes to the sector's growth and long-term sustainability. These strategies collectively promote a qualified talent pool and enhance the agricultural sector's resilience and prosperity.

In addition to the measures mentioned earlier for boosting rural employment, a pivotal and crucial approach involves fostering growth within the real sector of the economy, particularly in agriculture. It is imperative to focus on sustaining and augmenting employment opportunities through dynamic and innovative advancements in diverse businesses. This entails initiatives such as fostering local industry, establishing agricultural product processing enterprises, constructing storage facilities, broadening the scope of services, and more.

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