CONDIŢIILE MATERIALE DE PERFECŢIONARE A STRUCTURII FORŢEI DE MUNCĂ ÎN MEDIUL RURAL

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În articolul dat sunt determinate condiţiile materiale de funcţionare a agriculturii şi a particularităţilor de implementare a activităţii de muncă a persoanelor din mediul rural în condiţiile de formare a sistemului de securitate alimentară din Ucraina.

Cuvinte cheie: *forţă de muncă, forţă de producţie, instrument de muncă, bunuri materiale, condiţii materiale.*

MATERIAL CONDITIONS OF IMPROVING THE STRUCTURE OF LABOR FORCE IN THE RURAL AREA

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There are determined the material conditions of the functioning of agriculture and peculiarities of implementation of work activity by people from rural areas in conditions of formation of the food security system of Ukraine.

Key words: *labour force, productive force, labour tool, material goods, material conditions.*

JEL Classification: E31, J21, J62, R10

The structure of the labor force of agriculture represents a complex and multifaceted phenomenon. Its formation, development and improvement are under the direct influence of the productive forces and production relations. Classic economists noted that the basis for the development of society is the development of the productive forces, especially the improvement of labour tools. Without connection of workforce with tools there is not possible the process of labor itself and ultimately the process of production of material goods. But this relationship does not appear as something fixed or static. On the contrary, it should be considered in its motion and development. Factors of production and the relations of production have also an influence on the qualitative and quantitative ratio of the elements of the productive forces. Thus, under the influence of technical progress, qualitative changes take place in the means of labor. They are constantly evolving and improving. And in order to "turn them out from only possible in real and current use values" there is a need for changes in the labor force.

On the one hand, the means of production are the measures of human labor development, the materialization of accumulated knowledge, experience, and mastery of the man, on the other hand, their effective use requires a corresponding level of training of the workforce. That is the level of development of the workforce should reflect the nature and level of development of the means of production. There is a constant dialectical relationship between personal and real factors of production.

With regard to agriculture, this means that the profound changes in the technical basis of agricultural production have a significant impact on the nature and content of the work, leading to certain structural changes of labor force, demanding much to the worker himself, to his level of education and training.

Thus, it should be taken into account the specific of the branch of agriculture. In agriculture, as in any other branches, the impact of environmental conditions on the formation of the structure of the labor force happens in its specific directions, namely:

1. The man in the framework of biological relationships is included in the total structure of the biosphere.

Therefore, the evolution of man as a living organism is in accordance with the laws of natural science together with the rest of the biosphere and nanosphere, influencing on them and at the same time, experiencing the opposite of their influence. A certain role is played by the production activities of the society.

2. The process of production in agriculture is closely related to climatic conditions, which to some extent determine the level and nature of the professional skills of the labor force and its qualification.

3. Production activity of a man in agriculture is associated with such specific means of production such as land, productive and working livestock, perennial fruit crops, etc. This fact has a certain effect on the quantitative and qualitative aspects of labor force. Land scarcity as a mean of production involves the process of increasing the utilization of the workforce and its release into other branches through the use of mechanization in agriculture.

The interaction of economic and natural laws does not change the overall direction of the structural changes of the working force in the rural area, but at the same time, it imposes on them a certain effect, associated in particular with the seasonality of production, biological characteristics of land and living organisms.

Presenting an integral component of the total labor force in society, the total labor force in agriculture is developed as part of a whole. At the same time, in the position of private sector, it has a number of internal patterns of development that determine its specificity and are, respectively, the subject of a special study. From the point of view of simple labor process, formation of the total labor force in agriculture is determined by the peculiarities of the development of its productive forces, in particular by the influence of biological, climatic and other environmental factors on the overall status (level and specificity) of social labor in agriculture - its specialization, cooperation, combination and concentration.

In the analysis of the division of labor between industry and agriculture, classic economists noted an important trend in the structural changes of the labor force, due to the development of productive forces.

The concern is that the relative number of people employed in agriculture, can not only be determined by the number of directly employed individuals in it - a lot of individuals are involved in agricultural production who indirectly are not subordinated to it directly. Justifying the process of liberation of labor force from agriculture, classic economists stressed that it takes part because in larger scale of production - with a large farming - labor becomes more productive, but also because a large part of the non-agricultural population carries out the work in agriculture, bringing the agriculture a constant capital, such as fertilizers, seeds, all kinds of machineries. Thus, the development of productive forces determines the two-way process in the movement of labor in the countryside: the absolute reduction of the directly engaged persons in agricultural production and increase of the number of producers, indirectly taking part in it, and the absolute and relative reduction in the number of people employed in agriculture in the process of division of labor is accompanied by qualitative changes in the workforce. This is especially evident at the stage of technical modernization of agricultural production, which is the basis of changes in the nature and content of the agricultural labor, transforming it into a variety of industrial labor and acting as a peculiar form of implementation of the requirements of certain economic laws.

Technical re-equipment of agriculture in its development goes through several stages. The first stage is characterized by a partial mechanization and introduction into production of individual machines and mechanisms. During this period, there are only created the conditions and prerequisites for the conversion of agricultural labor in a variety of industrial one. The introduction of machinery contributes to fundamental changes in the technical basis of production, to the further division of labor, to the quantitative growth of occupations of narrow profile, progressive changes in the nature and content of the labour.

Already at the initial stage, the introduction of machinery, especially tractors, has played a crucial role in the progressive rise of agricultural production, as well as in the restructuring of the psychology of the peasant. In the first phase, there were decided mainly the issues related to quantitative saturation of agriculture with individual machines and mechanisms.

At the second stage, there is carried out the transition from mechanization of certain types of work to the comprehensive mechanization of production processes. In place of disparate machines and mechanisms, a system of machines comes, which actively promotes the growth of labor productivity, reduces the employment, especially in the horse-hand and poorly mechanized operations, the less use of manual labor, the change in the relationship between physical and mental labor in the direction of increasing the share of the latter and restructuring of the labor force.

For the third phase, there is characteristic the transition from the complex mechanization to the wide automation of all parts of the production, which fundamentally changes the content, nature of work, the role and the place of man in the course of labour activity. Automated production requires a correspondingly high level of professional and skilled training of staff, its education and culture.

Characteristic features of technical modernization of agriculture at the present stage are its transition from the mechanization of individual types of work to complex mechanization and automation of production processes. In addition to the quantitative growth of new machinery and mechanization of individual processes, there is more noticeable the introduction into the production of machinery systems. In the course of industrialization, division of labour is increasing and on this basis, the concentration and specialization of agricultural production increase on the basis of inter-farm cooperation and agro-industrial integration, here also takes place the process of expanding and deepening of ties in industry and agriculture. In this regard, agricultural labor gets a qualitatively new content, which in agriculture and livestock, in the degree of its development is getting closer to the work of the industrial type. The industrialization of agricultural production serves as an objective necessity and prerequisite for improving the total labor force in the rural area. This is determined by several factors. Achieving the goal of production is impossible without the dynamic development of all sectors of the economy. A particularly important role is played by agriculture, which is designed to meet the growing needs of the population in food and feed industry.

This problem can be solved by strengthening the role of intensive factors and reduce the number of people employed in agriculture, which is impossible without further industrial transformation of the industry. Only with the development of industrialization and the growth on this basis of the productivity of labor, agriculture can be considered as a labor pool for the industry and the non-production sphere. Efficiency and high-use of the new agricultural technology requires not only the quantitative growth of skilled workers, but also the continuous improvement of their knowledge. On the one hand, the industrialization of agricultural acts needs to improve the quantitative objective of labor and on the other hand, it creates for this fact relevant prerequisites. For example, the transition of agriculture on an industrial basis helps to improve working conditions, a change in its nature and content, as well as raising the incomes of the rural workers and, thus, to a better meeting of their material needs. At the same time, there is expanding the scope of the law of economy of time, which makes it possible to increase the degree of satisfaction and spiritual needs – there appear time for cultural rest, vocational and general education, sports, etc.

In the 80's of the twentieth century in the Ukraine, the pace of industrial development have greatly strengthen the material and technical base of agriculture, it is based there have been profound quantitative and qualitative changes that affected the growth of labour force and necessities of agriculture.

Given the importance of the industrialization of agriculture in order to improve the efficiency of social production, and based on the current level of development of industry, there has been accepted the direction on accelerating the pace of modernization of agriculture and convergence of the agricultural labor in terms of its capabilities with the industrial labor.

Special significance is given to issues of improving the quality of the supplied equipment, the establishment of a system of machines for the comprehensive mechanization of production processes in crop growing, universalization, unification of technology, the rational relation of the energy capacity and working machines. On the fields of collective farms and state farms began to come more powerful and high speed tractors, grain and beet harvesters, both of domestic and foreign production and other equipment. Saturation with the new technology has allowed much to raise the level of mechanization of production, shorten the work, and for the sectors – to pass to mechanization and partial automation.

At the same time, in the 90's, the situation with the material base of agriculture began to deteriorate rapidly. The transition of the agricultural sector to the market relations, the distortions in the implementation of the agrarian reform, the abolition of collective farms and state farms, a process which was accompanied by a natural stretching techniques on various bottom of the barrel, have led to a complete collapse of economies and the collapse of their technical support. The agriculture is provided with main agricultural machinery with 50 - 60%, taking into account the fact that almost 90% of the vehicles are in need of major repairs.

Each year, farms write off 8-10 times more vehicles than they buy the new ones. In 2001-2010, the fixed assets of the national economy increased by 5.5 times, and in agriculture, on the contrary, decreased by 20%. By the level of provision of material and technical resources, Ukraine lags far behind the developed countries. On average in Ukraine on 1 ha of agricultural land, there are 5 to 7 times less fixed assets compared with agricultural enterprises with updated material-technical base.

The year dynamics data show a sharp decrease in the number of vehicles in farms (Table 1).

Table 1

Availability of agricultural machinery in agricultural enterprises (the end of 2011)*

	1991	1996	2000	2005	2011	% 2011 to 1991
Tractors thousand units	497,3	441,7	318,9	216,9	147,1	29,5
Engine power of tractors, MW.	31423	28078	20611	14792	12656	40,2
Harvesters, thousand pieces.	105,2	85,9	65,2	47,2	32,1	30,5
Corn harvesters, thousand pieces.	15,3	12,0	7,9	4,8	2,3	15,0
Beet harvesters,thousand units	19,8	18,3	13,0	8,5	3,8	19,2

Source:* Agriculture of Ukraine, Statistical Book, 2011, page 203

Not the best situation happens with the ensuring of rural household with techniques, as shown by the sample survey data (Table 2).

Table 2

Availability of agricultural machinery in rural households in 2012 (%)*

	All rural households	Including the households with the land area		
		0,5 ha and less	0,51-1,00 ha	1.01 ha and more
Households that possess technique including:	14,8/100	8,7/100	14,4/100	28,8/100
Tractor	16,7	3,5	11,6	28,4
Combine	1,7	0,4	0,9	3,1
Drill	9,4	2,3	7,6	15,2
Truck	3,4	1,9	1,5	5,5
Tiller	13,8	3,2	11,4	22,3

Source:* The main agricultural characteristics of households in the rural areas in 2012. Statistical newsletter, Statistics civil service, p.20

During the years of independence, the production of agricultural machinery drastically reduced. If in 1990 there were produced 106 thousand tractors and 57 thousand seeders, then in 2011, respectively, 6.4 and 4.9 thousand, which accounted for only 6 percent and 9 percent. All this has led to a significant increase of the load per unit of technical tool, as well as to market saturation with technique of foreign manufacturers.

Scientists from NSC "Institute of Agrarian Economics" estimate that technological needs of agriculture in the technical means shall be calculated in the amount of about 300 billion UAH, that is, for 10 years, every year it is necessary to buy equipment in the amount of 22 - 28 billion UAH. In fact, it is purchased at ten times less, and on the Ukrainian market more than 70% of equipment is imported. All of the major campaigns (agricultural holdings) work only on imported machinery. In 2011, there were purchased 586 harvesters, including 78.7% of foreign production. Of course, foreign technology with its technical and economic performance is far superior to domestic one. In particular, it allows during the processing of soil and seeding more than 7 times reducing consumption of oil, 10 times the cost of labor, more than twice the direct operational costs.

Today, the world market for agricultural machinery is practically divided between transnational companies such as "John Deere", "New Holland", "AGCO", and «Same Deutz Far." The share of these companies, particularly in the tractor market in the U.S. consists in 95%, Western Europe - 85%. In Western Europe, more than five thousand of agricultural engineering companies are working. Of course, the domestic producers can not afford to compete with such companies, therefore, it is not surprising that the imported equipment is purchased for the sum of times greater than the national one.

Given the fact that nearly 17 million hectares of land are in the use of agro-enterprises with an area of less than 500 hectares, as well as in the households which are forced due to the lack of financial resources to use outdated technology, and that the need of such households is only tractors with 18 - 40 hp in the amount of 200 thousand units, there is a serious problem on the agenda regarding the reproduction and development of material and technical base of agriculture.

Transition of agricultural production to industrial rails necessitates the significantly increase of the energy output. Given the specificity of agricultural production and the experience of the developed capitalist countries, energy power-labor in agriculture should be higher than in industry. The growth of energy power-labor is provided as an increase in the total capacity of the mechanical engines, and the widespread use of electric energy.

Electricity plays a leading role in changing technology and production techniques. It brings together machinery and mechanisms in a single system, provides the rhythm of their work and the continuity of the production cycle, and creates real conditions for the comprehensive mechanization and automation of production. Such processes are related to the electrification like the conversion of agricultural labor in a variety of industrial one, displacement of manual labor with machinery, changing the social aspect of the rural area.

However, agriculture still lags far behind on total energy consumption and the level of energy available for the labor force. From year to year there is a strong tendency to reduce the energy facilities in farms. In particular, in 2011 compared with 1991, the power capacity decreased by 73.3 million kWh, or three times. There are not used yet the great possibilities inherent in replacing other forms of electrical energy. Electrical energy has the potential to be widely used for the treatment of soil, weeding, threshing grain, pre-treatment of seeds, animal exposure, etc. All this leads to significant savings of labor and materials in agricultural production.

In a number of cases in the agricultural sector, as evidenced by the expertise available in our country and abroad, it is economically viable to use renewable energy.

In 2010, energy costs in the cost structure of agricultural products accounted for 18%, and in crop production - 23.1%. At the same time, the industry has great potential for the production of energy resources, at the same time consuming only about 1% of biofuels and waste from the total energy consumption. The use of renewable energy sources can be made in the following directions:

- expansion of agricultural products for biofuels;
- production using wind turbines with mechanical, thermal and electrical energy;
- getting cold and low temperature heat - at the expense of solar and geothermal energy;
- higher utilization of wind and solar energy for some activities.

The widespread use of alternative energy in agriculture is an objective condition for the further economic growth and for solving the problems of unemployment. Active work in this direction is carried out in European countries, including Germany who is leading, providing 25% of employment in this sector in the EU. It is planned that by 2020, the development of alternative energy sources will allow to increase the number of jobs in Germany by 140 thousand, Poland - 160 thousand, Spain, Italy and France - respectively 120, 140 and 60 thousand.

In Ukraine, according to the national project "Energy of Nature" (Ukrainian Presidential Decree from 08.09.2010) is there is planned before 2015 to build 2,000 MW of wind energy capacity and up to 1,000 MW of solar powers, which will enable annually to produce 4.5 - 5.0 billion kWh of clean electricity.

To unleash the potential of agriculture production and use of alternative energy sources a number of measures are provided, including:

- expansion of facilities for the production of biofuels from agricultural raw materials;
- development and introduction of new biofuel technologies;
- implementation of production standards for the use of crop rotation with roomy energy crops, etc.

However, agriculture represents not only the use of new forms of energy is at an early stage, but still there is not solved the problem of replacing unproductive manual labor. In particular, the level of mechanization of certain types of crop work is not sufficient; there is a lot of manual labor work in the livestock sector.

For example, in 2012, 90% of rural households used manual labor to work the land, 10.4% of households cultivated the land by hand, 7.8% - with a tractor, 50.4% - by hand and with the tractor. It is estimated that the mechanization of only labor-intensive crops in agriculture, even on the basis of existing equipment would significantly reduce the labor costs. Depending on the potential of industrialization, the branches of the agricultural sector can be divided into three groups.

The first - the branches in which the production processes are almost mechanized (grain farming); the second - the branch whose technical equipment is under development and refinement (pig growing); and the third - the branches for which, even in theory there are not yet acceptable engineering solutions (berries and some vegetables cultures).

Currently, there is a significant gap in the development of material and technical base in the level of agricultural mechanization of individual regions and farms, which, of course, have a different impact on issues related to the formation and improvement of the structure of the labor force. Naturally, as a result of differentiation of the material-technical base, there are large variations among the manual workforce and mechanized labor.

This situation is explained, first of all, by the different levels of development of the productive forces in agriculture. Therefore, improvement of the total labor force in some regions of the country is closely connected with the process of alignment of the material-technical base of agriculture. In addressing these issues there is needed a differentiated approach, taking into account not only the available means of production, but also the need for them, depending on climatic conditions and the achieved level of specialization.

The specialization and concentration of production on the basis of inter-farm cooperation and agro-industrial integration has a significant impact on the structural changes of agricultural workers in the process of industrialization. During the inter-farm cooperation and agro - industrial integration there is enhanced the division of labor, the structure of production changes, instead of multi-sector households, specialized agricultural enterprises for certain types of production come, a number of them getting apart from agriculture and becoming independent branches of industry (feed production, storage, processing, etc.); there are expanded and strengthened ties between production cells, there are deepened the labor co-operation of the whole people. New forms of organization of social production facilitate the transition of agriculture from partial to comprehensive mechanization of production processes for the introduction of the machine system, which allows mechanizing many of the processes of production, changing their technology.

According to a number of indicators (fund-, energy-, and electric power consumption, conditions, payment performance) the work on off-farm enterprises and organizations will be closer to the work in the industry.

So, the important pattern of agricultural development at the present stage is the technical re-equipment, which puts on the agenda as a completely new production and socio-economic objectives and provides the complex solution. In this process, two opposing tendencies appear: on one side slowly, but gently occurs the quantitative saturation of agriculture with equipment, there is improved its quality and characteristics and on the other part, a part of production activities remains without mechanization, which leads to an increase in the differentiation between the industrial and manual labor. All this has a certain effect on the structure of personnel, their needs and training.

In the strategic directions for the development of agriculture of Ukraine for the period up to 2020, a number of measures for the reproduction and development of material and technical base are present. In particular, there is provided:

- to restructure the domestic machinery industry for agriculture on the basis of the creation of national and international industrial and financial conglomerates;
- to create a joint venture for the production of technical equipment for the village with a translational localization of a part of domestic units from 20 to 80 percent or more;
- to purchase licenses for the production of high-quality mini-tractors and other technical means, which are not produced in Ukraine;
- to help to expand the market of technical services and sharing of agricultural technology, including on the terms of cooperation and lease;
- to restore the system of annual training, retraining and qualification of engineering and technical personnel, machine generalists, working trades for the engineering industry;
- to improve state regulations on support for technical and technological modernization of agricultural production and the development of domestic machine building industry, their trust and preferential investment.

The development of the productive forces of the modern agriculture presents a number of requirements to the total labor force, its internal proportions and relationships. By creating a certain qualitative and quantitative proportionality dismemberment of agricultural production, the productive forces are the material basis for the formation of a real and improvement of the total labor force and its individual components, determining the nature and intensity of structural changes of labor in agriculture and livestock.

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