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MANAGEMENT OF PRODUCTION RESOURCES OF AGRICULTURAL ENTERPRISES IN UKRAINE: A CASE STUDY OF VOLYN REGION

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Abstract

The article aimed to analyze resources management of an agricultural enterprise in Ukraine. It proved that the resource potential of agricultural enterprises is a necessary element of the management system. The need for strategic management of resource potential is determined by the fact that in modern conditions, inefficient use of resources reduces the competitiveness of enterprises and makes their activities irrational. According to the results of the study, we substantiated that the development of a methodology for the formation of a resource strategy offers an opportunity for the enterprise to ensure the effectiveness of the process of providing its own resources. The given factors and conditions of strategic management of the resource potential of agricultural enterprises contribute to the further development of applied aspects of the use of the theory of resource potential by enterprises in the field of agriculture.

Key words**:** *agricultural sector, agricultural enterprises, resource potential, production resources, regression equation*

INTRODUCTION

The peculiarities of the functioning of agrarian enterprises in the conditions of a significant increase in the market competition provide for the objective necessity of the formation of sufficient resource potential for the implementation of operational activities. In addition, another important aspect of ensuring the efficiency of such business entities is the rational use of available production resources, taking into account their limitations. At the same time, a sufficient level of providing the agricultural sector of the economy with production resources acts as a key and necessary condition for the general improvement of the efficiency of economic activity, improvement of production technology, as well as improvement of the working conditions of employees.

At the same time, as business practice shows, the economic efficiency of agricultural enterprises largely depends on the level of their provision of land, material, labour, and financial resources. In turn, efficiency implies the need to ensure a rational ratio of available resources and ensure optimal use of them in the process of production. To ensure such efficiency, specialized mathematical and econometric models are used, which provide for the construction of an effective system of management of production resources of enterprises. Such management involves the need to balance the supply of production resources of the enterprise and their optimization, as well as to ensure the most

effective use of them in production activities under existing conditions.

The study of practical aspects of the optimization of the use of production resources of agricultural enterprises is characterized by a significant diversity of research, which is mainly concentrated in the field of substantiation of methods of increasing the efficiency of the use of production resources. It is worth noting that a significant contribution to the study of the peculiarities of the formation of the resource potential of agricultural enterprises and ensuring its rational use was made in the works of such researchers as I. Balaniuk [1], O. Binert [2], I. Britchenko [3-11], Y. Chaliuk [12], Y. Danshina [13], M. Dziamulych [14-21], N. Khomiuk [23], S. Koshova [24-25], M. Kryshtanovych [26], A. Marcuta [28], N. Onyshchenko [30], A. Popescu [31-40], T. Shmatkovska [41-43], R. Sodoma [44-49], O. Stashchuk [50-52], I. Tofan [54], I. Tsymbaliuk [55], I. Yakoviyuk [56], V. Yakubiv [57], O. Yatsukh [58], and others.

However, significant and dynamic changes taking place in world markets force agricultural enterprises to look for new models of optimizing the use of production resources that could provide them with the most effective use of available resource potential under existing restrictions to ensure maximum profits.

MATERIALS AND METHODS

It has been established and substantiated that the effective method of resource potential management does not take into account the action of specific factors inherent to each of the resources, which does not allow to give an adequate assessment of the real state of affairs in the activity of an agricultural enterprise and therefore necessitates the continuation of scientific research in this direction.

Considering the purpose of the article, the main task of the research is to determine the factors and factors affecting the formation and use of the resource potential of agricultural enterprises and the further development of the industry at the regional level in Ukraine.

To ensure the implementation of the research, the method of correlation-regression analysis was used. Note that in the case of a correlation relationship, depending on the change in the factor characteristic or the ordered set of factor characteristics, the average value of the resulting characteristic changes.

Depending on the direction of action, direct and inverse connections are distinguished. In the presence of a direct connection with the increase of the factor characteristic, the resulting characteristic also increases, when the factor characteristic decreases, it decreases. If an increase in the factor characteristic is accompanied by a decrease in the resulting characteristic, we have an inverse relationship.

Depending on the form of the formula that establishes the connection between the factor and the resulting features, linear and non-linear connections are distinguished. The linear relationship between the factor characteristic x and the resulting characteristic y has the form $y=ax+b$, its graph is a straight line. If there are several factors, then the linear dependence has the form: $y=a_1x_1+a_2x_2+\ldots+a_nx_n$. Other types of relationships are non-linear [29].

According to the number of factors that influence the resulting characteristic, unifactorial and multifactorial relationships are distinguished. One-factor relationships are also called pairwise. If the relationship is multifactorial, then all factors act simultaneously and in a mutual relationship.

The tasks of correlation analysis include the quantitative measurement of the density of the connection between the factor and the resulting features, the determination of unknown connections, and the assessment of the factors that have the greatest influence on the resulting feature. The purpose of regression analysis is to find an analytical expression (formula) that establishes the relationship between the factor and the resulting feature. The degree of influence of factor characteristics on the resulting character is also determined. Regression models can be used to predict outcome trait values.

RESULTS AND DISCUSSIONS

The main meaning of the concept of

«enterprise potential» consists in the integral reflection (assessment) of the current and future opportunities of the economic system to transform input resources with the help of the entrepreneurial abilities inherent in its personnel into economic goods and to satisfy corporate and public interests as much as possible.

It is worth paying attention to the fact that the concept of «resource potential» includes the totality of the potential of all resources of the enterprise, which are necessary for the implementation of the process of production of products and provision of services to meet the needs of society. In our opinion, it is important to include such resources as labour, production, natural, financial, and informational. In addition, in their totality, the specified resources create prerequisites for the formation of the investment and innovation potential of the enterprise.

Almost a third of the entire economy of our country is directly related to agricultural production. One job created in the field of agriculture allows for the employment of 5-6 people in other areas of the economy, and an increase in the production of agricultural products by 1% ensures the growth of the entire economy of the country by 2.0-2.3% [53].

In addition, agriculture is the main area of the economy. Agriculture accounts for 1/4 of the gross regional product.

The agricultural sector of the Volyn region has certain potential and competitive advantages, which under certain conditions can be involved in the regional economy.

At the same time, agriculture in the region is characterized by small-scale production and the absence of large-scale production commodity agricultural production inhibits the development of the processing industry and logistics infrastructure of the agricultural sector.

Due to the large possibilities of using innovative equipment and the latest technologies in production, large agricultural organizations have advantages over small farms in terms of labor productivity. Small farms can only get access to the results of scientific and technical development by uniting various cooperatives.

Demonstrating the success of agriculture in developed countries, the main producer of products is the farmer [22]. At the same time, it should not be forgotten that each farmer is a member of several communities – for the sale of products, for the use of equipment, for veterinary services, for receiving loans, etc. However, the hopes that the farmer will become the main breadwinner in Ukraine have not yet come true.

In the structure of land plots of agricultural producers, the area of land used by the population has increased. The largest specific weight among agricultural enterprises is the land of economic associations, although there is a tendency for a gradual decrease. In the structure of the cattle population during 2017-2020, the share of agricultural enterprises decreased from 63.5% to 11.2% [27]. In private households, the specific resource potential (per 1 ha of agricultural land) is 1.4 times higher than in agricultural enterprises, which is a consequence of the high level of employment of live labor in them (0.76 workers per 1 ha versus 0.08 in enterprises). In the structure of the resource potential of households, the main specific weight is occupied by land and labor resources (90%), while in agricultural enterprises – land and material and technical resources (92.5%) [27]. 1/4 of the resource potential of agricultural products is concentrated in households [53].

Based on the calculation per unit of resource potential of the economy, the population, in general, receives 4.4 times more gross agricultural products, and 2.5 times more net gross agricultural final products than agricultural enterprises. The production of agricultural products in households is carried out with 9% lower costs per conventional unit of gross agricultural products, including. in crop production – by 43.5%, in livestock production – by 4.5% [27]. The results of the conducted research testify to the low level of effectiveness of the functioning of almost all organizational and legal forms of management in the agricultural economy of Ukraine. Some positive developments in performance are not sustainable and are not large enough to claim that there is an improving trend.

To a large extent, the formation of the dynamics of management efficiency in various organizational and legal forms in the Volyn region was influenced by the negative dynamics of resource provision of the studied farms, which is a consequence of the decrease in investment activity of agricultural enterprises as a result of the deterioration of their financial and economic condition, which was largely facilitated by the lack of specific state support for the development and necessary conditions for this.

The main organizational and legal forms of agricultural enterprises that have become widespread in the Volyn region are limited liability companies as one of the forms of economic companies and private (private-lease) enterprises, which include individual farms that have the status of farms. Certain differences in the results of the functioning of enterprises of these two different organizational and legal forms made it possible to establish the processing of information about agricultural enterprises in certain districts of the Volyn region (Table 1).

Table 1. Relationship between the organizational and legal form of agricultural enterprises and the results of their operation in the Volyn region, 2021.

Indicator	Limited liability companies	Private enterpri-ses Total	Total
Number of enterprises	37	25	62
Area of agricultural land per enterprise, ha	707	947	804
Average annual value of assets per enterprise, thousand UAH	1,659.5	3,140.2	2,256.6
The number of employees employed in agricultural production per 1 enterprise, persons	44	74	56
The number of workers employed in agricultural production per 100 hectares of agricultural land, persons	6	8	7
Administrative costs for 1 ha of agricultural land, UAH	51	59	55
Ratio of administrative costs to production costs, %	5.4	3.9	4.5
Profit from the sale of products per 1 ha of land, hryvnias	-115	42	-52
The level of profitability of agricultural products, %	-24.4	8.3	-12.4

Source: Built based on [27].

In total, data on 62 agricultural enterprises were processed, of which 37 are limited liability companies, and 25 are private enterprises. The level of intensification of agricultural production in private enterprises is generally higher than in limited liability companies. The natural result is higher economic efficiency of agricultural production in private enterprises. If in the studied group of enterprises in limited liability companies agricultural production is unprofitable, then in private enterprises - due to the better state of the material and technical base, higher intensification of production, and more efficient activity of the administrative apparatus - production is profitable.

The effectiveness of the use of resource potential by enterprises in the field of agriculture is determined by the influence of a number of factors, which we divided into two groups: factors of the formation of resource potential and factors of its effective use (Fig. 1).

The presented factors are divided into managed and unmanaged in relation to a separate business entity. Controlling should be considered those factors of influence, the occurrence and strength of which can be regulated by the enterprise itself. This category includes the quality of material and labor resources, the company's marketing policy, the level of organization and management at the company, etc. Uncontrollable are factors of external influence, the appearance and intensity of which the enterprise can predict, but is unable to influence them. A correlation-regression analysis was carried out for the examined agricultural enterprises in order to identify the influence of individual factors, which are related to the peculiarity of the organization of agricultural production, on the efficiency of the latter.

In order to reveal the objective influence of individual factors on the efficiency of agricultural production, a correlation-regression analysis of the assessment of the activity of a group of agricultural enterprises was conducted. At the same time, in the process of analysis, the income from the sale of products based on 1 hectare of agricultural land (u) was taken as a functional criterion of efficiency.

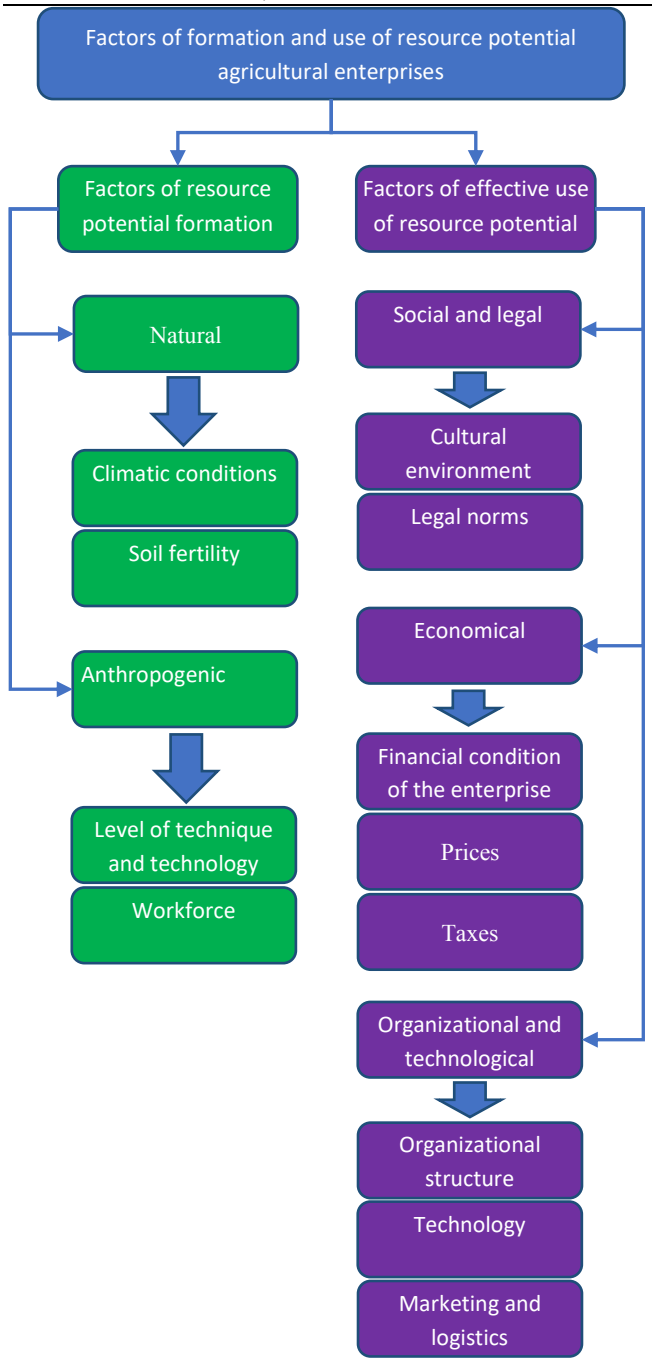

Fig. 1. Factors of formation and use of resource potential of agricultural enterprises
Source: Systematized by the authors.

Among the factors whose impact was assessed in the analysis process, the following are included:
– an average annual value of enterprise assets based on 1 ha of agricultural land, UAH (x1);
– production costs per 1 ha of agricultural land, UAH (x2);
– administrative costs per 1 ha of agricultural land, UAH (x3);
– the share of wages in the structure of production costs, % (x4);
– labor costs per 1 ha of agricultural land, man-hours. (x5);
- the share of income from the sale of animal husbandry products in the overall structure of the company's income, % (x6);
– the area of used land, which characterizes the scale of production, ha (x7).
According to the research results, the obtained regression equation has the form:

$$y = -20.2 + 0.0055x_1 + 0.6568x_2 + 0.8382x_3 - 4168x_4 + 0.4071x_5 - 2.0533x_6 + 0.0234x_7$$

On the basis of the paired correlation coefficients between the effective and separate factor characteristics, it was established that there is no influence on the income from the sale of products per 1 ha of agricultural land, the value of assets per 1 ha of land (x1), the economic importance of livestock enterprises (x6) and the scale of production (x7). This indicates the irrationality of the composition of assets. A significant amount of faulty equipment or livestock premises are not used in production at all.
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In the studied group of enterprises, which had from several hundred to several thousand hectares of land at their disposal, no significant dependence of the level of income on the scale of land use was recorded. This is due to the fact that in agricultural enterprises, the land is used with varying intensity. The share of unsown arable land in agricultural enterprises of the region is marked by a growing trend. Due to the decline of livestock

industries, natural fodder lands are used extremely inefficiently in many enterprises.

The influence of other factors from the population we studied is more significant. This is evidenced by the multiple correlation coefficient between them and the resulting feature, which is 0.92.

The results of the correlation-regression analysis indicated the importance of problems with the optimization of the resource potential of agricultural enterprises, a large variation in the economic efficiency of the production of certain types of products, which does not allow to form a rational specialization of the enterprise under the existing conditions, to ensure the effective use of land and labor resources, etc. This means that in order to increase the efficiency of the functioning of enterprises of the industry, it is necessary to talk not only about improving the financing of their activities, but also about improving the principles of forming and strengthening the material and technical base, developing new approaches to the use of labor resources, and developing the system of agrarian land use.

CONCLUSIONS

Therefore, the resource potential of agricultural enterprises is a necessary element of the management system. The need for strategic management of resource potential is determined by the fact that in modern conditions, inefficient use of resources reduces the competitiveness of enterprises and makes their activities irrational.

The development of a methodology for the formation of a resource strategy provides an opportunity for the enterprise to ensure the effectiveness of the process of providing its own resources. The existing situation, when the resource strategy is either not developed at all, or is part of the production strategy, leads to the fact that resources are considered as means to ensure the production process, and not as sources of competitive advantages that provide the opportunity for further development.

The given factors and conditions of strategic management of the resource potential of agricultural enterprises contribute to the further development of applied aspects of the use of the theory of resource potential by enterprises in the field of agriculture.

Further research in the resource potential management system of agricultural enterprises should, in our opinion, be aimed at identifying trends and changes regarding the expansion of economic reforms in the industry. A modern management system should promptly respond to changes in the forms of ownership in the agricultural sector, to the expansion of production and social infrastructure, various forms of small business and entrepreneurship, etc.

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