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# **Latvia University of Life Sciences and Technologies**

## **Faculty of Economics and Social Development**

### **24<sup>th</sup> International Scientific Conference**

## **ECONOMIC SCIENCE FOR RURAL DEVELOPMENT 2023**

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Latvia**

# **ECONOMIC SCIENCE FOR RURAL DEVELOPMENT**

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International Scientific Conference

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Cooperation, Supply Chains

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## Time schedule of the conference

**Preparation of the proceedings and organization:** January 2023 – May 2023

**Conference:** 10-12 May 2023

Researchers from the following higher education institutions, research institutions, and professional organizations presented their scientific papers at the conference:

Baltic Studies Centre	Latvia
Batumi Shota Rustaveli State University	Georgia
Bila Tserkva National Agrarian University	Ukraine
Celteh Ltd	Latvia
CIRAD (French Agricultural Research Centre for International Development)	France
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Editors, authors, and reviewers, within the International Scientific Conference „**Economic Science for Rural Development**“ are to be fully committed to good publication practice and accept the responsibility for fulfilling the following duties and responsibilities, as set by the *COPE Code of Conduct and Best Practice Guidelines for Journal Editors of the Committee on Publication Ethics (COPE)*.

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## **Foreword**

The international scientific conference „Economic Science for Rural Development“ is organized annually by the Faculty of Economics and Social Development of Latvia University of Life Sciences and Technologies.

The proceedings of the conference are published since 2000.

The scientific papers presented in the conference held on 10–12 May 2023 are published in one thematic volume:

**No 57** Circular Economy: Climate Change, Environmental Aspect, Cooperation, Supply Chains  
Efficiency of Production Process and Competitive of Companies  
Integrated and Sustainable Regional Development  
New Dimensions in the Development of Society  
Rural Development and Entrepreneurship  
Sustainable Bioeconomy

The proceedings contain scientific papers representing not only the science of economics in the diversity of its sub-branches, but also other social sciences (sociology, political science), thus confirming inter-disciplinary development of the contemporary social science.

This year for the first time the conference includes the section on a new emerging kind of economy—bioeconomy. The aim of bioeconomy is to use renewable biological resources in a more sustainable manner. Bioeconomy can also sustain a wide range of public goods, including biodiversity. It can increase competitiveness, enhance Europe's self-reliance and provide jobs and business opportunities.

The Conference Committee and Editorial Board are open to comments and recommendations concerning the preparation of future conference proceedings and organisation of the conference.

## **Acknowledgements**

The Conference Committee and editorial Board are open to comments and recommendations for the development of future conference proceedings and organisation of international scientific conferences.

We would like to thank all the authors, reviewers, members of the Programme Committee and the Editorial Board as well as supporting staff for their contribution organising the conference.

On behalf of the conference organisers

**Anita Auzina**

Professor of Faculty of Economics and Social Development  
Latvia University of Life Sciences and Technologies

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## CONCEPTUAL PRINCIPLES OF ACCOUNTING FOR THE RIGHT TO LEASE A LAND PLOT AS A TYPE OF INTANGIBLE ASSET

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**Abstract.** In Ukraine, land is an important resource for agricultural enterprises. Such enterprises cannot function without land, which is the main means of production. The long history of land reform has led to significant violations in the course of legal relations established since the initial acquisition of ownership of the land plot, the land share (share) so far, including violation of the terms of the moratorium, conclusion of agreements, restricting the right of use of the land plot, non-conformity of the actual boundaries of the land plot with the borders fixed in the documentation on land management etc. The process of adapting existing national accounting standards to the requirements of international accounting standards and international financial reporting standards on the formation of an intangible asset as a land lease right is supported by a number of regulatory legal acts approved by the Government of Ukraine in the recent period. Their effectiveness in extremely difficult conditions (under martial law) is particularly relevant because the use of agricultural land for its intended purposes ensures agricultural production and contributes to the country's economic and food security. The purpose of the study is to substantiate the conceptual basis of accounting for the right to lease a land plot by allocating it as part of intangible assets. The solution of the tasks is achieved by applying general scientific methods (system analysis, generalization) and specific methods of scientific research (economic and statistical, observation, comparison etc.). The subject of the study is the allocation of the object of accounting - the right to lease land as an intangible asset. The article reveals the basic principles of international and national accounting standards of rights to lease land in the intangible assets of business entities. It was noted that Ukrainian legislation (especially those under martial law) has been amended to ensure the targeted use of agricultural land and to avoid food security risks. The process of formation of the object of accounting, in particular the right to lease agricultural land as a type of intangible asset, the criteria for the right to use land parcels, ensuring their inclusion in the composition of intangible assets, have been identified. Emphasis is placed on the need to conduct an audit (legal and technical component) before obtaining rights to land. Thus, the role and functional features of audit in the reliability of providing the legal component of the reflection of intangible assets, in particular the right to lease agricultural land, have been identified.

**Key words:** land, lease, law, intangible assets, accounting, auditing, standards.

**JEL code:** Q24, M40

### Introduction

Ukraine has the largest area of agricultural land in Europe and is endowed with one third of the world's black earth stock. However, the long-standing land moratorium has acted as a disincentive to efficient land use and long-term capital investment that would provide high value added.

Russian aggression and military actions in Ukraine are a brake on the beginning of land reform, which is aimed at buying and selling agricultural land and determining market prices for land, which will promote transparent land use, development of rural areas and provision of public goods to the rural population. The granting of ownership rights to the use of agricultural land and its allocation as intangible assets is a stage in the reform of the accounting system. However, there are several unresolved issues, including at the

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legislative level, regarding the market and rental of agricultural land in Ukraine, which affect the accounting system. The martial law situation poses specific challenges.

The problems of land relations and the leasing of agricultural land are the focus of attention of scientists and legislative changes, but due to the military aggression of Russia and martial law in Ukraine, a number of issues remain that require further research and solutions. According to a number of legislative and regulatory frameworks adopted by the Government of Ukraine, an integral component is an accounting and control system that ensures the reliability of the information component in society.

The purpose of the study is to substantiate the conceptual framework for the accounting of intangible assets by allocating the object of accounting - the right to lease land.

The aim of the study is to highlight the features of the land reform of Ukraine and its impact on the change of ownership of agricultural land; determination of ownership rights for the use of agricultural land and its allocation as objects of account in intangible assets; study of conceptual framework of accounting for land lease rights in accordance with international standards of financial reporting; ensuring the accounting of intangible assets in accordance with the justification of land use rights on criteria (long-term lease, possibility of alienation of the right of lease, reliable assessment) and their legislative establishment.

Theoretical and methodological aspects of the study are based on the study of national and international standards of financial reporting, assessment of legislative and regulatory acts of Ukraine on the use of agricultural land, official statistical materials of the State Statistical Service of Ukraine, as well as scientific publications of foreign and Ukrainian economists and their own research.

The solution of the tasks is achieved by applying general scientific methods (system analysis, generalization) and specific methods of scientific research (economic and statistical, observation, comparison etc.).

The subject of the study is the allocation of the object of accounting - the right to lease land as an intangible asset.

The following the Ukrainian researchers should be highlighted: L. A. Mohylina (2015) described the statistical study of the development of intangible assets in Ukraine and highlighted sources of information; L. A. Tarasenko (2017) conducted an analysis of modern problems of independent audit of intangible assets in order to develop ways of its improvement, taking into account the specifics of the object; Y. M. Hrybovska, L. A. Khodakivska and Zh. A. Kononenko (2021) conducted studies on the improvement of the methodology of formation of the documentation and analytical base of management of intangible assets of enterprises in order to make effective managerial decisions; O. M. Yeremyan (2022) researched the information support of audit of intangible assets and identified perspective directions for quality audit.

Among foreign economists, Mark J. Kohlbeck, Jeffrey R. Cohen and Lori L. Holder-Webb (2009) conducted research to understand and implement procedures related to the auditing of valuation of fair value due to impairment. The unusual intangible asset acquired franchise rights have focused on one of the key aspects - auditing fair market values - a concept that takes on importance as financial accounting standards evolve towards a fair value base and what requires the development of audit judgment; Castilla-Polo, F. & Gallardo-Vázquez D. (2016) in their study presented a report prepared by Accounting for Sustainability (2012), according to which "more than 80% of investors and analysts believe that integrated reporting will bring benefits for their analysis and evaluation of the company," thus the authors believe that the presence and value of intangible assets are important for all types of firms. Visvanathan G. (2017) found that, unlike material assets, intangible assets create unique challenges for auditors in terms of judgment and complexity, auditors charge higher fees to firms with a larger share of intangible assets on the balance sheet. In turn, Robert Keys, Rabin Jogarajan, Eric Lee (2022) have done a research aimed

at facilitating discussion of possible solutions to the information gap perceived in financial statements relating to intangible assets, focusing on exposing unrecognized internally generated intangible assets. Whereas Azamat, K., Galiyab J., Bezhanc, R. & Nurdanad, Z. (2023) presented an approach in which the basis for the company to obtain sustainable competitive advantages is the commercialization of intangible assets, that is, assets that can bring profit to the company. That is why, in order to increase the value of the company, managers need to pay attention and effectively manage business processes and strategically important resources, which include intangible assets.

### **Research results and discussion**

Land is one of the most valuable natural resources of mankind, requiring conservation and care. According to the analysis of information of the Food and Agriculture Organization of the UN, the common world agricultural land resources are distributed as follows: China (11% in the general structure to their entire summary), followed by the United States (8%), Australia (8%), Brazil (6%), the Russian Federation (4%), Kazakhstan (4%), India (4%), and a fairly significant share belongs to Ukraine (1 %).

However, the distribution of countries in the structure of arable land is somewhat different. The largest shares are in India (11%), the US (11%), the Russian Federation (9%), China (8%), Brazil (6%) and Ukraine (2%) (Land market, 2019).

The conducted studies lead to the conclusion that 41.4 million hectares of agricultural land in Ukraine make 19% of the territory of Europe. This is quite a significant part. 32.7 million hectares of arable land of Ukraine - make up 27% of the territory of Europe. The level of land fragmentation in Ukraine is 54%, while in Europe only 35%. This information once again confirms the significant contribution of Ukraine to the food security of Europe and other countries of the world (The state of Ukrainian, 2020).

Ukraine is in the process of reforming the legal regulation of land relations. On 31 March 2020, the Law of Ukraine "On the introduction of amendments to some legislative acts of Ukraine concerning the circulation of agricultural land" entered into force, which outlines the legal basis of the market of agricultural land.

Limited land, the monopoly of land as an object of economic management, the presence of its leases and the state regulation of the land market make it small. In countries with developed market relations, including a developed land market, land sales on average account for 1 to 3 per cent of the land area. In other words, 1 to 3 per cent of land in developed countries is traded annually in modern land markets. In particular, in the US and Ireland - 1.2%. Great Britain, France and Italy - 2.0, Germany, Holland, Belgium - 1.5-2.5, in Denmark - about 4% of the land stock. This is the case in both America and Western Europe (Dankevych A., 2007).

Due to the Russian invasion of Ukraine, the functioning of most state electronic registries, including the State Land Cadastre and the State Register of Proprietary Rights, was suspended for security reasons. And without their functioning, it is impossible to acquire ownership and use land parcels under the procedure provided for in the land and other legislation of Ukraine.

According to the monitoring of land relations, the State Service of Ukraine for Geodesy, Cartography and Cadastre constantly records the process of alienation of land plots, as well as their area and average cost of 1 hectare.

The conducted studies allow us to assert that in the structure of ownership of agricultural lands of Ukraine, in particular: in communal property is 1.7 million hectares, in state ownership is 8.7 million hectares, in private ownership is 31 million hectares (Land market, 2021).

It is worth noting that 110,736 hectares of Ukrainian land are used for agricultural activities by companies with ties to citizens or residents of aggressor countries (Bloody land, 2022). According to the study, 1,284 companies have been identified in Ukraine. Among them, almost 90% of the total area of use (99,281 hectares), in the lease and/or property of the agricultural producers of the country - the aggressor country - Russia - and 10% (11,465 hectares) in the lease and/or property of the agricultural producers of the country - the aggressor of Belarus.

On March 24, 2022, the Verkhovna Rada of Ukraine adopted the Law of Ukraine "On the amendment of some legislative acts of Ukraine on the creation of conditions for food security under martial law" which made it easier for farmers to rent and use land under martial law. The Law has already entered into force. Let's highlight its main components:

- automatic renewal for 1 year of contracts for the use of agricultural plots of all forms of ownership;
- agricultural production of agricultural land plots of state and municipal property by the authorities;
- simplified procedure for the leasing of agricultural plots of agricultural use for State and municipal use for commercial agricultural production by their permanent land users and emphyteuses;
- transfer to lessees and sub-lessees of all forms of ownership of agricultural land for farming;
- new procedure for state registration of land contracts.

The solution of many tasks of functioning of economy of Ukraine during the military period, including agriculture, directly depends on the speed of managerial decisions regarding the provision of land plots for appropriate purpose, land management and land registration.

A rationally organized integrated accounting system will create a single information space (Prodanchuk A., Tripak M. et al., 2021). Land is not a product of the labour process, and, consequently, has no value. Therefore, its assessment and reflection in accounting is one of the most important unsolved issues (Tomchuk O. et al., 2018). The right to lease land is the main asset of the agricultural producer.

However, significant changes in the legislation in the so-called "military law" (2698-IX) were resumed auctions, automatic prolongation, etc. However, these changes have brought us an ambiguous understanding of the rules of law in terms of the need to register so-called "annual contracts". That is, leases were purchased in accordance with Article 2 under section 27 transitional provisions of Land Code "2) during the period when the functioning of the State Land Cadastre is suspended throughout the territory of Ukraine, transfer of agricultural plots of state and municipal property for agricultural production lease for a period of up to one year (except those that are in permanent use by persons not belonging to the state; communal enterprises, institutions, organizations), as well as land plots, remaining in collective ownership of collective agricultural enterprise, agricultural cooperative, agricultural joint stock company, unallocated and unused land plots and land shares (units)" - registration is mandatory not necessary.

Each country has its own history. For example, in France, tenants are protected by law. The land lease is for a minimum of nine years, even if the parties wish to conclude it for a shorter period, they are not entitled to it. There is an important provision in the law protecting the lessee. If the owner of the land wants to sell it, and this land is already used by the lessee, he is the first person to whom the owner of the land should offer to buy it. And if the lessee cannot buy, he may demand that the lease continue and the new owner must agree. At the same time, the owner determines the price of the land and the lessee cannot appeal it (Land Law, 2020). Globalisation processes have resulted in further challenges in the area of accounting and control. Particularly, a number of discrepancies in accounting regulations in different

countries have emerged causing difficulties in communication processes between companies and investors in international agricultural business (Gutsalenko L., Wasilewski M. et.al., 2018).

Since the modern period is a qualitatively new stage in the society development, and accounting in all its aspects is undergoing significant changes, it should accordingly lead to a transition to the new paradigm. Innovative technologies certainly update the revision of the accounting paradigm both in its methodological basis, which has developed over five centuries, and in epistemological aspects. Theoretical and conceptual research of the accounting system in the new environment is needed now more than ever (Spilnyk I., Brukhanskyi R., et.al., 2022).

The state of Ukraine has done the main thing - gave the right to participants of the market of land to own, use, dispose of land as property.

Agricultural production is impossible without the use of land, which is the main asset and supports the livelihood of economic entities.

The importance of the availability of land is whether the land is owned or leased by such an enterprise. A significant part of Ukrainian enterprises in the sphere of agrarian business mainly rent land for conducting their business.

The process of land sales and leases has both legal and economic implications. That is, such economic operations cannot be carried out without reflection in the automated accounting system of the entity. There is often a question of how to properly reflect leasing transactions in accounting, in particular land leases. Article 138 under section 138.43.4 in Tax Code of Ukraine identify 6 groups of intangible assets, in particular group 2 deals with the right to use property, namely the right to use land other than the right to permanent use of land in accordance with the law (Tax Code of Ukraine, 2010). It is therefore reasonable to argue that leasing transactions should be treated as intangible assets.

In most cases, the registration of land parcels affects the balance sheet as fixed assets, in which case the permanent use of the land parcel is implied, that is, the land parcel is directly owned. The existence of a lease agreement for a land plot gives grounds to allocate the right to use, that is, as intangible assets. The right to lease meets all criteria for the recognition of intangible assets, and the land user, in accordance with clause 5 of R(S)A 8, "Intangible assets", having received the right to use the land plot under the lease, shall include it in the accounting of intangible assets in the account 12 "Intangible assets" of sub-account 12.2 "Rights to use property". The rights to use land plots are the subject of accounting as part of intangible assets, subject to the following criteria:

- the lease is long-term (more than 1 year);
- possibility of alienation of the right to lease;
- reliable estimate (Brukhanskyi R. et.al., 2018).

The process of adaptation to the requirements of the International Accounting Standards and EU legislation in Ukraine puts forward further requirements to reporting and information trustworthiness control, which are crucial for management decision-making and increase in investment, aiming at enhancing agricultural business attractiveness (Gutsalenko L., Wasilewski M. et.al., 2018).

The requirements of Accounting Regulation (Standard) 8 "Intangible assets" are brought in accordance with the requirements of the International Financial Reporting Standard for small and medium-sized enterprises accounting for intangible assets, but these changes have not yet taken effect (On approval, 2023).

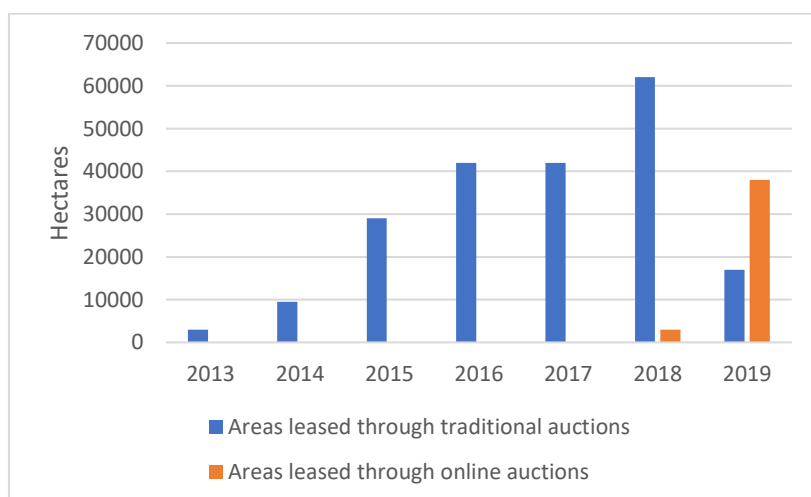
For the purposes of the National Regulation (Standard) of Accounting, the Ministry of Finance has regulated the treatment of permanent use rights of land parcels in Regulation No. 1213, where such rights

are classified as intangible assets. In its explanation, Federation of Professional Accountants and Auditors of Ukraine came to the same conclusion under IFRS: the permanent tenure right is an intangible asset and should be accounted under IAS 38 "Intangible assets" (Taran I., 2020).

IFRS 16 "Rent" sets out the principles of recognition, valuation, presentation and disclosure of the lease. In the case of a lease of land, the user identifies the object as an intangible asset, and the lessor leaves the land on the balance sheet as the main asset.

In case of acquiring the right of permanent use of the land plot, the enterprise receives an intangible asset. At the time of the creation of such a right, the intangible asset is recognized on the balance sheet at cost, taking into account the costs of processing title documents. The right of permanent use of land used by an entity in its economic activities for future economic benefits is an identifiable asset, which is not material in itself. Consequently, under IAS under section 8 and section 10 (IAS)38, such a right falls within the definition of an intangible asset. The same position was taken by the Ministry of Finance of Ukraine in Article 1 under section II of Regulation No. 1213, where it is indicated that the cost of the right of permanent use of land by State and communal enterprises that keep records according to national standards, are reflected in intangible assets (Registration of the right, 2019).

In 2013, mandatory auctions for leasing state land were introduced. After that, approximately 242,000 hectares (2.3% of the total area of state agricultural land) were successfully leased through auctions. Figure 1 shows the dynamics of areas successfully leased at auctions since 2013. Despite the fact that Resolution No. 688 of the Cabinet of Ministers of Ukraine dated on June 21, 2017, online auctions gained popularity only in 2019. Only 4 thousand hectares (185 lots in 84 auctions) were leased through online auctions in 2018, while in 2019 this figure increased to 36.5 thousand hectares (2,050 lots through 1,150 auctions) virtually replacing traditional auctions. With the exception of a few cases, all online auctions were conducted on a web platform developed and provided by the state-owned enterprise "Electronic trading system for seized property" (Figure 1) (Kvartyuk V. et. al., 2020).



Source: authors' construction based on Kvartyuk V. et. al., 2020

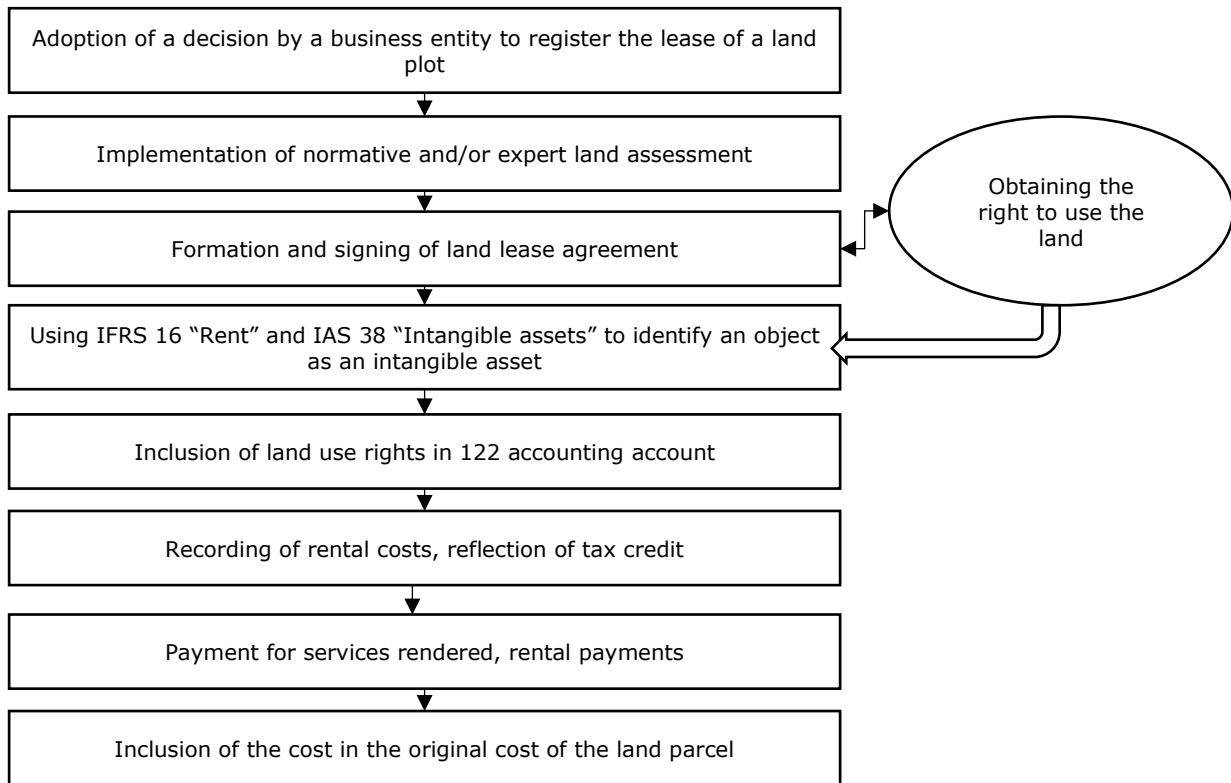
Fig. 1. State agricultural land leased through traditional and online auctions (ha)

In connection with the implementation of decentralization during 2014-2021, local councils issued orders, prescriptions, decrees "On auditing the use of agricultural land". After all, the unification of territorial communities led to the transfer of land from one local authority to another, who were interested in the effective use of agricultural land, the regulation of energy saving issues, housing and utilities and transport. The need for such actions has become the audit of agricultural land parcels from the perspective of rural and village councils, landowners and land users on the basis of data from the State Land Cadastre and the



State Land Register (archive of land management documents, registers of state acts of land ownership, permanent land use rights, land leases), data of the National Cadastral System, cartographic materials, as well as direct field inspections of agricultural plots. As scientists point out "...the lack of properly organized internal control system made it impossible to prevent violations and shortcomings in the financial and economic activities of the institution, which affected its completeness of income generation, the effectiveness of expenses incurred and the formation of financial results" (Antoniuk O. et. al., 2021). Among scientists there is an opinion about the possibilities of using cellular networks, which are the next generation of development of IT technologies and provide information efficiency. (Muravskiy V. et. al., 2022).

Features of forming the right to lease a land parcel as an intangible asset are given in Figure 2.



**Source: authors' construction based on the research results**

**Fig. 2. Formation of the right to lease a land parcel as an intangible asset**

According to the results of the audit, information on owners, tenants, duration of the lease, land area, analysis of the existence of differences between different registers, the purpose and their regulatory monetary assessment was summarized. The results of the audit have streamlined the data on tenants, the area of agricultural land, the appropriateness of land use, identified both administrative and criminal offences. Conducting such an audit has become an effective tool to regulate the land issue in Ukraine.

### **Conclusions, proposals, recommendations**

The authors' conducted studies led to the following conclusions.

- 1) Military actions connected with the military aggression of the Russian Federation have had a significant impact on all spheres of activity of economic entities of Ukraine. Including on the economic activity of enterprises of agrarian business the Government of Ukraine introduced amendments to the legislation on the conduct of land relations under martial law. The structure of agricultural lands of Ukraine was studied and a comparative assessment with other countries was carried out. Legislative

changes have expanded the land market and encouraged investment through long-term leases of agricultural land.

2) The war changed the land relations: the land market opened, but there is little activity there. Meanwhile, the land relations themselves are actively developing. The right to lease agricultural land occupies a special place among them. The Government of Ukraine has adopted a number of legislative acts that provide a legal basis for the use of agricultural land by natural and legal persons and for the preservation of opportunities for the development of market relations. One type of intangible asset is the right to lease land.

3) Allocating the right to use agricultural land as an object of accounting in intangible assets avoids disputes and compliance with international accounting standards and international financial reporting standards. The reliability of data on the legal component of the reflection of the intangible asset in the process of leasing agricultural land is ensured by the functional features of the audit.

4) The lease right meets all the criteria for recognition of intangible assets, and the land user, having received the right to use the land plot for lease, reflects them in the account as part of intangible assets on account 12 "Intangible assets" of sub-account 12.2 "Rights to use property." It is indicated that the criteria for the right to use land plots that are included in intangible assets include: long-term lease (more than 1 year), the possibility of alienation of the right to lease and a reliable assessment.

5) The control function and the need for an audit (legal and technical component) before acquiring rights to land plots are outlined. The role and functional features of the audit in ensuring the legal component and accounting reflection of the right to lease agricultural land as a type of intangible assets.

## Bibliography

1. Antoniuk, O., Koval, N., Savitska, S., Mulyk, Y., Kuzyk, N., & Koshchynets, M. (2021). Development of internal control and audit in Ukraine. *Independent Journal of Management & Production*, 12.(6) pp. 376-390. Retrieved from: <http://www.ijmp.jor.br/index.php/ijmp/article/view/1761>.
2. Azamat, K., Galiyab J., Bezhan, R. & Nurdanad, Z. (2023). The impact of intangible assets on the value of FMCG companies worldwide. *Journal of Innovation & Knowledge*, 8. Retrieved from: <https://www.sciencedirect.com/science/article/pii/S2444569X23000264>
3. Bloody land. 200,000 hectares are cultivated in Ukraine by "Russian mir" (2022). *AgroPortal*. Retrieved from: <https://agroportal.ua/publishing/lichnyi-vzglyad/krivava-zemlya-200-tis-ga-obroblyaye-v-ukrajiniruskij-mi>
4. Brukhanskyi, R., Yazlyuk, B., & Bincharovska, T. (2018). Effective land management in Ukraine using accounting and analytical support. *Problems and Perspectives in Management*, 16(2), pp. 241-251. Retrieved from 10.21511/ppm.16(2).2018.22.
5. Castilla-Polo, F. & Gallardo-Vázquez D., (2016). The main topics of research on disclosures of intangible assets: a critical review. *Accounting, Auditing & Accountability Journal*, Vol. 29(2), pp. 323-356. Retrieved from: <http://dx.doi.org/10.1108/AAAJ-11-2014-1864>
6. Dankevych, A. (2007). World experience of land lease. *Ekonomika APK*, 3, pp. 138-144.
7. Visvanathan, G. (2017). Intangible assets on the balance sheet and audit fees. *International Journal of Disclosure and Governance*, 14, 241-250.
8. Gutsalenko, L., Wasilewski, M., Mulyk, T., Marchuk, U., & Mulyk, Ya. (2018). Accounting control of capital investment management: realities of Ukraine and Poland. *Economic Annals-XXI*, 170(3-4), pp. 79-84. Retrieved from: <https://doi.org/10.21003/ea.V170-14>.
9. Hrybovska, Y., Khodakivska, L. & Kononenko, Z. (2021). Intangible asset management — a component of information support for management. *Ekonomika ta derzhava*, 5, pp. 54–61. DOI: 10.32702/2306-6806.2021.5.54
10. Keys, R., Jogarajan, R., & Lee, E. (2022). Intangible assets: reducing the financial statements information gap through improved disclosures
11. Kvartyuk, V., Herzfeld, T., Martyn, A., Bukinb, E. (2020). Dynamics of agricultural rental prices of state-owned land in Ukraine. *Report on agrarian policy*. 28 p. Retrieved from: [https://apd-ukraine.de/images/2020/APD\\_Berichte\\_2020/01\\_bvvg\\_Rental\\_Price\\_Dynamics/Price\\_dynamics\\_ukr.pdf](https://apd-ukraine.de/images/2020/APD_Berichte_2020/01_bvvg_Rental_Price_Dynamics/Price_dynamics_ukr.pdf)
12. Land Code of Ukraine (2001). Retrieved from: <https://zakon.rada.gov.ua/laws/show/2768-14#Text>.
13. Land Law: how the market in France works and whether Ukraine should adopt its experience (2020). Retrieved from: <https://www.bbc.com/ukrainian/features-51157111>
14. Land market: Ukrainian and world dimensions (2019). Retrieved from: <http://agro-business.com.ua/agro/ekonomichni-hektar/item/14220-rynok-zemli-ukrainskyi-ta-svitovyi-vymiry.html>

15. Land market: what should be known in order to use the right to purchase an agricultural plot of land? (2021). Retrieved from: <https://eba.com.ua/rynok-zemli-shho-slid-znaty-aby-skorystatys-pravom-na-prydbannya-zemelnoyi-dilyanky-silskogospodarskogo-pryznachennya>
16. Kohlbeck, M. J., Cohen, J. R., & Holder-Webb, L. L. (2009). Auditing intangible assets and evaluating fair market value: The case of reacquired franchise rights. *Issues in Accounting Education*, 24(1), 45-61.
17. Mogilina, L.A. (2015). Statistical study of the development of intangible assets in Ukraine. Current trends in the development of accounting, control and analysis of intangible assets: monograph. Sumy: Yaroslavna. 208 p. (pp. 197-208).
18. On approval of the Amendments to some legal acts of the Ministry of Finance of Ukraine on accounting No. 18 dated 12 January 2023. Retrieved from: <https://ips.ligazakon.net/document/RE39227?an=1>.
19. Prodanchuk, M., Tripak, M., Hutsalenko, L., Myskiv, L., & Shevchuk, N. (2021) Organization aspects of the integrated reporting formation. *Financial and credit activities: problems of theory and practice*, 5(40), pp. 110-119. Retrieved from: <https://doi.org/10.18371/fcaptp.v5i40.244906>.
20. Registration of the right of permanent use of the land plot – clarification of the Federation of Professional Accountants and Auditors of Ukraine (2019). Retrieved from: <https://zakon.help/article/zemlya-zemelna-dilyanka-pravo-koristuvannya-pravo?menu=185>.
21. Spilnyk, I., Brukhanskyi, R., Struk, N., Kolesnikova, O., & Sokolenko, L. (2022). Digital accounting: innovative technologies cause a new paradigm. *Independent Journal of Management & Production (Special Edition ISE, S&P)*, 13(3), pp. 215-224. Retrieved from: <https://doi.org/10.14807/ijmp.v13i3.1991>.
22. Taran, I (2020). The right to (non)permanent use of land. *Practice of IFRS*, 1(13). pp. 14-16. Retrieved from: <https://www.pwc.com/ua/en/publications/2020/ifrs-practice-land-life-maintenance.pdf>.
23. Tarasenko, L. O. (2017). The features of intangible assets audit: analytical procedures and inspection. *Ekonomichnyy analiz*. 27(2). pp. 201–208.
24. The state of Ukrainian soils is becoming a problem of the country's ecological security (2020). Retrieved from: <https://superagronom.com/news/9421-stan-ukrayinskih-gruntiv-staye-problemoyu-ekologichnoyi-bezpeki-krayini>
25. The Tax Code of Ukraine (2010). Retrieved from: <https://zakon.rada.gov.ua/laws/show/2755-17#Text>
26. Tomchuk, O., Lepetan, I., Zdyrko, N., & Vasa, L. (2018). Environmental activities of agricultural enterprises: accounting and analytical support. *Economic Annals-XXI*, 169(1-2), pp. 77-83. Retrieved from: <https://doi.org/10.21003/ea.V169-15>.
27. Yeremian, O. M. (2022). Critical assessment of the current state of accounting and audit of intangible assets at enterprises. *Bulletin of the Khmelnytskyi National University* 1. pp. 201-208. Retrieved from: <http://journals.khnu.km.ua/vestnik/?p=11596>.