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THE LABOR POTENTIAL OF RURAL AREAS OF KAZAKHSTAN IN THE CONTEXT OF DIGITALIZATION OF THE ECONOMY

ЭКОНОМИКАНЫ ЦИФРЛАНДЫРУ ЖАҒДАЙЫНДАҒЫ ҚАЗАҚСТАННЫҢ АУЫЛДЫҚ АУМАҚТАРЫНЫҢ ЕҢБЕК ӘЛЕУЕТІ

ТРУДОВОЙ ПОТЕНЦИАЛ СЕЛЬСКИХ ТЕРРИТОРИЙ КАЗАХСТАНА В УСЛОВИЯХ ЦИФРОВИЗАЦИИ ЭКОНОМИКИ

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Abstract. *The goal* is to reveal main directions for increasing the efficiency of labor potential of rural areas of the Republic of Kazakhstan in the context of digitalization of the economy, to identify criteria and analyze factors of its growth. *Methods* – comparative analysis and scientific abstraction, allowing to determine the importance of rural labor resources in production of public goods and increasing reproduction. *Results* – there is no general indicator that determines the activity of the personnel and conditions for its formation. According to the authors, the prerequisites for this are ecological-geographical, socio-economic, technological development and digital transformation. The priority areas of demographic policy and mechanisms for increasing employment and profitability of rural workers are given. The structure of the agricultural labor market is considered: the level of innovative activity of enterprises in the context of regions; the number of farmers - users of the Internet system in different countries. *Conclusions* – information and communication systems in the economy have reduced the gap in the quality of education between rural and urban schools by more than 30%, and digital entrepreneurship also involves the

creation of new enterprises characterized by: the use of digital technologies to improve business operations, the invention of digital business models, interacting with customers and stakeholders through digital platforms. Taking into account the real situation, it is necessary to find opportunities for optimizing the activities of the able-bodied part of the population of the Kazakhstani village, while it is important to analyze the economic and technological needs of economic entities in agricultural sector. Also, the authors focus on some practical problems that the researcher and manager face when assessing the labor potential of rural areas.

Аңдатпа. ***Мақсаты*** **– экономиканы цифрландыру жағдайында Қазақстан Республикасы ауылдық аумақтарының еңбек әлеуетінің тиімділігін арттырудың негізгі бағыттарын ашу, оның өсу факторларын анықтау және талдау.** ***Әдістері*** **– ауылдық жерлердегі еңбек ресурстарының қоғамдық тауарларды өндірудегі және ұдайы өндіруді арттырудағы маңыздылығын анықтауға мүмкіндік беретін салыстырмалы талдау және ғылыми абстракция.** ***Нәтижелері*** **– кадрлар құрамының белсенділігін және оның қалыптасу шарттарын анықтайтын жалпы көрсеткіш жоқ. Авторлардың пікірінше, мұның алғышарттары экологиялық-географиялық, әлеуметтік-экономикалық, технологиялық даму және цифрлық трансформация болып табылады. Демографиялық саясаттың басым бағыттарына және ауыл еңбеккерлерінің жұмыспен қамтылуы мен табыстылығын арттыру тетіктеріне баға берілген. Аграрлық еңбек нарығының құрылымы: өңірлер бөлінісіндегі кәсіпорындардың инновациялық белсенділігінің деңгейі; әртүрлі елдердегі интернет - жүйені пайдаланушы фермерлердің саны қаралған.** ***Қортындылар*** **– экономикадағы ақпараттық-коммуникациялық жүйелер ауылдық және қалалық мектептер арасындағы білім беру сапасындағы алшақтықты 30%-дан астамға қысқартты, сонымен қатар цифрлық кәсіпкерлік жаңа кәсіпорындар құруды көздейді: бизнес операцияларын жақсарту үшін цифрлық технологияларды пайдалану, цифрлық бизнес модельдерін ойлап табу, цифрлық платформалар арқылы клиенттермен және мүдделі тараптармен өзара әрекеттесу. Нақты жағдайды ескере отырып, қазақстандық ауыл халқының еңбекке қабілетті бөлігінің қызметін оңтайландыру үшін мүмкіндіктер іздеу қажет, бұл ретте аграрлық саланың шаруашылық жүргізуші субъектілерінің экономикалық-технологиялық сұраныстарын талдау маңызды. Сондай-ақ, авторлар ауылдық жерлердің еңбек әлеуетін бағалау кезінде зерттеуші мен басшының алдында тұрған кейбір практикалық мәселелерге назар аударған.**

Аннотация. ***Цель*** **– раскрыть основные направления повышения эффективности трудового потенциала сельских территорий Республики Казахстан в условиях цифровизации экономики, выявить критерии и проанализировать факторы его роста.** ***Методы*** **– сравнительного анализа и научной абстракции, позволяющие определить значимость трудовых ресурсов сельской местности в производстве общественных благ и увеличении воспроизводства.** ***Результаты*** **– не существует общего показателя, определяющего активность кадрового состава и условия его формирования. По мнению авторов предпосылками этому являются эколого-географическое, социально-экономическое, технологическое развитие и цифровая трансформация. Дана оценка приоритетным направлениям демографической политики и механизмам повышения занятости и доходности сельских тружеников. Рассмотрена структура аграрного рынка труда: уровень инновационной активности предприятий в разрезе регионов; численность фермеров - пользователей интернет-системы в различных странах.** ***Выводы*** **– информационно-коммуникационные системы в экономике сократила разрыв в качестве образования между сельскими и городскими школами более, чем на 30%, также цифровое предпринимательство предполагает создание новых предприятий, характеризующихся: использованием цифровых технологий для улучшения бизнес-операций, изобретением цифровых бизнес-моделей, взаимодействием с клиентами и заинтересованными сторонами с помощью цифровых платформ. С учетом реальной ситуации необходимо изыскать возможности для оптимизации деятельности трудоспособной части населения казахстанского села, при этом важно анализировать экономико-технологические запросы хозяйствующих субъектов аграрной сферы. Также авторами заостряется внимание на некоторых практических проблемах, которые встают перед исследователем и руководителем при оценке трудового потенциала сельских территорий.**

Key words: rural areas, labor potential, digitalization, innovative enterprises, competitiveness, technological development, employment rate, demography, migration.

Түйінді сөздер: ауылдық аумақтар, еңбек әлеуеті, цифрландыру, инновациялық кәсіпорындар, бәсекеге қабілеттілік, технологиялық даму, жұмыспен қамту деңгейі, демография, көші-қон.

Ключевые слова: сельские территории, трудовой потенциал, цифровизация, инновационные предприятия, конкурентоспособность, технологическое развитие, уровень занятости, демография, миграция.

Introduction. Population is the basis for the formation of labor resources and job supply in the labor market. The number, structure and density of the population have a significant impact on the level of staffing of the agricultural sector, its development, and the level of use of natural resources.

It is important to define efficiency criteria in order to determine the prerequisites for increasing the efficiency of labor potential of rural territories. The labor potential of rural areas determines the ability to participate in the production of public goods and increase reproduction.

At present, digital engagement platforms have significant potential to improve access to information and services for people in rural areas. However, many smallholder farmers in developing countries remain isolated from digital technologies due to a lack of skills in their use.

Young people have a special role to play in this process. They have the advantage of using digital literacy to adapt quickly to innovative solutions. When digital areas are integrated into educational programs, it is possible to gain insight into the use of digital tools and the skills to create them [1].

Today, the working and living conditions of the rural population indicate that the labor potential in the agricultural sector is not fully used. The experience of foreign countries with developed market economies can serve as an example for Kazakhstan in regulating the labor market. At the same time, in our opinion, it is necessary to develop special programs aimed at the formation and development of a community of highly qualified Kazakh rural workers on technological modernization.

In our opinion, the situation with the outflow of personnel and highly qualified specialists abroad can be solved only by radical measures: political and economic stability, accumulation of resources for investment in science and innovation in rural areas.

Material and methods of research. As a methodological basis of the study were used systemic, economic-mathematical and statistical methods.

Among the general scientific methods the methods of dialectical, scientific abstraction, analysis, synthesis, historical and logical knowledge were used. Consistent application of methods of general scientific, statistical, mathematical contributed to the creation of the model with specific proposals.

Rural areas, in particular, are lagging behind in digital skills acquisition. It is necessary to develop a training model based on benchmarking and economic-mathematical methods. digital skills, aimed at teaching rural people to learn how to evaluate and implement best practices and technologies for their business.

With the growth of high-speed Internet connections with Internet access, mobile applications, social media, and digital interaction platforms have significant potential to improve access to information and services for rural residents.

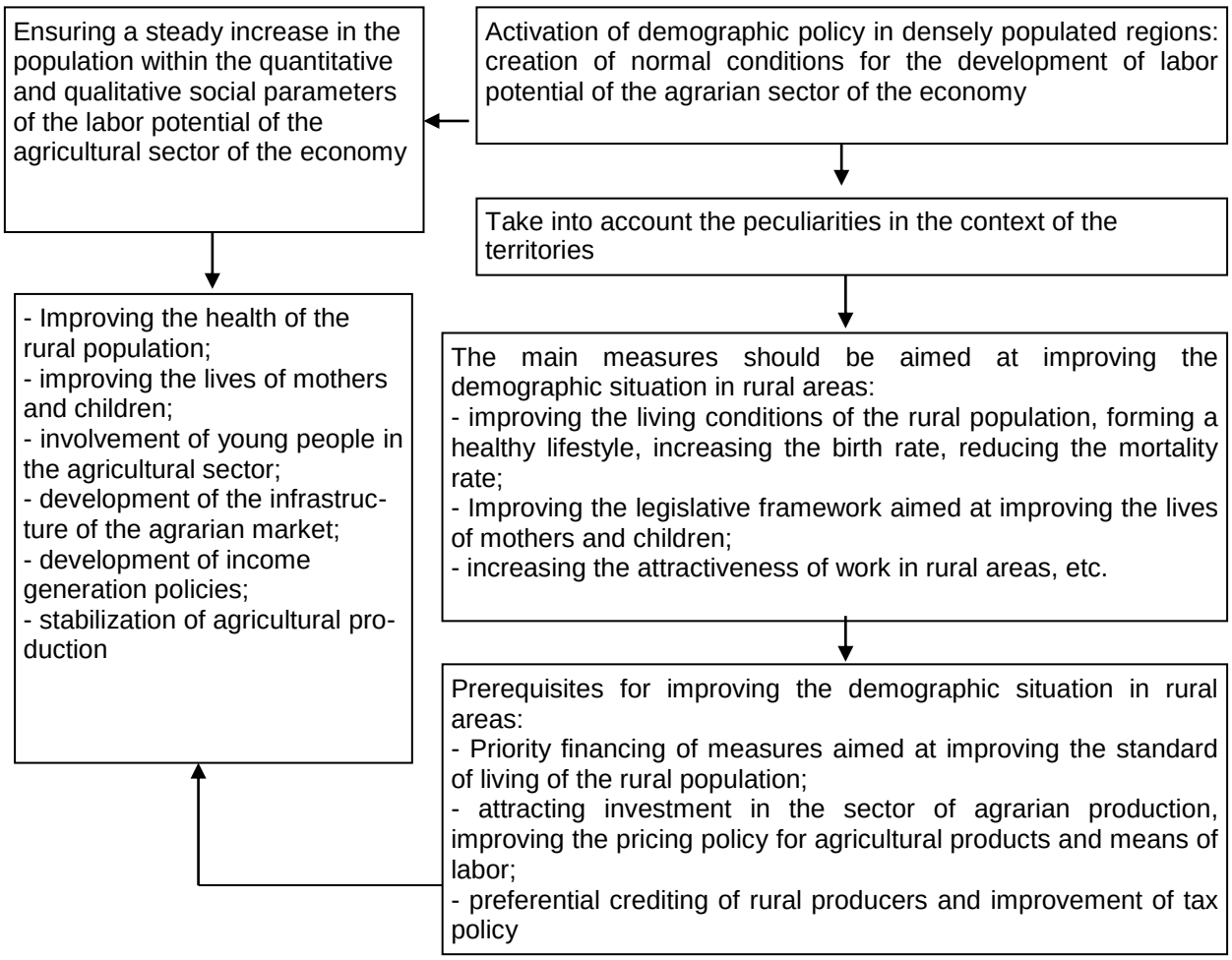
In this connection there are institutional factors connected with the effectiveness of the normative-legal base of the labor market. Institutional factors for them, on the one hand, are the development of special targeted programs at the state or regional level, on the other hand, are closely related to the labor resources of the young generation, which are created through various benefits, scholarships, grants, etc. these programs and various legislative acts related to wages [2].

Results and their discussion. In order to normalize the demographic situation in the formation of labor potential in rural areas, it is necessary to pursue a demographic policy and ensure an influx of migrants. The arrival of migrants improves the age structure of the rural population, so it can be considered an important component of demographic development (natural population growth) [3].

We believe that the following measures should be taken for this purpose:

- regulation of internal labor migration, including support for rural migration;
- shift work in other regions, assistance in employment of population who moved for seasonal work;
- regulation of external labor migration in accordance with the demand in the labor market of the region;
- providing information on employment opportunities for residents of remote villages, etc.

Therefore, the state's demographic policy in rural areas should become an important part of national policy. The directions of demographic policy in rural areas are shown in figure.



Note: compiled by author

Figure - Priority areas of demographic policy in rural areas

Formation of market economy in agriculture, development of agro-industrial structures in a short period of time, improvement of agrarian economy deteriorated in the process of increasing production efficiency are evidence of growth of small and medium business of agrarian sector in entrepreneurial sphere [4]. The development of rural economy will be possible due to its industrial and social sphere and environmental protection. It means increase and development of productivity of agricultural enterprises and other farms.

In our opinion, it is very important that the population is interested in working in agriculture. Land labor processes must be efficient and attractive to the rural population

Thus, the efficiency of the use of labor potential in agricultural production depends on the freedom of economic management.

The prestige of rural labor increases with the results of peasant labor. At the same time, the importance of measures to regulate the labor market in rural areas is obvious. Three categories of people work in agriculture: people employed in agricultural enterprises, owners of peasant (farms) and people employed on their own farms [5]. We believe that optimal employment in rural areas will be possible only with the formation of various forms of farming in the agricultural sector.

Today, the country's human resources are one of its competitive advantages, and the level of professional training is the main guarantee of quality of life. Especially rural youth is a vulnerable group in the labor market. The younger generation has limited opportunities for independent employment. In order to regulate this segment of the labor market on the part of the state, it is necessary to form regulatory measures taking into account the requirements for young people in the labor market [6].

It should be noted that in Ka-zakhstan the project «With Diploma - to the village!» has been implemented for more than 10 years. It was designed so that young doc-tors, veterinarians, and teachers could go to work in those villages that currently lack qua-lified specialists. The professional adaptation of young people begins at school and conti-nues with the study of special professions [7].

Thus, in order to fully utilize the labor potential in rural areas, in our opinion, it is necessary to solve two main problems: technical and organizational-economic conditions of labor and social infrastructure of rural areas (living conditions) [8].

The development strategy is important for Kazakhstan and its regions, the launch of production through the development of science in the diversification of the country's economy, increasing the level of innovative development is one of the strategic objectives of Kazakhstan. This strategy defines the basic mechanisms of science and education, technological development in the country and regions [9].

We believe that in order to solve the complex issues associated with the effective use of labor potential in rural areas, it is necessary to increase the motivation of the rural population to self-employment.

At any stage, the educational system in the agricultural sector has developed faster than in other areas, a vast experience in the training of qualified personnel has been accumulated [10]. Even today this experience shows that in many cases the final result of agricultural work depends on the organizational, political and business qualities of specialists and their managers. Therefore, mastering new technologies is of great importance in the education of agricultural specialists in Kazakhstan. On the other hand, the activity of agricultural specialists is important not only in their own business, but also in the cultural and educational sense [11].

Nearly half of the world's population now uses the Internet, disproportionately among nations. In Least Developed Countries (LDCs) only one in seven people use the Internet, and there are obvious differences between rural and urban areas (although patterns vary from country to country). As table 1 shows, the most active Internet users are farmers in Norway, Finland, Dania and Holland.

Table 1 - Farmers' use of the Internet system

Country	Number of farmers with full-time employment	Number of farmers working on the Internet system	
		чел.	%
Czech Republic	175 000	4 000	2,3
Dania	60 000	30 000	50,0
Finland	80 000	40 000	50,0
France	330 000	25 000	7,5
Germany	170 000	55 000	32,4
Ireland	40 000	10 000	25,0
Italy	260 000	10 000	3,8
Japan	426 000	52 000	12,2
Holland	100 000	50 000	50,0
Norway	70 000	40 000	57,1
Poland	2 000 000	5 000	2,5
Spain	1 000 000	10 000	10,0
Sweden	30 000	14 000	46,7
United Kingdom	80 000	30 000	37,5
Russia	275 000	3 000	1,1
Note: compiled from source [12].			

Education level and income are strong determinants about how people use the Internet. Those with higher levels of education tend to use more advanced services such as e-commerce, online financial and government services. Users with low levels of education tend to use the Internet primarily for communication and entertainment [13].

In rural areas where education and literacy levels are low and generally lower, cell phones tend to be used primarily for communication and social networking. This presents a challenge to the implementation of a digital farming application that requires more advanced digital skills. The low overall level of smartphone ownership in rural areas, combined with the high cost of internet and limited network coverage, also creates challenges for the use of mobile farming applications and limits the scope, using social media to help agriculture to support information flows between farmers.

The digital availability of information can help farmers to make better farming decisions that can increase yields, reduce environmental impacts and improve livelihoods [14].

The variety of technologies available and the lack of standardization and interoperability between them, such as for data exchange, also create barriers for farmers as there is a

lack of independent advisory services to support these decisions [15].

Countries that have high Information and Communication Technologies education programs can afford digital tools and have good access to the Internet using better digital skills.

In the agri-food sector, the digital transformation will change the structure of the labor market and the nature of work. It will redefine the role of farmers and agro-producers, and change the set of skills needed in the agrifood sector [16].

During the pandemic, in Kazakhstan, agricultural producers began to receive government subsidies online. During the coronavirus pandemic, the government managed not only to increase the amount of funding, but also the number of recipients. The online subsidy mechanism has markedly reduced costs for businesses and the state, thus procedures that used to take months of work by teams of specialists now take a few days [17].

Young farmers, in particular, are also more likely to take risks in running their businesses. In Italy, for example, more than 17 thousand agricultural startups were created in 2018 by men and women between the ages of 25 and 30.

Developed countries are still leaders in creating an entrepreneurial culture. Rural entrepreneurship is a promising development and business option for effectively harnessing the labor potential of rural areas.

At the beginning of 2018, there were 82 agri-tech startups operating in Africa, more than half of which had been launched in the previous two years.

However, despite the rapid growth of digital agriculture technology, most Infor-mation and Communication Technologies enabled solutions have yet to be developed and demonstrated at scale.

As shown in table 2, Kostanay region and Astana city are the leaders in the level of implementation of innovations at the enterprises. Low activity level of enterprises in the field of innovation is noted in Mangistau and West Kazakhstan regions.

Table 2 - Level of activity of enterprises in the field of innovation by region, in %

Region name	Number of enterprises in total, units level of innovation activity, in %					
	2015	2016	2017	2018	2019	2020
Republic of Kazakhstan	31 784	31 077	30 854	30 501	28 411	28 087
	8,1	9,3	9,6	10,6	11,3	11,5
Akmola region	1 325	1 301	1 299	1 207	1 148	1 160
	6,8	7,0	7,5	7,7	7,7	7,4
Aktobe region	1 236	1 234	1 149	1 174	1 144	1 118
	7,0	9,3	10,1	10,6	10,6	11,1
Almaty region	1 643	1 648	1 797	1 830	1 715	1 666
	6,9	7,8	8,1	8,3	9,3	9,8
Atyrau region	1 276	1 193	1 145	1 161	1 081	1 074
	8,0	8,5	8,0	8,3	9,0	10,1
West Kazakhstan	857	917	932	952	834	786
	4,1	3,6	5,3	5,3	5,3	5,9
Zhambyl region	852	834	846	841	739	732
	10,6	10,8	11,3	11,4	13,1	13,7
Karagandy region	2 340	2 235	2 309	2 289	2 175	2 196
	9,2	10,6	11,1	14,7	13,5	12,8
Kostanay region	1 502	1 438	1 475	1 342	1 357	1 337
	14,5	11,2	11,3	12,1	12,8	14,3
Kyzylorda region	846	812	784	756	653	635
	11,7	11,2	11,4	12,2	12,3	12,4
Mangistau region	1 027	1 060	1 131	1 128	988	1 035
	4,0	4,1	3,5	4,0	3,4	7,9
Pavlodar region	1 354	1 286	1 292	1 272	1 148	1 128
	4,8	6,5	8,7	9,1	9,1	9,0
North Kazakhstan	1 047	1 049	1 023	1 013	964	965
	10,6	11,3	11,2	11,7	9,5	14,1
Turkestan region	884	905	939	927	795	832
	5,9	6,6	5,3	6,5	9,1	11,2
East Kazakhstan	2 091	1 985	2 010	2 050	1 836	1 831
	11,5	14,9	15,1	15,5	14,9	12,9

Nur-Sultan (Astana)	4 103	4 003	4 039	3 975	3 821	3 605
	13,2	13,6	14,4	14,7	14,8	12,6
Almaty	7 970	7 716	7 124	6 997	6 646	6 561
	4,7	7,6	7,7	9,6	12,2	13,0
Shymkent	1 431	1 461	1 560	1 587	1 367	1 426
	7,5	6,6	7,2	7,4	7,3	7,1
Note - Compiled from source [18]						

To drive digital entrepreneurship in the agricultural sector, companies must build pools of digitally qualified employees. This includes identifying potential employees with relevant skills and determining how to attract and retain them, as well as recognizing talent that can be developed within the existing base and investing in developing digital skills in existing roles.

Young entrepreneurs play a key role in the digitalization of the agricultural sector. They gain unique knowledge by listening to the experience of their parents, their ancestors, and watching for missed opportunities.

Startups from small farming communities often draw inspiration and aim to help the farming communities in which their creators grew up. Nowadays, young people need sprint programs and financial support to break into the entrepreneurial market. Such programs attract investment and startups.

Conclusion.

Thus, taking into account these issues, the following general conclusions can be drawn from this study:

1. The current state of labor potential in rural areas requires an active labor market development policy. An important component of this policy is the interaction of subjects of employment policy in rural areas and measures to effectively coordinate the mechanisms of implementation of targeted programs aimed at increasing employment.

2. The effectiveness of the use of labor potential in rural areas must be addressed through the creation of alternative forms of employment and normal conditions for the activities of private farms.

3. it is necessary to improve the regulation of entrepreneurs in agriculture, to adopt programs for their professional training and retraining to protect the social status of workers. At the same time, the state needs to support the effective activity of producers engaged in entrepreneurship, specialization in entrepreneurship, and attraction of investment in it.

4. Increase the cost to rural residents of training related to the development and use of information and communication technology (ICT) and digitalization.

References

[1] Measuring Information Society Report. - Geneva: ITU, 2016. – 182 p.

[2] Vigliarolo, F. Economic phenomenology: fundamentals, principles and definition, insights into regional development / F.Vigliarolo // Entrepreneurship and Sustainability.- 2020.- 2(1).-P. 418-429. https://doi.org/10.9770/IRD.2020.2.1

[3] Kalugina, Z.I. Social Development Risks of Siberia / Z.I. Kalugina // Regional Research of Russia.– 2021.– Vol.11.- No.3.– P. 396-403. https:// doi.org/ 10.1134/S2079970521030060

[4]Trendov, N.M., Varas, S., Zeng, M. Digital Technologies in Agriculture and Rural areas briefing paper [Electronic resource].-2019.-URL: https:// www.fao.org/ 3/ ca4887en/ ca4887en.pdf (date of access: 21.12.2022).

[5] Nurzhanova, G. Features of rural youth employmentin the modern economy/ G. Nurzhanova // News of the National Academy of Sciences of the Republic of Kazakhstan. – 2019. – №1(323). – P. 257-261.

[6] Coldiretti, V. Report for the agri-food forum of Cernobbio [Electronic resource].- 2018. - URL: http://www.fao.org/e-agriculture (date of access: 04.01.2023).

[7] Проект «С дипломом – в село!» [Электронный ресурс].- 2008.- URL: https://www.enbek.kz/docs/ru (дата обращения: 19.11.2022).

[8] Nurzhanova, G., Mussirov, G. Demographic and Migration Processes of labor Potential: a Case Study the Agricultural Sector of the Republic of Kazakhstan / G. Nurzhanova, G.Mussirov // Entrepreneurship and Sustaina-bility.- 2020.- Vol. 8.- №1. – P. 656-671. http:// doi.org/10.9770/jesi.2020.8.1(45)

[9] Калиев, Г.А. Қазақстан Республикасының ауыл аумақтарының әлеуметтік дамуы / Г.А. Калиев, Ч.У. Акимбекова //Проблемы аграрного рынка.-2018.-№2.- С.27-33.

[10] Chehabeddine, M.R., Tvaronavičienė, M. Securing regional development, insights into region development / M.R. Chehabeddine, M. Tvaronavičienė // Entrepreneurship and Sustainability. - 2020.- N 2(1).- P. 430-442. https://doi.org/10.9770/IRD.2020.2.1(3)

[11] Saparova, G.K. Technical and vocational education as a factor of provision of rural territories of the Republic of Kazakhstan with specialists / G.K. Saparova // Problems of AgriMarket. – 2019. – №4. – P. 163-171.

[12] Сапарова, Г.К., Султанова Г.Т. Проблемы и перспективы развития аграрного про-

изводства в Республике Казахстан в современных условиях: монография / Г.К. Сапарова, Г.Т. Султанова.- Атырау: Атырауский университет нефти и газа им. С. Утебаева, 2020. – 218 с.

[13] Work for Human Development: Human Development Report, 2015. - Geneva: United Nations. Development. Programme.- 272 p.

[14] Tvaronavičienė, M., Razminienė, K. Towards competitive regional development through clusters: Approaches to their performance evaluation / M. Tvaronavičienė, K. Razminienė // Journal of Competitiveness.-2017.- N 9(4). - P.133-147. https://doi.org/10.7441/joc. 2017.04.09

[15] Strategic Policy Forum on Digital Entrepreneurship. Fuelling Digital Entrepreneurship in Europe: background paper [Electronic resource].- 2016.- URL: https://single-market-economy.ec.europa.eu/ industry/ strategy/advanced technologies/strategic-policy-forum-digital-entrepreneurship_en (date of access: 13.12.2022).

[16] Shuvaev, A.V., Barabanova, M.I., Lebedev, V.I., Lebedeva, I.V., Gevora, Y.I. Labor Market Modeling In The Regional Agro-Industrial Complex / A.V. Shuvaev, M.I. Barabanova, V.I. Lebedev, I.V. Lebedeva, Y.I. Gevora // Research journal of pharmaceutical biological and chemical sciences.- 2019.- Vol.10. - Issue 1.– P.1362-1367.

[17] Как пандемия повлияла на агропромышленный комплекс РК [Электронный ресурс].-2021.-URL:https://strategy2050.kz/ru/news / kak-pandemiya-povliyala-na-agropromysh-lennyy-kompleks-rk/ (дата обращения: 17.11. 2022).

[18] Статистика инновации [Электронный ресурс].- 2022.- URL: https://www.stat.gov.kz/ official/industry/ 23/statistic/8 (дата обращения: 21.12.2022).

References

[1] Measuring Information Society Report (2016). Geneva: ITU, 182.

[2] Vigliarolo, F. (2020). Economic phenomenology: fundamentals, principles and definition, insights into regional development. *Entrepreneurship and Sustainability,* 2 (1), 418-429. https://doi.org/10.9770/IRD.2020.2.1.

[3] Kalugina, Z.I. (2021). Social Development Risks of Siberia. *Regional Research of Russia,* 11(3), 396-403. https://doi.org/ 10.1134/S2079970521030060.

[4] Trendov, N.M., Varas, S., Zeng, M**.** (2019). Digital Technologies in Agriculture and Rural areas briefing paper. Available at: https://www.fao.org/3/ca4887en/ca4887en.pdf (date of access: 21.12.2022).

[5] Nurzhanova, G. (2019). Features of rural youth employment in the modern economy. *News of the National Academy of Sciences of the Republic of Kazakhstan*, 1 (323), 257-261.

[6] Coldiretti, V. (2018). Report for the agrifood forum of Cernobbio. Available at: http://www.fao.org/e-agriculture (date of access: 04.01.2023).

[7] Proekt «S diplomom – v selo!» [The project "With a diploma – to the village!"] (2008). Available at: https://www.enbek.kz/docs/ru (date of access: 19.11.2022) [in Russian].

[8] Nurzhanova, G., Mussirov, G. (2020). Demographic and Migration Processes of labor Potential: a Case Study the Agricultural Sector of the Republic of Kazakhstan. *Entrepreneurship and Sustainability,* 8 (1), 656-671. http://doi.org/ 10.9770/jesi.2020.8.1(45).

[9] Kaliev, G.A. & Akimbekova, Ch.U. (2018). Kazakhstan Respublikasynyn auyl aumaktarynyn әleumettik damuy [Social development of rural areas of the Republic of Kazakhstan]. *Problemy agrorynka - Problems of Agri Market*, (2), 27-33 [in Kazakh].

[10] Chehabeddine, M.R., Tvaronavičienė, M. (2020). Securing regional development, insights into region development. *Entrepreneurship and Sustainability*, 2 (1), 430-442. https:// doi.org/10.9770/IRD.2020.2.1(3).

[11] Saparova, G.K. (2019). Technical and vocational education as a factor of provision of rural territories of the Republic of Kazakhstan with specialists. *Problems of AgriMarket,* (4), 163-171.

[12] Saparova, G.K. & Sultanova, G.T. (2020). *Problemy i perspektivy razvitija agrarnogo proizvodstva v Respublike Kazahstan v sovremennyh uslovijah: monografija [Problems and prospects of development of agricultural production in the Republic of Kazakhstan in modern conditions: monograph].* Atyrau: Atyrauskij universitet nefti i gaza im. S. Utebaeva, *218* [in Russian].

[13] *Work for Human Development: Human Development Report* (2015). Geneva: United Nations. Development Programme, 272.

[14] Tvaronavičienė, M., Razminienė, K. (2017). Towards competitive regional development through clusters: Approaches to their performance evaluation. *Journal of Competitiveness,* 9 (4), 133-147. https://doi.org/10.7441/ joc. 2017.04.09.

[15] Strategic Policy Forum on Digital Entrepreneurship. Fuelling Digital Entrepreneurship in Europe: background paper (2016). Available at: https://single-market-economy.ec.europa.eu/industry/ strategy/ advanced-technologies/strategic-policy-forum-digital-entrepreneurship_en (date of access: 13.12.2022).

[16] Shuvaev, A.V., Barabanova, M.I., Lebedev, V.I., Lebedeva, I.V., Gevora, Y.I. (2019). Labor Market Modeling In the Regional Agro-Industrial Complex. *Research journal of pharmaceutical biological and chemical sciences*, 10 (1), 1362-1367.

[17] Kak pandemija povlijala na agropromyshlennyj kompleks RK [How the pandemic

affected the agro-industrial complex of the Republic of Kazakhstan] (2021). Available at: https://strategy2050.kz/ru/news/kak-pandemiya-povliyala-na-agropromyshlennyy-kompleks-rk/ (date of access: 17.11.2022) [in Russian].

[18] Statistika innovacii [Innovation statistics] (2022). Available at: https://www.stat.gov.kz/official/industry/ 23/statistic/8 (date of access: 21.12.2022) [in Russian].

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