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EFFICIENCY OF UTILISING THE LABOUR POTENTIAL OF RURAL AREAS IN KAZAKHSTAN

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Abstract. Labour potential is the most important driving force of the currently implemented process of transformation of the agrarian structure and an objective factor of sustainable development of agricultural production. Stabilisation of the economic system should be carried out by increasing the employment rate, increasing the population's income, reducing poverty, and improving demographic indicators, which are the most important elements of the productive potential of the village. The social and labour environment of the village, the formation and development of the labour market, and the effective use of labour potential play an important role in the economic system of the agro-industrial complex. The article's authors study rural areas' labour potential in agricultural enterprise development conditions. The authors also analyse rural territories' labour potential features from different scientific interpretations. They discussed agricultural enterprises' influence on improving labour potential efficiency. The paper presents analytical material characterising the level of development of agricultural enterprises in Kazakhstan and directions of denationalisation of property. The gross agricultural output of the Republic of Kazakhstan has been assessed. In addition, the factors that negatively impact the development of private subsidiary farms in Kazakhstan and the effective development of labour potential in rural areas have been identified. The authors present their model of chain interrelation of agricultural formations and labour potential based on the research. The authors have developed a mechanism for improving the efficiency of labour potential in rural areas.

Keywords: labour potential; agricultural formations; sustainable rural development; farms; labour resources; gross output; Kazakhstan

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1. Introduction

The state of the social and labour sphere of the village largely determines the level and quality of life in rural areas. Orientation to the model of sustainable development of the rural regions requires economic and social stability, the planned increase in the production efficiency of economic entities of the territories, income and welfare of the population of the rural regions, optimal use of natural resources (Androniceanu et al., 2021; Croitoru et al., 2021; Roldan et al., 2023; Wang & Cao, 2024).

With Kazakhstan as an independent state, conditions are being created to fill the gaps in rural reforms carried out during the Soviet era. The transition period's consequences were unfavourable for agriculture and the entire agricultural sector, as the production and social infrastructure of rural areas were destroyed. Progress in agriculture requires the continuation of agrarian reform. It should be agreed with scientists that the agricultural sector should consider both positive and negative aspects of the experience of the past historical period. It should be noted that rural employment plays a vital role in the system of market relations of the agro-industrial complex (Belloc et al., 2024).

At present, the study of problems of the period of formation and development of agrarian relations, the causes of the crisis in agricultural production, taking into account regional and sectoral characteristics, and scientific and technological progress in the relationship with changes in employment in rural areas remain in demand. The system approach to studying the causes of the agrarian crisis in Kazakhstan shows that despite structural transformations at different stages of the market economy's formation, the food problem in our country still needs to be solved. Therefore, developing market relations in rural areas and increasing the competitiveness of agricultural producers is an integral part of the revival of the rural regions based on improving the efficiency of labour potential, restoring the political, social and economic relations of the agro-industrial complex both within the country and abroad.

Further development of private farms in the Republic of Kazakhstan contributes to increased agricultural labour productivity. Still, the ongoing integration processes in the farming sector should be considered (Nurzhanova et al., 2021). Restoration of economic relations in the conditions of transition to market is associated with the formation of various forms of organisational structures of management, transfer of enterprises and organisations in the system of agro-industrial complex to complete self-sufficiency and self-financing occurred in Kazakhstan in 1988 in regional farms.

As a result of economic reforms in the agricultural sector of the country in the early 1990s, firstly, multi-sectoral agricultural production was formed; economic entities were given complete independence and allowed to carry out their activities and produce their products, which weakened the centralised management system; Secondly, rapid structural changes, growing inter-sectoral inequality in economic relations between agricultural, processing and service enterprises led to the decline of the co-operative sector and the destruction of the production and social infrastructure of rural areas (Urekeshova, 2023).

At the end of 1990, the state adopted the necessary laws that allowed structural reforms in the economy and cancelled rules contrary to the laws of the market. The main objectives of privatisation were the following (Abylkhozhin, 1991):

- formation of enterprises based on the use of various forms of ownership;
- increasing the efficiency of enterprises;
- formation of a competitive environment;
- attraction of investments;
- ensuring financial sustainability.

2. Literature review and hypotheses' development

One of the most essential elements of the socio-economic potential of rural areas is its labour resources. The level of effective use of labour resources directly affects other types of rural potential. The development of entrepreneurship in rural areas is becoming the most critical issue (Tireuov et al., 2020; Nurzhanova & Smagulova, 2023).

Various forms of entrepreneurship are involved in developing labour potential in rural areas. For example, agricultural enterprises, farms, cooperatives, households, social enterprises, paid public works, and much more (Zhenshan et al. 2023).

If the rural population were employed at these enterprises, it would be one of the main ways to use the labour potential effectively. Currently, the labour incomes of the rural population increase every year, but inequality is observed in the regions (Kazhyken & Satpayeva, 2020).

Since there are significant differences between the conditions and quality of life of the urban and rural populations, the level of labour potential is a well-known problem in economic policy.

The formation of the market economy mechanism in the country led to a decline in the population's living standards and purchasing power. It negatively impacted the labour force's number, structure and quality in the labour market (Myssirov et al., 2020).

Agricultural production, depending on its specifics (seasonality of production, interdisciplinary nature, extensive use of natural factors, interruption of the labour process, high level of manual labour, the distance between regions, etc.), affects the formation of labour resources. The common disadvantage of these features is the need for more use of labour potential in rural areas (Beisenova et al., 2019). According to official statistics, 42% of the country's population lives in rural areas, and about one-third of them have incomes below the subsistence minimum. This situation reinforces the classification of the country's population by living standards, has a negative impact on the socio-political situation in society, and affects the country's development indicators and investment reputation (Kydyrbaeva, 2022). It is obvious that small and medium-sized agricultural enterprises and farms will not be able to overcome technical backwardness on their own and cannot organise the export of many Kazakhstani products (Mckay & Moore, 2023).

The initial approach to the study of labour potential was characterised by the following approach - to consider the concept of "labour resources" as a unit of quantitative and qualitative criteria, considering the level of knowledge, skills and qualifications. According to Pashkevich (2021), labour potential is a labour force combining quantitative and qualitative indicators. Labour potential is a system of indicators that characterises the population and employment, labour skills and content, technology level and labour productivity. Some authors began to include in the number of socio-economic criteria a set of factors that characterise the totality of socio-economic and organisational and managerial capabilities that allow to work. The concept of "labour potential" has long been used by planners and statisticians, which implies labour resources, working conditions, population and employment, education, and complex technical means (Ostermann et al., 2020). Labour potential is formed at different levels vertically and horizontally. Vertically - the interconnected potential of society as a whole, enterprise, and individual employees, and horizontally - the potential of districts, regions, and economic territories (Nurpeisova et al., 2020). At the same time, the problem will be sectoral since different sectors of the economy have their peculiarities of formation and use of labour potential (Arora & Lauzon, 2019). Formation and use of labour potential for agricultural production is an issue that requires a separate study (Davidov & Pnina, 2022). The industry's peculiarities depend primarily on the structure, formation and use of labour potential. Agriculture operates on a regional and sectoral basis. Therefore, its development depends mainly on the level of utilisation of local opportunities, including the labour potential of any region (Wierzbicka, 2021). At present, there needs to be more studies in Kazakhstan that would consider these problems, taking into account specific territorial and geopolitical peculiarities of the development of rural areas' labour potential, increasing labour productivity.

3. Research objective and methodology

Domestic and foreign researchers have considered theoretical and methodological foundations of structural transformation in the agricultural sector. However, researchers have not comprehensively considered the impact of structural transformation on the labor potential of rural areas. Therefore, the research objective of this paper is to identify the impact of agricultural formations on the effectiveness of increasing the labour potential of rural regions. In the course of the study, we applied abstract-logistic, economic-mathematical

methods with the use of linear programming, statistical, and factor methods affecting the development of labour potential of the rural population, including peasant farms, as well as personal subsidiary farms.

4. Research Results

Formation and use of labour potential in agriculture depend on the specifics of this industry. The category "labour resources" in rural areas should be considered only in the regional context, i.e., about the country's rural areas. The issues of formation and use of labour potential should be considered as an integral part of the agrarian sector of the economy, i.e. a set of industries, enterprises, organisations and institutions included in the agricultural production complex, which meets the needs of the population in food resources (Tleubayeva et al., 2023). Effective formation of labour potential is ensured by its balance, which means the balance of structural development of production potential in rural areas, creation of normal conditions for stimulation of commercial interests of the population, and access to financial resources (Myssirov et al., 2023). Privatisation as a political and economic process included efficiency, distribution and stability. These results are divided into short- and long-term results, as shown in Table 1.

Table 1. Directions of property denationalisation

Privatisation	Short-term period	Long-term period
Efficiency	Static efficiency	Dynamic efficiency
Divide and distribute	Redistribution of income	Distribution of national wealth with division
Stability	Adaptation to periodic deviations	Structural adjustment

Source: Compiled by the authors

In the process of denationalisation and privatisation, cooperative ownership was sharply reduced. Accelerated reforms associated with the forced bankruptcy of cooperatives and the creation of partnerships on their basis did not lead to an increase in the effective activity of cooperatives. The solution to this problem remains urgent since cooperation is necessary for developing farms (peasant farms) in market conditions.

According to the data in Table 2, in 2022 compared to 2019, the gross output of agricultural products (services) increased by 84 %. of which crop production increased by almost 2.6 times. Also, the gross output of livestock production by 57 % and services in agriculture by 1%. The growth of livestock production is associated with successfully implementing crediting programs in livestock production.

Table 2. In current prices, the gross output of agricultural products (services) is mln. tenge

Indicator	2019	2020	2021	2022	In 2022 compared to 2019	
					growth, %	change (+;-)
Gross output of agricultural products (services), including:	5 151 163,0	6 334 668,8	7 515 433,5	9 481 179,8	84	4 330 016,8
Gross crop production	2 817 660,6	3 687 310,3	4 387 236,5	5 808 259,8	2.6 fold	2 990 599,2
Gross livestock production	2 319 496,7	2 637 460,7	3 116 973,5	3 658 757,6	57	1 339 260,9
Agricultural services	14 005,7	9 897,9	11 223,4	14 162,5	1,0	156,8

Source: Calculated on the basis of the data Agriculture, forestry and fishery in the Republic of Kazakhstan 2020 -2022: stat. coll.

<https://stat.gov.kz/ru/industries/business-statistics/stat-forrest-village-hunt-fish/>

The development of livestock and crop production plays an important role in increasing the efficiency of labour potential of rural areas. Despite the growth of livestock production, there are a number of problems in the development of livestock farming, such as insufficient provision of fodder base, insufficiency of sown

areas under fodder and forage crops, lack of working capital of fodder enterprises, irrational use of pasture lands (Saparova & Nurzhanova, 2021). There are a number of negative signs in crop production: low level of technical and technological equipment, irrational use of agricultural land, and non-compliance with the recommended scientifically-based crop rotations. (Strategic plan of the Ministry of Agriculture of the Republic of Kazakhstan for 2020-2024). Today, peasant (farmer) farms and LPH have different volumes, marketability, and income characteristics, depending on many objective and subjective factors. In addition, several factors have a negative impact on the development of private subsidiary farms in Kazakhstan (Table 3).

Table 3. Factors hindering the development of private subsidiary farms in Kazakhstan

Values by importance of factors	Specific weight, percent
Product sales	26,4
Feed stock (disadvantages and high cost)	21,2
Hard manual labor	13,2
Lack of support from the state	11,6
Lack of support from agricultural enterprises	10,0
Area of land plots	7,6
Time deficit for private household occupation	5,6
Income from other activities	4,4
Total	100

Source: Compiled from Nurzhanova et al. (2021)

Considering the factors that hinder the development of private subsidiary farms in the Republic of Kazakhstan in terms of the importance of factors, first of all, it was found that there is a problem with the sale of goods made at home. Recently, due to the large number of agricultural processing enterprises in the country, more meat and dairy products are on the market (Igaliyeva & Niyazbekova, 2020). As Table 4 shows, the number of peasant (farm) households in 2022 compared to 2012 increased by 26%, state enterprises - by 2.9%, and non-state enterprises - by 6.3%. Households of the population decreased - by 37%.

Table 4. Number of operating agricultural formations for 2012-2022 of the Republic of Kazakhstan

Years	Peasant (farmer) farms	Households of population, thousand units	State-owned enterprises	Non-state enterprises
2012	170193	2248	34	5408
2013	170285	2024	30	5422
2014	164856	1902	28	5323
2015	150942	1845	37	5234
2016	152697	1723	32	5321
2017	183533	1609	30	5543
2018	177576	1498	33	5461
2019	187527	1404	33	5478
2020	198268	1300	34	5505
2021	213457	1345	35	5712
2022	216 715	1416	35	5748
2022 to 2012, %	27	-37	2,9	6,3

Source: Compiled by the authors according to the source (Agriculture, forestry and fishery in the Republic of Kazakhstan 2012-2022)

The most priority type of small business in agriculture is peasant (farmer) farms, the number of which is steadily growing. At the same time, it should be noted that developing peasant (private) farms affects the reduction of registered unemployment in rural areas (Nurzhanova & Saparova, 2023). Table 5 shows that the share of the number of employed peasant (farm) farms to the number of SMEs (Small and Medium Enterprises) in 2022 is above 50 percent in Almaty and Zhambyl regions. In Turkestan region - 43% and Kyzylorda region - 41%, as in the southern region of the republic farms are in better natural and climatic conditions compared to farms in other regions.

Table 5. Number of Employed in SMEs (Small and Medium Enterprises) and Peasant (Farmer) Farms by Region in 2022, persons

Region name	Number of employed SMEs	Number of employed in peasant (farm) holdings	Ratio of the share of employed peasant (farm) households to the number of SMEs, in %
Republic of Kazakhstan	1 818 325	300 505	16,5
Akmola	66 956	9 394	14,0
Aktobe	82 778	10 615	12,8
Almaty	105 668	64 282	60,8
Atyrau	75 752	4 738	6,3
West Kazakhstan	43 919	11 932	27,2
Zhambyl	41 080	24 443	59,5
Karaganda	138 761	15 135	10,9
Kostanay	83 788	11 610	13,9
Kyzylorda	36 744	15 051	41
Mangistau	62 085	3 388	5,5
Pavlodar	67 683	7 707	11,4
North Kazakhstan	60 008	8 320	13,9
Turkestan	57 766	82 016	42
East Kazakhstan	103 372	26 457	25,6
Astana city	258 764	526	0,2
Almaty city	438 399	1 207	0,3
Shymkent city	94 802	3 684	3,9

Source: Calculated by the authors according to the source Agriculture, forestry and Fisheries in the Republic of Kazakhstan (2020): stat. collection <https://stat.gov.kz/official/industry/14/statistic/6>

The specific share of peasant (farmer) farms in the regional distribution falls on Almaty - 37.2%, Turkestan - 48.8%, Zhambyl - 25.9, East Kazakhstan - 18.3%, Pavlodar - 7.4%, West Kazakhstan - 17.8%. This is due to the availability of labor resources and geographical location (Table 6).

Table 6. Share of peasant (farmer) farms in the regional breakdown, units

Region name	2019		2022		Ratio of the share of peasant (farmer) farms to the volume of SMEs in 2022	Ratio of the share of peasant (farmer) farms 2022 and 2019, in %
	registered economic entities (SMEs), total	peasant (farm) holdings	registered business entities (SMEs), total	peasant (farm) holdings		
Republic of Kazakhstan	1 145 994	187 527	1 357 311	216 715	16	15,6
Akmola	41 719	4 134	46 564	6 068	13	46,8
Aktobe	50 209	5 141	61 797	7 634	12,4	48,5
Almaty	109 877	44 801	123 181	45 666	37,1	1,9
Atyrau	42 897	2 249	50 239	3 061	6,1	36,1
West Kazakhstan	37 111	5 450	43 035	7 642	17,8	40,2
Zhambyl	58 692	16 064	69 338	17 928	25,9	11,6
Karaganda	79 276	7 701	90 196	11 307	12,5	46,8
Kostanay	48 237	5 108	52 495	6 266	11,9	22,7
Kyzylorda	37 450	5 063	48 657	10 940	22,5	16
Mangistau	47 015	1 677	52 900	2 641	5	57,4
Pavlodar	41 311	3 211	45 809	3 407	7,4	6,1
North Kazakhstan	27 587	3 163	30 331	4 444	14,7	40,5
Turkestan	177 411	68 633	140 605	68 592	48,8	- 0,1
East Kazakhstan	79 966	14 501	90 453	16 592	18,3	14,4
Astana city	97 251	108	144 769	357	0,2	230
Almaty city	169 985	523	197 066	923	0,5	76,5
Shymkent city	-	-	69 876	3 247	4,6	-

Source: Calculated by the authors according to the source Agriculture, Forestry and Fisheries in the Republic of Kazakhstan (2020): stat. collection <https://stat.gov.kz/official/industry/14/statistic/6>

Such conditions in peasant (private) farms with high profitability do not indicate that they are sufficiently competitive. Along with the positive sides, there are also a number of negative features of farms: low material

and technical base, insufficient level of financing and difficulties in obtaining it, unequal access to receiving state support and lack of support of the farming sector by the state (Saparova & Sultanova, 2020, p. 101).

Agricultural cooperatives are a rather new form of agro-formation. In the republic as a whole, according to the results of the second quarter of 2022, there were 3030 agricultural cooperatives with the number of employees 7900 people. Agricultural cooperatives include 603 legal entities, of which 498 are business partnerships, one joint-stock company, 104 legal entities with other organisational and legal forms. Also. 22800 individual entrepreneurs and peasant (farm) households, 27400 households (Table 7). At the end of June 2022, the number of cattle in agricultural cooperatives amounted to 132.8 thousand heads, of which 65.4 thousand heads of beef cows, 152.3 thousand heads of sheep and 10.9 thousand heads of horses.

Table 7. Number of active agricultural cooperatives and number of employees

Indicator	2021	2022 (end of June)
Republic of Kazakhstan	2906	3030
Of which:		
Households	25273	27375
Individual entrepreneurs and peasant (farm) households	24062	22800
Legal entities	576	603
Number of employees:		
List number of employees of the agricultural cooperative	7580	7825
Number of employees of the agricultural cooperative employed on a part-time basis (with other organisations)	95	81
Number of employees of the agricultural cooperative performing work under civil-law contracts (CLC)	1745	516

Source: Compiled from source The number of agricultural cooperatives has exceeded 3000

<https://inbusiness.kz/ru/news/kolichestvo-selskohozyajstvennyh>

Agricultural cooperatives are seen as the most effective tool for resolving issues related to the large share of imported food products, low purchase prices of agricultural products, limited domestic processing of raw materials, underutilisation of processing capacity and a general lack of quality and competitiveness of domestic production, constraining their development (Nuantri et al., 2023; Ofori et al., 2024).

These problems include, among others: 1) lack of confidence of farmers and rural population in the idea of cooperation; 2) insufficient work aimed at explaining the advantages of cooperation and mechanisms of cooperatives' functioning; 3) low level of professional training of management staff and lack of specialists; 4) violation of basic principles of cooperation (voluntariness, democracy, the principle of "one member - one vote", etc.).

The emergence of new technologies in the agro-industrial complex will push for more efficient development of new types of agricultural machinery and equipment. State support of demand for agricultural machinery realises preferential financing of buyers (Shen et al., 2023).

Most of the state budget funds - 59% or 1,183 billion tenge were provided in the form of financial support to the subjects of the agro-industrial complex. 23% or 461 billion tenge are directed to direct subsidies for livestock in the form of development of breeding livestock, increasing productivity and quality of livestock products. 18% or 362 billion tenge - on direct subsidies for crop production, cheapening the cost of pesticides, bioagents (entomophages), fertilisers (except organic), seeds, perennial plantings, etc., as shown in Table 8.

Table 8. Expenditures aimed at supporting the agro-industrial complex in the form of subsidies and loans by sector billion tenge

Years	Plant production	Livestock	Financial support
2018	69,6	74,0	189,7
2019	62,1	76,7	163,9
2020	65,4	115,7	233,0
2021	86,4	101,8	334,9
2022 (plan)	79,0	93,1	261,6
Total, bln. tenge	362	461	1 183
Share, in %	18	23	59

Source: Calculated on the basis of the data Agriculture, forestry and fishery in the Republic of Kazakhstan 2020 -2022: stat. coll. <https://stat.gov.kz/ru/industries/business-statistics/stat-forrest-village-hunt-fish/>

Thus, the strength of the effective use of labour potential in rural areas in the conditions of technological development is the impact of sustainable development of agricultural formations, providing them with a material and technical base a sufficient level of financing.

5. Model of chain relationship between agricultural formations and labor potential

Figure 1 presents the author's model of chain relationship between agricultural formations and labor potential on the basis of our research. As can be seen from the figure, agricultural formation and labor potential are closely interrelated with such instruments as: job creation, use of cultivated areas by agricultural producers, gross agricultural output, formation of incentives to work in the agricultural sector, subsidies and loans, renewal of agricultural machinery, microcrediting of rural settlements, digital literacy, training of rural youth to the professions of the future, development of information, consulting services.

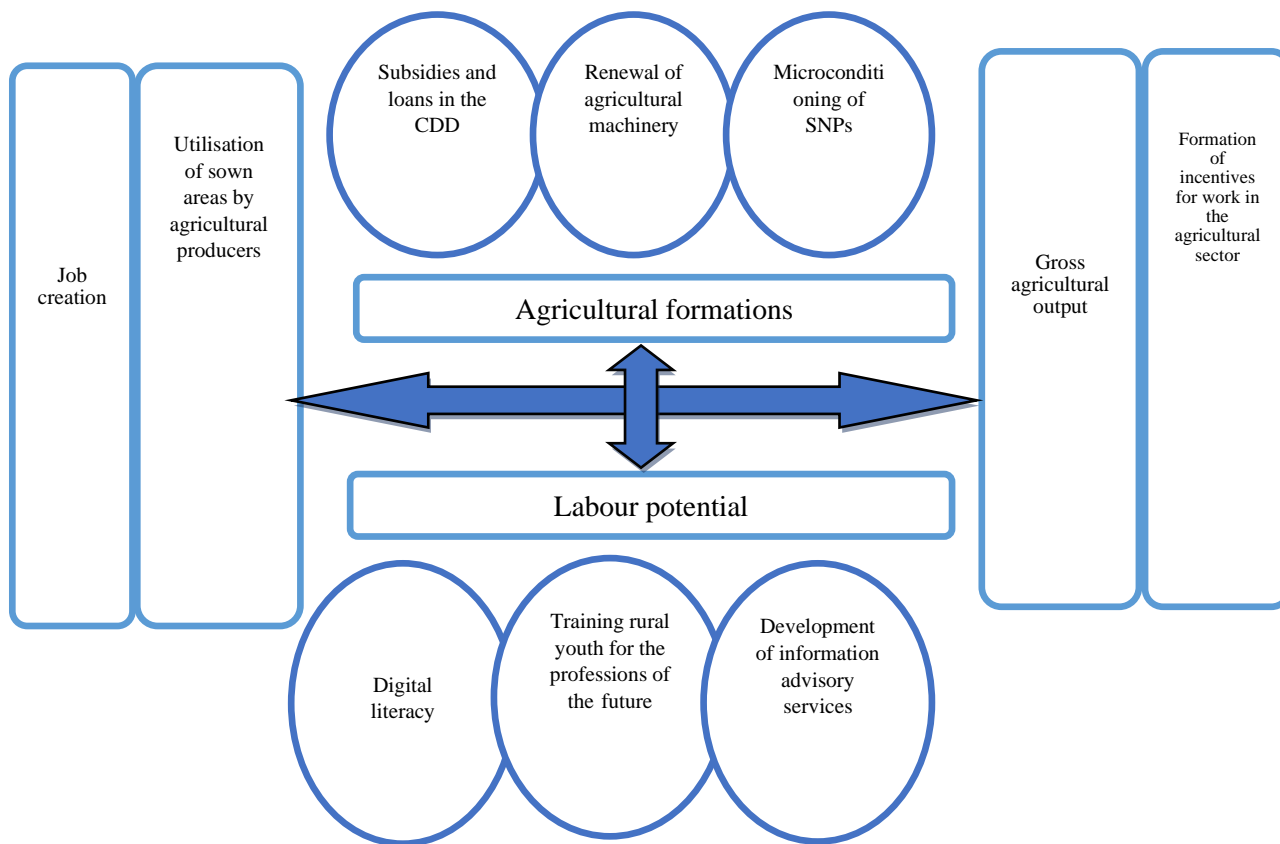


Figure 1. Chain relationship model of agricultural formations and labor potential

Source: Compiled by the authors

And for more effective development of this direction, it is necessary to attract measures of state support for effective use of labor potential, for their training.

For this purpose:

- regions by agricultural growth of the Republic of Kazakhstan are grouped and researched;
- the use of sown areas in dynamics was evaluated;
- the production of gross agricultural output of the Republic of Kazakhstan was analysed;
- favourable conditions influencing the development of private subsidiary farms were revealed;
- the ratio of the share of the number of employed peasant (farm) farms to the number of SMEs and the specific weight of peasant (farm) farms in the regional context was calculated.
- It analysed the utilisation of state budget funds allocated to support the agro-industrial complex in the form of subsidies and loans, the volume of financing, and the number of loans issued.

6. Mechanism for improving the efficiency of labour potential of rural territories

Based on the implementation of such a system and a systematic approach to management with the help of its mechanisms, the process of training qualified labour force in agriculture is improved, a new level of training is achieved through quality assurance, and the available human, logistical, information and financial potential is effectively used. Based on this, we present the author's mechanism for improving the efficiency of labour potential of rural areas; this mechanism can be used by public authorities (Figure 2).

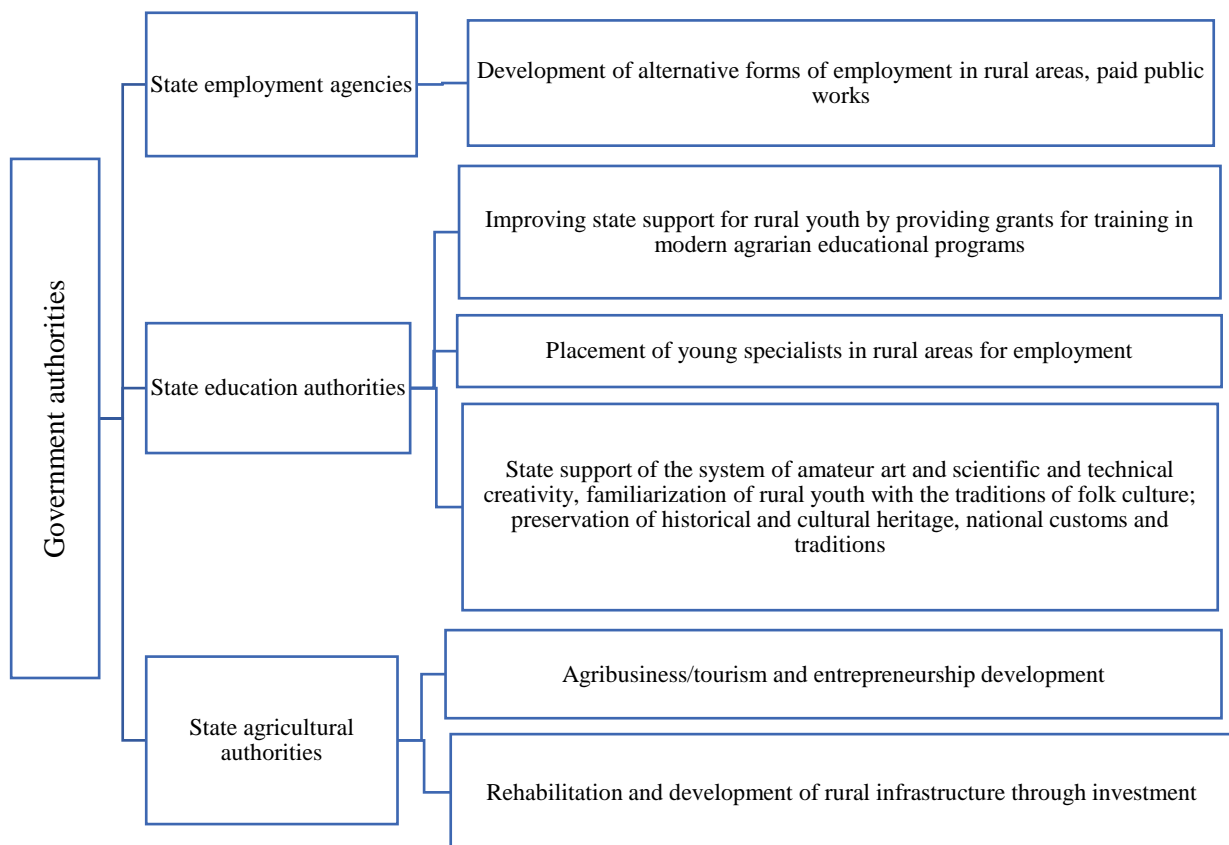


Figure 2. Mechanism for improving the efficiency of labour potential of rural territories

Source: Compiled by the authors

Thus, as can be seen from Figure 2, in regulating labour potential in rural areas, it is important to improve the efficiency of employment agencies. 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 people in rural areas. However, many smallholder farmers in developing countries remain isolated from digital technology due to their lack of skills (Zabara et al., 2020).

To create a "digital agriculture ecosystem", an enabling environment for farmers and agricultural entrepreneurs to innovate is needed (Kurmanova et al., 2022). Funding and cooperation on digital agriculture projects and start-ups are already growing and are beginning to attract international investors and media attention.

Conclusions

Thus, taking into account the study, the following general conclusions can be drawn:

1. The current state of labour potential in rural areas requires an active policy of labour market development. 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 target programs aimed at increasing employment.
2. The issues of efficient use of labour potential in rural areas should be addressed by creating alternative forms of employment and normal conditions for the activities of private farms.
3. It is necessary to improve the regulations of the work of entrepreneurs in agriculture and 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, specialisation in entrepreneurship, and attraction of investments in it.
4. Increase training costs for rural residents related to the development and use of ICT and digitalisation.

The solution to the problem of effective use of labour potential depends on many factors, including the revision of mechanisms of state support not only for large and medium-sized agricultural enterprises but also for small businesses, including cooperatives of owners, private subsidiary farms, improvement of not only the production sphere but also services provided in the process of bringing products to the consumer, increasing competitiveness based on innovative technologies, which is naturally based on knowledge and efficient and effective management of agricultural enterprises.

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