

ARTIGO <https://doi.org/10.22481/praxisedu.v15i34.5802>**LABOR PRODUCTIVITY AS A PRODUCTION EFFICIENCY FACTOR**

PRODUCTIVIDAD LABORAL COMO FACTOR DE EFICIENCIA DE PRODUCCIÓN

PRODUTIVIDADE DO TRABALHO COMO FATOR DE EFICIÊNCIA DA PRODUÇÃO

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Resumo: O objetivo desta investigação é estudar o fator de eficiência e a produtividade do trabalho. Em grande medida, o nível de produtividade do trabalho aumentou devido à intensificação da produção. Ao mesmo tempo, segundo Rosstat, na agricultura, silvicultura e pesca, existem apenas 8% dos empregos de alta eficiência. Assim, o fator de intensificação da produção é usado de forma insignificante. É óbvio que é necessário um componente inovador do crescimento da produtividade do trabalho, por um lado, e a criação de novos empregos nas áreas rurais para os recursos liberados, por outro. Aqui é necessário determinar os principais fatores que afetam a produtividade nas condições modernas e justificar propostas para melhorá-la.

Palavras-chave: Produtividade do trabalho; Salários; Intensificação da produção; Apoio estatal; Empregos de alta eficiência.

Abstract: Of the goal of this investigation is to study the efficiency factor and labor productivity. To a large extent, the level of labor productivity grew due to the intensification of production. At the same time, according to Rosstat, in agriculture, forestry and fisheries there are only 8% of high-efficient jobs. Thus, the factor of production intensification is used insignificantly. It is obvious that there is a need for an innovative component of labor productivity growth on the one hand, and the creation of new jobs in rural areas for the released labor resources, on the other hand. Here it is necessary to determine the main factors affecting productivity in modern conditions, and to justify proposals to improve it.

Keywords: Labor productivity; Wages; Production intensification; State support; High-efficient jobs.

Resumen: El objetivo de esta investigación es estudiar el factor de eficiencia y la productividad laboral. En gran medida, el nivel de productividad laboral creció debido a la intensificación de la producción. Al mismo tiempo, según Rosstat, en agricultura, silvicultura y pesca solo hay un 8% de empleos altamente eficientes. Por lo tanto, el factor de intensificación de la producción se utiliza de manera insignificante. Es obvio que hay una necesidad de un componente innovador del crecimiento de la productividad laboral, por un lado, y la creación de nuevos empleos en las zonas rurales para los recursos laborales liberados, por otro lado. Aquí es necesario determinar los principales factores que afectan la productividad en las condiciones modernas, y justificar las propuestas para mejorarla.

Palabras clave: Productividad laboral; Salarios; Intensificación de la producción; Apoyo estatal; Empleos de alta eficiencia.

Introduction

As you know, the level of wages in agriculture in Russia is one of the lowest, and this is despite the increase in the cost of gross agricultural output, the use of new equipment and technologies (Ashmarov, 2017; Minakova, 2017; Gnatyuk & Pekert, 2018; Olkhovskiy, 2018; Narkevich & Narkevich, 2018; Novikov, 2017; Schwarzkopf, 2018; Moiseenko, 2017). Traditionally, labor productivity is influenced by such components as the amount of gross output, the number of agricultural workers, the level of using machinery and technology, the intensity of production, the scale of production, the level of its concentration and specialization, and many others. The category of labor productivity is multidimensional and covers all components of economic activity of any economic entity. In this regard, it is important to know

the impact of what factors, in modern conditions, the productivity is most affected with and how it affects the level of wages (Bogatov et al., 2017; Shcherbinina, 2017; Moiseenko, 2017; Komarova, 2018; Kobets, 2017; Kupryushin & Chernyatina, 2017; Narkevich, 2018; Vernigor, 2017).

Goals And Objectives Of The Study

The problem of increasing productivity in agriculture is one of the key. The solution of this problem is the basis for a motivated increase in wages of employees. In this regard, the goal of this study is to determine the factors affecting productivity in modern conditions. To achieve this goal, the following objectives were solved:

- to give a current assessment of productivity;
- to determine the factors affecting labor productivity in modern conditions;
- to justify offers to improve labor productivity.

Research Results

Currently, the main part of agricultural products are produced by large trade agricultural organizations. Their share in the structure of gross output is 55.1%, although 18 years ago it was only 45.2%. During this time, the state has taken the path to the development of large trade agricultural production, as it is able to provide food security of the country, the population with jobs, to provide mass production at the lowest cost.

Table 1: Structure of agricultural products by categories of farms (in actual prices, % of total) (Russia in numbers, 2018)

	Years				
	1990	2000	2005	2015	2018
Farms of all categories	100	100	100	100	100
including: agricultural organizations	73,7	45,2	44,6	53,9	55,1
Households	26,3	51,6	49,3	34,6	33,0
Peasant farms	3,2	6,1	11,5	11,9

As you know, agriculture is currently a dynamically developing industry. Good dynamics of gross production of almost all types of agricultural products, the use of modern

equipment and technologies should contribute to an increase in wages, at least at a rate that gross output increases.

Agriculture in Russia shows not only an increase in gross output, but also investment and exports. All these are the results of the agrarian and food policy pursued by the state. For 2000-2017, the gross harvest of grain crops increased more than 2 times, sugar beet 3.7 times, sunflower 2.7 times. Agriculture of Russia demonstrates not only the increase in amount. The amount of pork production increased almost 2 times, and a significant increase is for the beginning of the PNP “Development of agriculture”. This project really gave impetus to the qualitative development of agriculture and related industries. Over 18 years of agrarian reforms, gross agricultural output increased by 6.8 times, the amount of investments by 11.9 times, the number of profitable enterprises by 23.5%, the net profit by 6 times. It would seem good results. These are certainly positive developments, but the agricultural economy could grow faster if we consider that more than 100 million hectares of agricultural land were eliminated from the turnover according to the all-Russian agricultural census, and the level of wages in agriculture leaves much to be desired.

Table 2: Main economic indicators of agricultural production in Russia in 2000-2017 (Russia in numbers, 2018)

№	Indicators	Years				2017	
		2000	2005	2016	2017	to 2000 (+;-)	to 2000, %
1	Gross output in current prices total, billion rubles	742,4	1380,9	5119,2	5119,9	4377,5	by 6,8 times
2	Area of arable land, thousand hectares	84670	75837	79312	80048	-4622	94,5
3	Investments in fixed assets, billion rubles	34,8	142,3	611,2	412,5	377,7	by 11,9 times
4	Invested in 1 ha of arable land, rubles	411	1877	7700	5156	4745	by 12,5 times
Gross yield, million tons							
5	Grain (in weight after completion)	65,4	77,8	120,7	135,4	70	more than 2 times
6	Sugar beet	14,1	21,3	51,4	51,9	37,8	by 3,7 times
7	Sunflower	3,9	6,5	11,0	10,5	6,6	by 2,7 times
Livestock production							
8	Milk, million tons	32,3	31,1	30,8	31,2	-0,1	99,4

9	Cattle, million tons	1,9	1,8	1,6	1,6	-0,3	84,2
10	Pigs, million tons	1,6	1,6	3,4	3,5	1,9	by 2,1 times
11	Average monthly salary, rubles	985	3646	22915	25671	24686	by 26,1 times
12	Share of profitable farms, %	No	58,8	78,8	82,3	23,5 (κ 2005)	by 1,4 times (to 2005)
13	Profit - total, million rubles (netted)		30764	239444	186217	155453 (κ 2005)	by 6 times (to 2005)

If 100 million hectares of agricultural land were cultivated, the amount of gross output could be about 9-11 trillion rubles, instead of 5.5 trillion rubles, respectively, and the level of exports would be about 1.5-2 times higher.

The result of the conducted agrarian and food policy was an increase in the number of profitable organizations, the net financial result increased, which is associated with the strengthening of technological discipline and the renewal of material and technical resources, the selection of qualified personnel at all levels of agro-industrial production.

Despite the dynamic growth of the main production indicators, the level of wages in agriculture remains one of the lowest in the economy, thus not providing a decent purchasing power of the villagers, and not helping to attract young professionals to the village.

The main source of income, both in urban and rural areas is cash income received, usually in the form of wages. In rural areas, up to 88% of income is generated from cash receipts, while in the city this figure is 90.4%. Over the past 18 years, the level of wages of workers in rural and urban areas has differed significantly.

Even in modern conditions, wages are not the main motive for working in rural areas. It is at least 35% less than in the city, without performing any motivating function, and not fully fulfilling the social function. So in 2000, the level of wages in rural areas was 44.3% of the same indicator in the city. And only with the beginning of the PNP "Development of agriculture" and the implementation of the State Program, the situation has moved forward. In 2008, the ratio of rural to urban wages was 49%, and in 2017 it was 65.5%. On this basis, it can be argued that the purchasing power of the rural population is 35% lower than that of the urban population. Villagers receiving lower wages are disadvantaged in their rights to access the benefits that urban residents can afford, and not because they do not have them in the village, but because their level of income is significantly less than that of urban residents. All this forms

a stable negative attitude to life in rural areas and to the people living there. And this is despite the rapid growth of agricultural production, investment, introduction of new technologies, faster growth of labor productivity, etc.

Table 3: The ratio of wages in agriculture to wages on average in the economy

Years	In the economy	In the agriculture	Ratio , %	Years	In the economy	In the agriculture	Ratio , %
2000	2223	985	44,3	2010	20952	10668	50,9
2001	3240	1435	44,3	2011	23369	12464	53,3
2002	4360	1876	43,0	2012	26629	14129	53,1
2003	5499	2340	42,6	2013	29792	15724	52,8
2004	6740	3015	44,7	2014	32495	17724	54,5
2005	8555	3646	42,6	2015	34030	19721	58,0
2006	10634	4569	43,0	2016	36709	21755	59,3
2007	13593	6144	45,2	2017	39167	25671	65,5
2008	17290	8475	49,0	2018	43445	28185	64,9
2009	18638	9619	51,6				

Comparing the growth rates of labor productivity and the average monthly wage, we can say that the producer currently has reserves to increase wages through the introduction of new technologies and modern equipment. And this is despite the fact that in 2017, according to Rosstat, the growth of labor productivity in agriculture amounted to 103.5%, while the economy is only 99.7%! The growth rate of gross agricultural output for the same year was 102.7%. It would seem that the growth rate of labor productivity exceeds the growth rate of gross output, but this excess is achieved, including by reducing the number of workers in agriculture. In 2005-2016, labor productivity increased by almost 30% due to a decrease in the number of workers employed in agriculture.

In the course of the agrarian and food policy, agricultural enterprises deepened specialization and concentration of production, began to apply new technologies, which contributed to a decrease in the average annual number of workers employed in agriculture by 28.2%, an increase in the accounting value of fixed assets by 3.3 times. Gross production has increased more than 4 times. In the course of agrarian reforms, agricultural producers acquired new high-tech, powerful agricultural machinery and technologies that were able to reduce the consumption of fuels and lubricants, reduced the impact of the human factor. A significant increase in the intensity of production was achieved by reducing costs through the use of high-performance wide-ranging equipment in crop production and new technologies in animal

husbandry. As a result, the volume of energy capacity in agricultural organizations decreased by 41.2%.

Table 4: Dynamics of labor productivity, capital and energy intensity and number of employees in Russia in 2005-2016 (Russia in numbers, 2018)

№	Indicators	Years			2016	
		2005	2010	2016	to 2005 +;-	to 2005, %
1.	Average annual number of workers employed in agriculture, thousand people.	7489	6622	5374	-2115	71,8
2.	Accounting value of fixed assets, mln. rubles	1440084	2859877	4758488	3318404	by 3,3 times
3.	Gross output-total, billion rubles (in current prices)	1380,9	2587,8	5505,7	4124,8	by 4 times
4.	Energy capacity, total, million HP	156,9	109,9	92,3	-64,6	58,8
4.1.	per 1 employee, HP	58,6	66,9	77,1	18,5	131,6
4.2.	per 100 hectares of acreage, HP	270	227	200	-70	74,1
5.	Capital intensity, rubles	192293	431875	885466	693173	by 4,6 times
6.	Labor productivity, rubles	184390	390788	1024507	840117	by 5,5 times

This led to an increase in energy capacity per 1 employee by 31.6%, while the capital intensity increased by 4.6 times. On the one hand, this is explained by the disparity of prices for the purchased equipment, on the other hand, a significant part of the purchased equipment was imported, more expensive than domestic. All of the above had a positive impact on labor productivity, which increased by 5.5 times, including by increasing the amount of gross output by 4 times, and by about 30% due to a decrease in the number of employees. In 2016, labor productivity in agricultural organizations in Russia was more than 1 million rubles, but in some regions it exceeded 2, and sometimes 4 million rubles.

As it can be seen from the above data, labor productivity has increased in value terms, which may indicate the effective use of labor resources in agricultural organizations, the creation of high-efficient jobs. But is it really so?

The Russian economy has more than 17 million high-efficient jobs. The leading positions are occupied by: manufacturing, public administration and military support security; social insurance and trade. It is obvious that a certain part of high productivity in public administration is provided by increasing budget financing, and in manufacturing and trade by disparity in relations with agricultural production.

In agricultural production, fish farming and forestry in 2017 there were only 438 thousand jobs, which is about 8% of all jobs in this sector of the economy. Thus, there are not so many high-efficient jobs in agriculture, and this is despite the state support, the use of new equipment and technologies.

All of the above points to the insufficiently high growth rates of labor productivity and production intensification compared to the growth rates of cost and prices of finished products. And this is despite the fact that agriculture is a subsidized sector of the economy, an investment-attractive industry that can consistently make a profit.

Table 5: Number of high-efficient jobs by type of economic activity for 2013-2016, thousand units (Russia in numbers, 2018)

	Years				
	2013	2014	2015	2016	2017
The Russian Federation					
Total	17492,8	18280,9	16782,4	15983,3	17 114,0
Agriculture, hunting and forestry, fishing, fish farming	367,3	401,2	350,4	367,3	438,8
Extraction of minerals	878,1	852,1	854,1	852,1	875,0

Manufacturing activity	3670,8	3722,9	3333,9	3214,0	3 533,9
Production and distribution of electricity, gas and water	910,1	998,6	926,8	891,5	882,5
Construction	1046,3	1028,0	871,9	736,3	838,2
Wholesale and retail trade; repair of motor vehicles, motorcycles, household goods and personal items	1479,2	1609,4	1548,5	1535,0	1 752,9
Hotels and restaurants	112,8	124,3	92,2	95,3	114,8
Transport and communication	1632,9	2092,8	1787,7	1695,2	1 407,4
Financial activity	1064,4	949,9	907,6	853,6	834,7
Real estate transactions, leases and provision of services	1956,4	2070,5	1849,2	1870,1	378,8
Public administration and military support security; social insurance	2518,6	2458,9	2307,4	2178,4	2 070,6
Education	721,6	782,0	786,9	643,7	687,6

The main reason for increasing labor productivity is the intensification of production - increasing the intensity of labor. The use of modern wide-ranging equipment in crop production contributed not only to increase productivity, but also to reduce the cost of fuel per 1 hectare of arable land, improve the quality of agricultural techniques, reduce net costs. Using new high-efficient equipment and technologies, producers release a significant number of jobs, while the state does not conduct an aggressive policy of creating jobs in rural areas. An increase in unemployment in rural areas, urbanization processes, and an increase in the proportion of the elderly population living in rural areas is the result of the introduction of new equipment and technologies.

As practice shows, the labor release from social production, creates a risk of opportunistic relations between private farms and large trade production. Another negative aspect of the labor release is the devastation and extinction of villages. Firstly, this is due to the meager state support for social infrastructure, which in itself does not motivate the population to improve demographics. Secondly, the lack of stable earnings or income contributes to the migration of the rural population in large towns and cities.

The state, not understanding the problems of the villagers, is now completely abstracted from it. It is empirically proved that the level of development of the social sphere in

rural areas is determined by the level of development of production located in this area. And it does not matter what kind of production is large trade or small trade. The main thing is that production should be self-sufficient, that it should have the necessary number of jobs for rural residents, infrastructure and a sufficiently high level of wages.

From the standpoint of the state, it would be advisable to implement not a declarative regulation of agrarian sector, written in the Law “On agriculture development”, but real, with the developed mechanisms of state support and regulation, defined the term financing of the agricultural sector. For example, to regulate the level of production of certain types of products for which there is a steady overproduction, to develop promising activities – the production of biofuels, waste disposal of livestock complexes. For the types of products that are produced in insufficient amount, either tax exemption or an increase in state aid is required. Taking into account all the above, the state should orient the producer not just to support the production volume, but to produce environmentally friendly products.

To date, the issue of support for the development of rural areas is ambiguous. State intervention is required not only with regard to the development of rural areas in the framework of the relevant subprogram, but also the adoption of measures to increase the wages of rural workers, as one of the drivers of high-efficiency commodity production. In addition, in order for the village not to extinct, it is necessary to create new jobs that would use the released labor force.

Thus, based on the above, we can identify the factors that determine the increase in the intensity of production and labor productivity:

1. Increase of technological discipline on the basis of application of modern technologies and equipment;
2. Selection of qualified personnel;
3. Motivation of agricultural producers to reduce production costs; focus on the growth of production and specialization;
4. Implementation of internal economic relations, taking into account the interests of the staff and owners of enterprises;
5. Program-target approach to the development of agro-industrial production;
6. Preferences to agricultural producers from the state authorities, including the priority national project “Development of agriculture”, which found active support of agricultural producers, and then the State Program.

Conclusions

In modern conditions, the achievements that are available in agriculture are not enough. And in order to recognize the results of the agrarian and food policy satisfactory labor productivity should be 3-5 times higher by now on average in Russia.

For production to be effective, the rate of labor productivity growth must exceed the rate of cost growth, and the rate of cost growth cannot exceed the growth rate of prices of finished products. But such a breakthrough is possible only with active state support for innovations in agriculture and neighboring industries.

In this regard, the main priority of increasing labor productivity in agriculture should be the increase of the share of innovative products with high added value, the use of new technologies that can reduce production and circulation costs and increase the amount of gross agricultural output.

Another area of support for agro-industrial production should be innovative processes, as the acquisition of new equipment and technology is an unacceptable luxury for agricultural producers. Only a few agricultural enterprises can afford to update 15-20% of equipment per year. It is in this area that the state should support agricultural producers. Obviously, one of the conditions for such support should be an increase in wages for villagers.

The current trend of increasing agricultural production has caused the need to save resources. Unfortunately, at present, agricultural producers do not use widely such a reserve as in-depth specialization and concentration of production. Meanwhile, specialization and concentration of agricultural production are the main factors of intensification of production, increase of labor productivity and efficiency of agricultural production.

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