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Fear about the consequences of using cryptocurrency is explained by the possible collapse of the country's financial market. Since the virtual currency does not depend on the economic situation in the country, people will mainly resort to capitalization in cryptocurrency. The absence of tax deductions and other revenues will lead to a decrease in the replenishment of the country's budget.

But in order to keep up with the West, it was decided to accept the Russian cryptocurrency and call it bitruble, since the country has officially established the ruble as its main currency.

In fact, bitruble will differ from the standard cryptocurrency and its established concept. So, bitrubles will be stored in blockchains - special storages, where all operations are recorded, while the Russian cryptocurrency is subject to tracking and regulation. For this, appropriate changes are made to the legislation, new system developments are introduced.

So, today a special system is being introduced ICO (Initial Coin Offering), providing for checking and tracking the course.

The Russian counterpart should be influenced by the Central Bank of the Russian Federation, which in the case of the ruble will influence the production and exchange rate of the bitruble.

The presented changes and implementation of the system will continue in 2020, it will take at least 3-4 years to carefully monitor its functioning and effectiveness in action, from that year the cryptocurrency in Russia may become legal.

So, we can conclude that cryptocurrency is a new word in money circulation. Its emergence is associated with the needs of the 21st century. In general, in terms of their characteristics, they are largely similar to traditional money, however, they have a number of fundamental differences that allow digital money to gain more and more popularity in the modern information space [6]. Список литературы:

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## SPECIFICS OF RENTAL RELATIONS DEVELOPMENT IN AGRICULTURE

### **Abstract.**

*These articles investigate the current state of leased land relations in agriculture, substantiate the need for a mechanism to regulate the maximum size of leased land used by one individual or legal entity, and prove that, to date, land lease is the basis for land relations in agriculture. Therefore, agricultural enterprises operate mainly on leased lands, the share of which exceeds 80%, it was found that the vast majority of agricultural producers enter into lease agreements with businesses that were formed as a result of market transformations (67.5%), it was found that The most common form of payment for the lease of land shares is natural, reaching 75%, and most lease agreements are concluded for a period of 5 to 10 years (58.8%), the amount of rent is dominated by a rate of 4-5% of the regulatory monetary value.*

**Keywords:** *lease land relations; rent; agricultural land; rent; agricultural producers, land ownership, agricultural policy.*



Lease land relations are recognized in world practice and are a leading form of agricultural land use. Lease provides an opportunity to increase land use. Based on world practice, it becomes obvious that the lease relationship is acceptable for both the tenant, as they are a reliable way of conducting agricultural activities, and for landlords, because those who do not have the ability or desire to cultivate land on their own, lease them, getting a stable income in the form of rent. Despite the advantages of land lease relations, the issues of land monopolization in the lease market and land depletion by land users remain unresolved.

Reforms in the agricultural sector of Ukraine's economy are based on the transformation of property relations and the consistent development of land and property leases in rural areas. In recent years, a significant legislative and regulatory framework for agrarian reform has been created, there are many developments in its scientific and methodological support, the first experience of successful operation of new organizational and legal structures in agricultural production. As a result of land reform in the countryside, market-type agro-formations have been created, the land use of which is based on the lease of land plots and land shares (units) obtained from the share of collectively owned lands. At this stage, land lease relations contribute to the adaptation of rural producers to market economy conditions and the solution of socio-economic issues. However, the protracted nature of the transition period and the lack of similar changes in world practice complicate their development and create a number of problems in shaping the welfare of the rural population and food security of the country.

Theoretical and methodological, methodological and practical aspects of the development of land relations that arise in the process of agricultural production, have constantly attracted the attention of domestic and foreign scientists. Problems of increasing the socio-economic and environmental efficiency of agricultural land use in a diversified economy are covered in the works of Andriychuk V. [1], Balanyuk

I. [4], Kaletnika G. [16], Kolesnik T. [18], Lutkovska S. [23], Mazur K. [25], Pronko L. [29], Pidvalna O. [31], Samborska O. [33], Khodakivska O. [34] and others. Researchers have proposed areas, mechanisms, tools and practical approaches aimed at improving the efficiency of land use in agriculture. Problems of research and the presence of debatable issues led to the choice of the topic of this article, determined its purpose and objectives.

During the implementation of the agrarian reform, rent is the basis for the formation of land relations, one of the forms of realization of property rights, an important element of social protection of land owners in terms of high-commodity production. Lease is a flexible tool in the formation of a new structure of agricultural production and implementation of socio-economic programs. Lease of land, instead of buying it, provides the tenant with significant savings of start-up funds, allows you to quickly adapt to market fluctuations and show their best business traits [4, p. 132-133]. Lease land relations have become widespread in the context of corporatization of business, the formation of a market mechanism for the circulation of agricultural land.

The main features characteristic of land lease are: the presence of a lease agreement; transfer of land use rights; rent for land use; term of ownership and use of land [2, p. 177]. The key measures in the lease for landlords should be to guarantee land ownership, fair payment for its use, compliance with the development of documents, clearly defined terms and compliance with the terms of the contract [3, p. 12-22]. Lease land relations are regulated by the Law of Ukraine "On Land Lease", the Land Code of Ukraine, the Civil Code of Ukraine, other regulations, as well as the land lease agreement. The land lease agreement shall specify the lease object, the term of the lease agreement, the amount, conditions and terms of payment of rent for land, established by agreement of the parties (except for terms of payment of rent for land plots of state and communal property, determined in accordance with the Tax Code of Ukraine.

Table 1

**Development of lease relations in agriculture, 2018**

Administrative territorial unit	Land lease agreements have been concluded thousand pcs.	Area of land leased under contracts, thousand hectares	Rent for land share for one year, UAH million	Pay for 1 hectare per year, UAH
Vinnitsia	422,5	1028,4	697,8	678,6
Volyn	92,0	194,9	138,5	711,2
Dnepropetrovsk	224,2	1267,5	946,3	746,6
Donetsk	177,2	970,5	500,1	515,4
Zhytomyr	173,0	485,4	310,9	640,6
Transcarpathian	9,0	13,2	3,9	296,6
Zaporozhye	172,1	1168,1	667,4	571,4
Ivano-Frankivsk	122,4	94,7	64,0	676,8
Kyiv	203,0	570,0	368,1	645,8
Kirovograd	212,9	1052,5	934,8	888,2
Luhansk	126,0	752,9	409,1	543,5
Lviv	157,2	238,3	154,9	650,0
Mykolayivska	147,3	859,9	514,1	597,9
Odessa	249,2	1069,5	683,3	638,9
Poltava	299,6	1100,5	1460,8	1327,0

continuation of table 1

Rivne	99,0	231,5	247,4	1068,8
Sumy	206,4	696,6	548,8	787,9
Ternopil	261,8	477,9	260,9	546,1
Kharkiv	192,6	1038,2	899,0	866
Kherson	134,1	804,2	443,8	551,9
Khmelnysky	325,2	729,6	532,0	729,2
Cherkasy	296,7	789,1	885,1	1121,7
Chernivtsi	94,0	114,1	99,0	868,4
Chernihiv	244,2	796,1	476,4	598,4
Ukraine	4781,8	17168	12490,6	727,6

Sources: calculated according to the data [11].

The spread of lease relations in a market economy is justified by the fact that the lease of land becomes much cheaper for agricultural producers than its purchase, this situation is due to some circumstances: slow development of the land market, associated with the legislative introduction of a moratorium; lack of effective demand in the land market. Limited financial resources of agricultural producers and the lack of available loans excludes the possibility of purchasing land, makes the lease a leading form [17, p. 24-31]

Analyzing the state of development of lease relations in the agricultural sector of the economy, it should be noted that the average cost of land lease in Ukraine in 2018 was 742.6 UAH / ha per year. The highest rates were in Poltava region, where the rent for one hectare of agricultural land was UAH 1,327 per year. Cherkasy (UAH 1,121.7 / year) and Rivne (UAH 1,068.8 / year) regions were also the regions with the highest rental rates. In general, rental rates in Ukraine differ depending on the region by 4.5 times or by UAH 1,000 per hectare.

The market for agricultural land lease in Ukraine is gradually shifting towards long-term lease. According to the State Geocadastr, in 2005 the share of lease agreements for 1-3 years was 45.7%, for 4-5 years - 41.2%, for 6-10 years - 11.3%, for more than 10 years - 1.8%. During the study period (2005-2019), more and more long-term lease agreements were registered in the land lease market in 2018. The distribution was as follows: the share of lease agreements for 1-3 years decreased to 2.9%, by 4-5 years - up to 34.6%, for 6-10 years - the share increased to 47.3% [14].

Analyzing the state of development of lease relations in agriculture, it should be noted that the rent for agricultural land depends most on the lease term.

Until 2018, in the absence of restrictions on the term of the lease agreement, farmers generally paid landlords a higher rent for the opportunity to lease land for more than 7 years. At the same time, the amount of rent is calculated as a percentage of the normative monetary value of arable land and fallow land in Ukraine. This indicator tends to increase. There is a difference in rents depending on the categories of producers, for example, high-commodity agricultural enterprises and agricultural holdings, on average, pay higher rents compared to farms, and agricultural enterprises in 2010-2018 paid 12% more than farms. The rent also significantly depends on the area of the land bank of the enterprise, the increase in the number of leased land by 1% increases the rent by 3.5%, the analysis of the dependence of the rent on the area of leased land and the lease term showed the effect of economies of scale and in time when renting agricultural land in Ukraine as a whole [16, p. 17-23].

The lease of state agricultural lands has some specifics, for example, the lease of land plots in state or communal ownership is carried out on a competitive basis by conducting land auctions in accordance with the procedure established by Chapter 21 of the Land Code of Ukraine, except as provided by land legislation [10].

Since 2014, there has been a decrease in the area of state-owned land leased and, accordingly, a decrease in the number of concluded contracts, which coincides with the introduction of the auction mechanism for leasing land. This trend is most characteristic of Khmelnytsky, Poltava and Zhytomyr regions, which may indicate an increase in the number of state-owned agricultural land leased without proper documentation. At the same time, there was an increase in rent for state-owned land [11].

Table 2

**Structure of lease agreements in agricultural land use, 2018**

Administrative and territorial units	Land lease agreements have been concluded:			the share of contracts concluded with pensioners, %	The share of payments in cash, %
	of the total number of contracts concluded, %				
	with farms where received land (share)	with farms	with other entities market		
Vinnitsia	28,3	14,5	57,2	56,9	15,6
Volyn	26,3	13,7	60	58,6	2,4
Dnepropetrovsk	12,0	23,7	64,3	52,0	24,0
Donetsk	40,5	12,4	47,1	51,2	55,5
Zhytomyr	43,7	8,0	48,3	53,2	23,7

continuation of table 2

Transcarpathian	31,2	27,0	41,8	23,1	29,5
Zaporozhye	42,5	18,6	38,9	49,3	51,0
Ivano-Frankivsk	14,9	14,9	70,2	53,6	20,5
Kyiv	51,9	12,1	36	52,0	17,9
Kirovograd	45,3	24,3	30,4	55,3	34,2
Luhansk	28,7	20,4	50,9	43,9	27,6
Lviv	34,9	17,7	47,4	56,9	30,4
Mykolayivska	28,7	24,2	47,1	44,8	82,3
Odessa	65,8	16,1	18,1	50,6	20,4
Poltava	44,9	11,1	44	52,9	25,9
Rivne	28,7	11,2	60,1	54,7	37,2
Sumy	40,6	8,7	50,7	57,4	17,8
Ternopil	42,5	11,8	45,7	53,4	18,4
Kharkiv	41,9	12,6	45,5	43,3	38,8
Kherson	21,5	15,7	62,8	23,3	9,8
Khmelnytsky	32,2	12,5	55,3	60,1	17,2
Cherkasy	36,5	11,8	51,7	58,1	33,2
Chernivtsi	35,3	14,9	49,8	63,2	8,0
Chernihiv	48,0	7,9	44,1	53,8	33,5
Ukraine	38,2	14,4	47,4	52,4	31,4

It should be noted that since 2000, leases have taken a dominant position in agricultural production, and rents have become an additional lever of social support in rural areas. In 2018, more than 6 million peasants, or 88%, exercise their right to land through leases [18, p. 22-33]. In the structure of agricultural lands of Ukraine, the share of leased lands was 51%, in the North-Western region - 76%. In most cases, lease agreements are concluded with those farms where land shares are received (Table 3).

In the structure of lease agreements during 2000–

2018, the share of concluded agreements with entities registered outside the territory of business activity increased by 34%. This situation is due to the formation of corporate enterprises in agriculture, their increase in land banks. Thus, in 2018, 42% of enterprises in Ukraine carried out economic activities at the expense of investors. In Ukraine, according to public information, there are more than 120 highly commercial formations of the corporate type, which, on lease terms, cultivate more than 7 million hectares of land.

Table 3

### Conclusion of lease agreements and rent for agricultural land in Ukraine

Indicator	Ukraine			Northwestern region		
	2000	2010	2018	2000	2010	2018
<i>The share of concluded lease agreements by entities, %</i>						
With enterprises where received land share	85,2	42,2	34	95,4	49,4	35,2
With farms	4,3	14	14,4	2,7	8,5	12,8
With other entities	10,5	43,8	51,7	1,9	42,1	52
<i>The share of lease agreements for the term of their validity, %</i>						
1–3 years	45,7	10,1	3,1	54,5	22	5,2
4–5 years	41,2	48,9	35,5	42,2	43,2	31,1
6–10 years	11,3	30,6	46,4	2,2	24,2	41,7
Over 10 years	1,8	10,4	15	1,1	10,6	22,0
<i>Payment for rent of land plots and land shares (units)</i>						
The total amount of payments, according to concluded lease agreements, UAH million	1589,3	4547,8	11373,4	37,1	104,3	494,0
<i>Of these, by forms of rent, %</i>						
monetary	13,9	18,9	41,6	17,8	9,6	51,7
natural (agricultural products)	77,4	76,5	55,7	67,7	85,6	47,0
from production	8,7	4,6	2,6	14,5	4,8	1,3

Sources: calculated according to the data [10, 11].

A positive trend during the study period is the reduction of the share of short-term leases, which deprives tenants of incentives for rational land use and maintaining soil fertility.

After amendments to the land legislation on the establishment of the minimum lease term of

agricultural land for agricultural production, farming, personal farming at the level of 7 years (since April 2015), medium-term lease (8-10 years) now prevails. The share of such agreements is at the level of 48.7%. During the study period, there is a positive trend to reduce the number of short-term leases. Instead, the



number of long-term leases (over 10 years) is increasing (19.7%). Longer lease terms allow tenants to invest in improving land, maintaining its fertility and protecting it. However, experience shows that the problems of land use are not solved [19, p. 44-61]

Sociological observations on the state of development of lease relations in Ukraine have revealed a number of problematic issues, namely: 39% of landlords are dissatisfied with the amount of rent; 54% - by the term of settlements; 55% of respondents believe that the prices for products, goods and services provided at the expense of rent are inflated.

The lack of proper state regulation of lease relations does not allow landowners and tenants to enter into long-term agreements, taking into account the interests of each party. According to the respondents, 64% of lease agreements were concluded for up to 5 years, 23% - for up to 2 years. At the same time, it should be noted that in such a short period of land use it is impossible to introduce effective crop rotations, capital improvements of lands, develop land management projects, create the necessary fodder base for the livestock industry [21, p. 45-25].

With the intensification of production is promising long-term lease, enshrined in the relevant regulatory framework. However, only 12% of leased land in the study region is used for a period of 6-10 years, 1% - more than 11 years. At the same time, according to the Law of Ukraine № 191-VIII of February 12, 2015 "On Amendments to Certain Legislative Acts of Ukraine on Simplification of Business Conditions (Deregulation)", the lease term of agricultural land must be at least 7 years [22]. At the same time, this normative act does not solve the issue of preserving the quality of the land plot.

The adopted law on deregulation has significantly reduced the list of mandatory terms of the lease agreement, the parties must agree on only three conditions: the leased object (cadastral number, location and size of the land); the term of the lease agreement; rent indicating its size, indexation, method and conditions of calculations, the order of its payment and revision, liability for non-payment. Insurance of land share owners under leases remains a problematic issue that needs to be further resolved. An appropriate insurance mechanism is required to protect the quality of leased land [25, c. 806-809].

The introduction of insurance protection for land owners and a minimum term of land use should promote the rational use of agricultural land. Similar experience exists in EU member states. For example, France, one of the largest agricultural exporters in Europe, has a nine-year minimum lease term for agricultural land. The principle of encouraging the conclusion of contracts for a longer period is also

widespread, in particular by providing state aid to landowners, which can reach 8,000 euros, as well as reducing the tax burden by reducing the tax rate on income from land lease. The minimum lease term is valid in Belgium (9 years), Spain (5 years) and the Netherlands (6 years) [26, p. 11-17].

Given the above-mentioned European experience, it can be argued that the introduction in Ukraine of a minimum term for land lease agreements is in line with the practice of countries with high efficiency of agricultural production. At the same time, despite the introduced minimum lease term, the party to the agreement reserves the right to terminate it early if the terms of the agreement are violated, using the general rules of civil law. For example, the landlord may terminate the contract early, in case of non-payment of rent under the contract [24, p. 25-31].

According to respondents, 51% of respondents rent for land shares in cash. A significant proportion of respondents confirmed that rent is paid by products (34%) and combined payment (38%). At the same time, tenants and landowners have disputes over the price of natural products, non-compliance with the needs of the landlord and the low level of quality, delays in delivery and inconvenience in delivery. The vast majority of respondents do not use the services of tenants, given the shift method of economic activity of most of them. At the same time, villagers need to be provided with services by technical means, varietal seeds, breeding cattle, a system of machines and plant protection products, veterinary care and services [29, p. 23-32].

The share of lease payments for agricultural products decreased from 76.3% to 58.7%, and the share of payments in cash increased during the same period from 13.9% to 52.4%. Real rent has a steady upward trend, but in part the increase in the value of rent is due to the indexation of the regulatory monetary valuation of land to which the rent is tied. In 2018, for example, the normative monetary valuation of land was indexed by a factor of 1,357 [35, p. 18-22].

The question of the application of methodological approaches to determining the amount of rent for land remains debatable, because it depends on the effectiveness of the lease. Rents are calculated using three methods: market rents, normative and based on monetary valuation, but, to date, the amount of rent should ensure the reproduction of means of production, coverage of production costs, expanded reproduction of production, fulfillment of obligations to the state, repayment loans, development of social infrastructure, contributions to the social insurance fund, etc. [1, p. 4, 6, p. 24], it must not violate the conditions of management on the principle of self-sufficiency, otherwise the essence of the lease itself is lost.

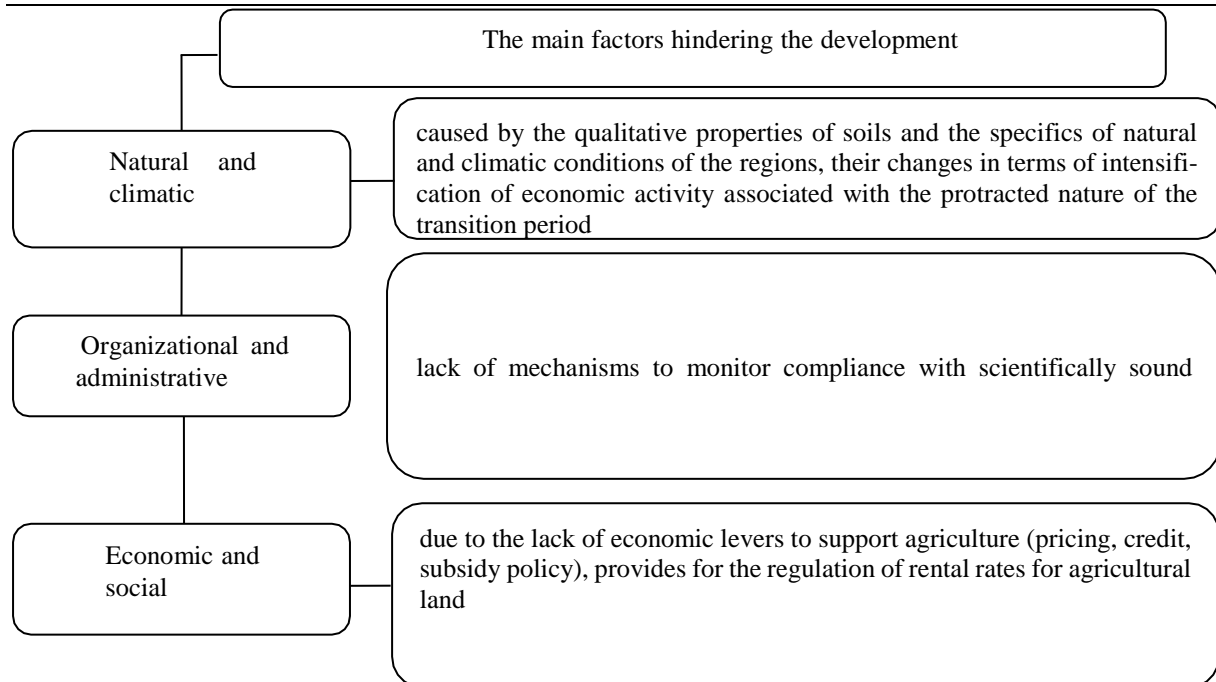


Figure. 1. The main factors hindering the development of lease relations

The current land legislation of Ukraine practically does not contain legal norms aimed at ensuring the rational circulation of the right to lease agricultural land. At the same time, the possibility of pledging land plots and rights to them directly depends on the possibility of their circulation. Because the law does not give tenants the right to alienate the right to lease land on the basis of civil contracts of sale, changes in the law of gift, etc., and the latter do not have the right to use it as collateral for loans from banks. In the process of research, the factors hindering the development of land lease relations are identified. Conditionally, they can be divided into three groups: natural, organizational and economic [37, p. 155-169].

One of the reasons for the lack of a lease bail mechanism is the state of the domestic financial infrastructure.

The amount of rent for privately owned land is set in the lease agreement by agreement of the parties. The Decree of the President of Ukraine "On Additional Measures for Social Protection of Peasants Owners of Land Plots and Land Shares (Units)" as amended on 19.08.2008 recommended the amount of rent - not less than 3% of the value of the land plot determined in accordance with the legislation [19, p. 44-61].

The problem in the land lease market should be the limited access to credit resources due to the lack of credit collateral options, imperfect investment incentives and underdeveloped long-term lease mechanism. Banks are skeptical about the possibility of providing loans to enterprises secured by the right to lease agricultural land due to the low liquidity of this right and the lack of practice of its evaluation. According to the resolution of the National Bank of Ukraine of June 30, 2016 № 351 "Regulations on determining the amount of credit risk by banks for active banking operations" the right to lease land is not considered acceptable security for repayment of loans provided by banks. The National Bank does not even

determine the liquidity ratio of land lease rights [5, p. 6]

In the short term, the right to lease land will not be used as collateral for bank loans. It is unlikely to be used as collateral in the long run due to the fact that the right to lease land depreciates in proportion to the reduction of the term of the lease of land, which constantly expires, and after the moratorium expires will almost lose its value. Given the above, with the existing institutional and infrastructural support of market operations with agricultural land, in the near future the use of the lease as collateral is unlikely [36, p. 7]

A characteristic trend in Ukraine is that the circulation of land lease rights is hidden by alienating the corporate rights of tenant farms or by replacing the tenant in the contract, which makes the lease market opaque and unattractive to the banking sector. The market for agricultural land in Ukraine does not yet exist legally, at the same time the land is actively sold and valued. It is sold together with farms that already have a certain land bank of leased land and, accordingly, the lease rights of this land. Selling the corporate rights of an agricultural enterprise is a fairly common way to buy a company with an established land bank [20, p. 28-37].

The results of the research allow us to state that the further development of leased land relations should be aimed at protecting the rights of landlords. A poll conducted in part in Ukraine showed that farmers are not sufficiently aware of their rights to lease land, and that the passivity and ignorance of the population about their rights is one of the main reasons why tenants fail to fulfill their contractual obligations. In this regard, it is necessary to raise their awareness, intensify the work of legal aid centers and consulting services, to create unions of land owners [31, p. 97-111]

Today, an important mission is to establish public control over the efficient use of land through close

cooperation between unit owners, local governments and tenants through the creation of special commissions that will monitor the quality of the site both when renting it and receiving it from the lessee, will prevent the raider seizure of leased land we will use the received answers. Strengths and weaknesses, opportunities and threats are positioned in the fields of the SWOT-analysis matrix.

According to research, the main problem of SWOT-analysis is a large number of recommended actions, from which the researcher needs to identify those solutions that will help solve the most pressing problems and bring maximum effect, to solve this problem we propose to use the results obtained in the survey as follows: values of all components of SWOT-analysis [23, p. 69-76].

Given the domestic specifics of land relations, namely the significant impact on these processes not only economic and climatic factors, but also political, social and legal, effective for developing a strategy for land relations is the use of PESTEL-analysis - a

marketing tool designed to identify political, economic, social, technological, environmental and legal aspects of the external environment that affect the development of land relations, so PESTEL-analysis is of practical importance for many potential stakeholders, and for business serves as an index of investment attractiveness of cities and districts in land relations in turn, for the public is an indicator of the quality of work of administrative-territorial units in the field of land relations, and for local governments determines the priority areas for improving land relations at the local level [20, p. 28-37].

Political environment. The results of the expert assessment of the impact of the political environment on the development of land relations showed that the most important factors in the 10-point assessment are the following: the level of politicization of land reforms (10); possibility of access to financial resources of small land users (9); currency risks associated with the instability of the hryvnia exchange rate (7); state of use of state lands (6) [7, p. 287-300].

Table 4.

**PESTEL-analysis of land relations development**

PESTEL	Characteristic
P - factors influencing the political environment	availability of a strategy for the development of land relations; the level of politicization of land reforms; availability of a single register of land accounting; possibility of access to financial resources of small land users; available level of technology transfer; state of use of state lands.
E - influencing factors economic environment	availability of unused reserves of agricultural land; the possibility of increasing production volumes; availability of reserves for production intensification; low cost of production; leadership in certain areas of crop production in world markets; experience of corporate enterprises; the ability to present products in many market segments; increasing exports of organic products; consolidation land in terms of high-commodity production; increasing the level of transaction costs in terms of land consolidation.
S - factors influencing the socio-cultural environment	the state of development of infrastructural provision of rural areas; the level of integration links between the subjects of the product chain; existing practice of creating cooperative formations; insufficient number of qualified personnel; the state of advisory support for the development of land relations; the level of readiness of employees for change; lack of land outside settlements at the disposal of territorial communities; reducing the number of workers employed in agriculture.
T - influencing factors technological environment	prospects for the development of organic farming; qualitative characteristics of agricultural products; diversification of agricultural production; obsolescence of the material and technical base of agriculture; development of geoinformation technologies in the field of land relations; introduction of technologies of minimum tillage; formation of a national system of certification of organic products; share of value added products.
E - environmental factors	favorable natural and climatic conditions for agricultural production; significant natural resource potential; contamination of large tracts of land with radionuclides; awareness of the subjects of land relations of the need to adapt to changes in natural and climatic conditions; introduction of new environmentally friendly technologies in agriculture; increasing the use of plant protection products; reduction of land fertility; use of resource-saving technologies; popularization in society of consumption of ecologically safe products.
L - factors influencing the legal environment	state of legal regulation of land relations development; monopolization of lease relations; limited arable land for rent; low level of responsibility of land users for violation of the requirements of scientifically sound management standards; state of normative monetary valuation of lands; raider seizure of agricultural land; excessive influence of the informal institutional environment on the development of land relations; a significant amount of legal documentation on land use regulation.

Economic environment. Changes in the state of the economy at the macro and micro levels are the most important factors that determine the efficiency of the agricultural sector. The results of the expert assessment of the impact of the economic environment on the

development of land relations showed that the most important factors in the 10-point assessment are the following: the availability of reserves for the intensification of production (10); experience of corporate enterprises (9); consolidation of land in the

conditions of high-commodity production (9); increasing exports of organic products (7) [19, p. 44-61].

**Social environment.** Strategic planning is impossible without an analysis of the social component of land use, information on the following factors: migration processes, demographic situation in the country, development of social infrastructure, level of social protection and creating favorable conditions for living and working in rural areas. One important aspect is demographic, as markets are made up of people and their growth potential depends largely on the purchasing power of food consumers.

The results of the expert assessment of the impact of the social environment on the development of land relations showed that the most important factors in the 10-point assessment are the following: the state of development of infrastructure in rural areas (9); lack of land outside settlements at the disposal of territorial communities (9); there is a practice of creating cooperatives (7) [32].

**Technological environment.** The technological factor of the macroenvironment occupies one of the important places among the factors of development of the social situation. Technology is both an internal variable and an external factor. At the same time, we should keep in mind the two opposite effects of STP on rural development: a) the emergence of new technologies and products stimulates the creation of new businesses, industries, which in turn will increase jobs and increase demand solvency; b) the introduction of new technologies leads to increased productivity, the introduction of the shift method of management, the dismissal of workers and to an increase in unemployment. The main purpose of the analysis of the technological environment - the search for tools to intensify production.

The results of the expert assessment of the impact of the technological environment on the development of land relations showed that the most important factors are the following: low share of value-added products (10); obsolescence of the material and technical base of agriculture (9); qualitative characteristics of agricultural products (7) [27, p. 55-60].

**Environment.** Lack of awareness of the close links between current global and local environmental, economic and social problems is a significant obstacle to the implementation of the principles of sustainable development, as evidenced by the lack of basic strategies, plans, programs and inability to assess their practical implementation or content. The results of the expert assessment of the impact of the environment on the development of land relations showed that the most important factors for a 10-point assessment are the following: significant natural resource potential

**Legal environment.** The results of the expert assessment of the impact of the legal environment on the development of land relations suggest that the most important factors are the following: the state of legal regulation of land relations (10); low level of responsibility of land users for violation of the requirements of scientifically sound management standards (9); building a land bank by enterprises with

foreign investment (8) [7, p. 16-23].

The results of studies of strategic vectors of land tenure and land use processes allow us to state that in order to achieve balanced use, protection and reproduction of land potential, taking into account current challenges and in the strategic perspective, it is necessary to improve the system of public administration. In the latest economic conditions. The priority areas of state policy on land relations management are: land use planning, formation and operation of effective cadastres, distribution of managerial powers, public-private partnership. The formation of land management strategy should be in accordance with the principles and criteria of sustainable development, in order to balance the use and reproduction of the potential of land resources to achieve parity of environmental, economic and social components [7, p. 133-150].

**Conclusions.** Thus, today in Ukraine there is an acute problem of rational land use and improving soil quality, as agricultural producers do not adhere to scientifically sound crop rotations, do not apply the required amount of organic fertilizers, grow high-yielding, fast-growing crops, which often deplete the soil, which ultimately leads to strengthening the processes of soil degradation. One of the possible ways to maintain soil quality at the appropriate level is to control their quality.

In particular, when concluding lease agreements and after their completion, it is proposed to determine the quality indicators of soils, soil quality should be determined by the main indicators: humus content, acidity level and the content of essential nutrients. Soil quality control should be carried out every 7 years, so if after the lease the quality of the land has deteriorated, the tenant is given time to restore it, in case of non-compliance with this requirement, he is obliged to reimburse the cost of restoring its fertility. Currently, the main way of using land in agriculture is rent, in the future it is expected that land lease relations will retain a leading role even after the lifting of the moratorium on the purchase and sale of agricultural land. In view of this, the state must guarantee and protect the rights of tenants and landlords. In Ukraine, the actual rent is 3-5% of the regulatory monetary value, the vast majority of agricultural producers enter into lease agreements for a period of 8-10 years. To improve the lease of land relations and prevent the monopolization of the land market, it is necessary to establish a maximum size of land that can be leased to one agricultural producer. It is also necessary to monitor the use of land at least once every 7 years, such control is proposed to be carried out on such indicators as humus content, acidity level and the content of essential nutrients.

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## УПРАВЛЕНИЕ СПРОСОМ НА ЭЛЕКТРОЭНЕРГИЮ КАК ЭФФЕКТИВНЫЙ МЕХАНИЗМ ПОВЫШЕНИЯ ДЕЯТЕЛЬНОСТИ КОМПАНИИ

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## ELECTRICITY DEMAND MANAGEMENT AS AN EFFECTIVE MECHANISM OF INCREASING THE COMPANY'S PERFORMANCE

### **Аннотация.**

*В статье рассматривается применение государственных мер в области энергосбережения с целью повышения энергетической эффективности на примере энергокомпании с помощью управления энергозатратами. Приводится обоснование использования модели спросом на электроэнергию в России на примере организации ПАО «Россети Юг».*

### **Abstract.**

*The article examines the application of state measures in the field of energy conservation in order to increase energy efficiency on the example of an energy company using energy consumption management. The substantiation of the use of the model by the demand for electricity in Russia is given on the example of the organization of PJSC Rosseti Yug.*

**Ключевые слова:** *энергозатраты, агрегатор, «Россети Юг», энергоэффективность, управление спросом на электроэнергию.*

**Keywords:** *energy consumption, aggregator, Rosseti Yug, energy efficiency, electricity demand management.*

Управление спросом на электроэнергию стало востребованным и значимым инструментом регулирования баланса спроса и предложения на рынках электроэнергии во всем мире. Рынок управления спросом на электроэнергию за последние годы остается стабильным и, как ожидается, будет расти в будущем.

В 2019 году в пилотном режиме стартовал новый механизм оказания системных услуг – управление спросом на электрическую энергию. Механизм введен Постановлением Правительства РФ от 20.03.2019 № 287, заключающийся в снижении расходов на электрическую энергию (мощность), а также в получении оплаты за временное снижение потребления электроэнергии.

Пилотный проект стартовал в июне 2019 года. За это время проведено три отбора: в III квартале 2019 года услуги ценозависимого потребления оказывали 20 агрегаторов, объединивших 45 объектов агрегированного управления, в IV квартале 2019 –

19 агрегаторов, объединивших 46 объектов агрегированного управления, в I квартале 2020 – 47 агрегаторов, объединивших 156 объектов агрегированного управления.

Системным оператором Единой энергетической системы (СО ЕЭС) был предоставлен список отобранных компаний – агрегаторов. В рамках проекта предоставляется возможность промышленным потребителям электроэнергии в пиковые часы энергосистемы получить плату за временное снижение электропотребления (не более 1 МВт). Что позволит энергетикам повысить эффективность работы оборудования, не внедрять дополнительные генерирующие мощности, а потребителю – значительно сэкономить. В соответствии с договором потребитель сможет получить денежные средства за снижение потребления мощности. Однако средний доход потребителя будет зависеть от длительности нагрузки и его объема снижения, и составит примерно 500 тысяч рублей за 1 МВт. Главной задачей