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**FORMATION OF LAND CAPITAL IN ECONOMIC SCIENCE:  
LESSONS FOR UKRAINE**

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***Abstract.** It has been found that in the current institutional environment land resources are not considered capital in agriculture, and this requires a detailed justification of the mechanisms for their involvement in economic turnover to meet the investment needs of the agricultural sector of the economy. Approaches to understanding the essence of land capital in the current conditions of development of foreign and domestic economic science have been systematised. However, a broad definition of land capital in agriculture has not been provided. The study has confirmed that land plots intended for agricultural use can be considered capital only if they are used for economic activity and generate income or added value. It is emphasised that for the effective market capitalisation of agricultural land as a source of investment for the agricultural sector of the economy, it is necessary to improve the financial and economic mechanism of the process and properly reflect it in the information and analytical system. This system, in modern conditions, will*

*become a tool for accounting and visualisation of spatial information, where indicators will reflect the efficiency or inefficiency of economic operations with land capital. They will serve as a basis for making management decisions, allowing timely and effective response to facts and phenomena. It is noted that a key factor in the capitalisation of land resources is an adequate assessment of their value in agriculture, which corresponds to modern market transformations. A new definition of the concept of "land capital" is proposed. A bibliometric analysis of the status of scientific support for the development of land capital in the world is carried out.*

**Keywords:** *land capital, agricultural sector of the economy, land resources, real capital, natural capital, investment, mortgage, market capitalisation of agricultural land, food security, added value, agricultural land valuation.*

**Problem statement.** The trends of the last two decades have shown that in modern conditions, agricultural land has become a new asset, the volume of investment in which is only growing annually. This indicates the restoration of the historical role of land in wealth creation, a new awareness of its economic nature as a special type of capital - land.

There is no broad definition of land capital in Ukrainian economic science and legislation. In practice, it is declared only in the form of property capital invested directly in the authorised capital of a particular legal entity. As the agricultural sector is one of the key sectors of the economy that ensures the country's food security and is an important source of income for agricultural enterprises, the study of land capital in the context of agriculture is becoming an urgent task that will help to promote understanding of how land resources can be used to ensure sustainable development of the agricultural sector of the economy.

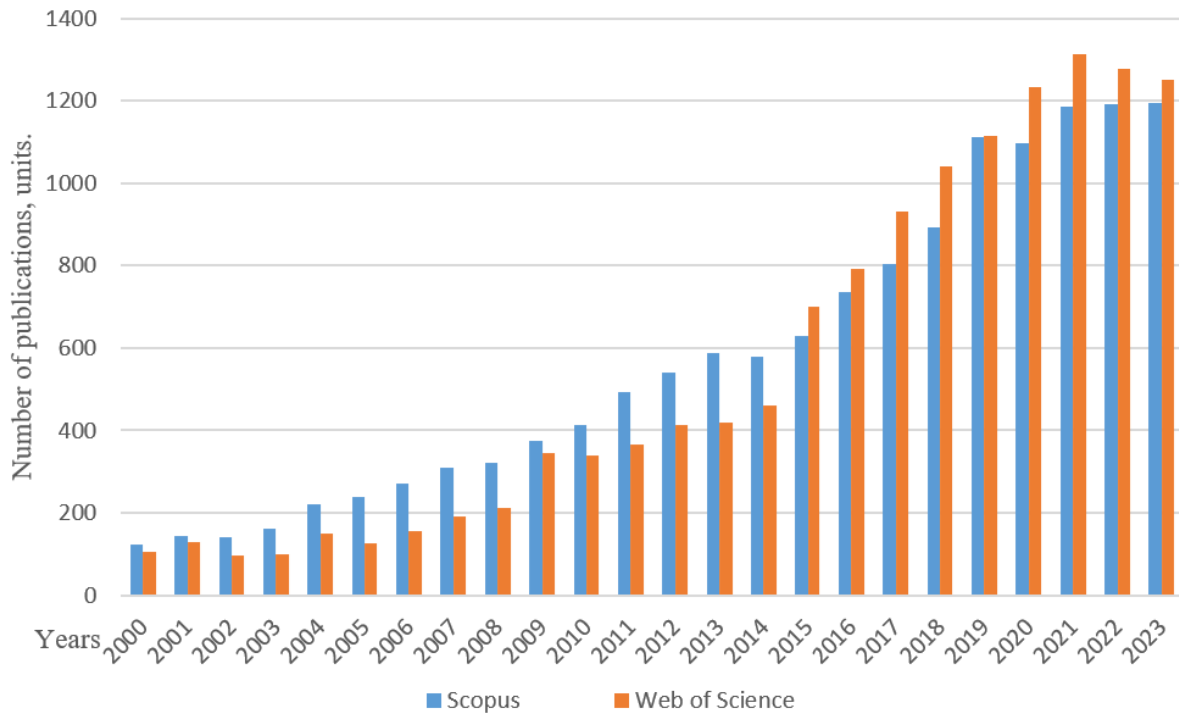
**Analysis of recent research and publications.** The concept of 'land capital' in economic science has been studied by such foreign scholars as: B. Christophers, C. Chen, C. Zhao, D. Zhu and H. Zhang, Y. Jianping, C. Yanjun, M. Kenny-Lazarus, M. D. Guillot and M. Magalhaes, etc.

The following domestic scholars have made a significant contribution to the study and analysis of land capital as an object of investment, accounting, its financial regulation and taxation: A. Tretiak, Y. Dorosh, S. Ibatullin, O. Shkuratov, R. Kuryltsiv, O. Lazareva, L. Boginska, S. Ostapchuk, V. Kriachko, N. Zheleznyak and others.

**The purpose of the study** is to analyse the main scientific approaches of modern scholars to the definition of the concept of 'land capital' with a view to developing a broader and more comprehensive understanding of this term.

**Materials and methods of the study.** In analysing the scientific literature, general scientific methods were used, including: systematic analysis - to study the scientific literature on land capital, taking into account certain analysis criteria, such as the year of publication, research methodology and methods used in the study; critical review - to analyse information on land capital in the agricultural sector of the economy contained in the literature, assessing their reliability, validity and relevance; synthesis and generalisation - based on the analysis of various sources, the author formulated a formula for the development of a comprehensive understanding of the concept of land capital. The bibliometric analysis of the state of scientific support for the development of land capital in the world was also used. The purpose of this part of the study is to present the results of the theoretical analysis of trends, the current state of publication activity and priority areas of land capital research based on data from Scopus and Web of Science databases, in the context of sustainable development, especially in the agricultural sector of Ukraine.

The significant attention and growing interest of scholars in land capital in the world is evidenced by the rapid increase in the number of publications, the highest since 2015 (Fig. 1).

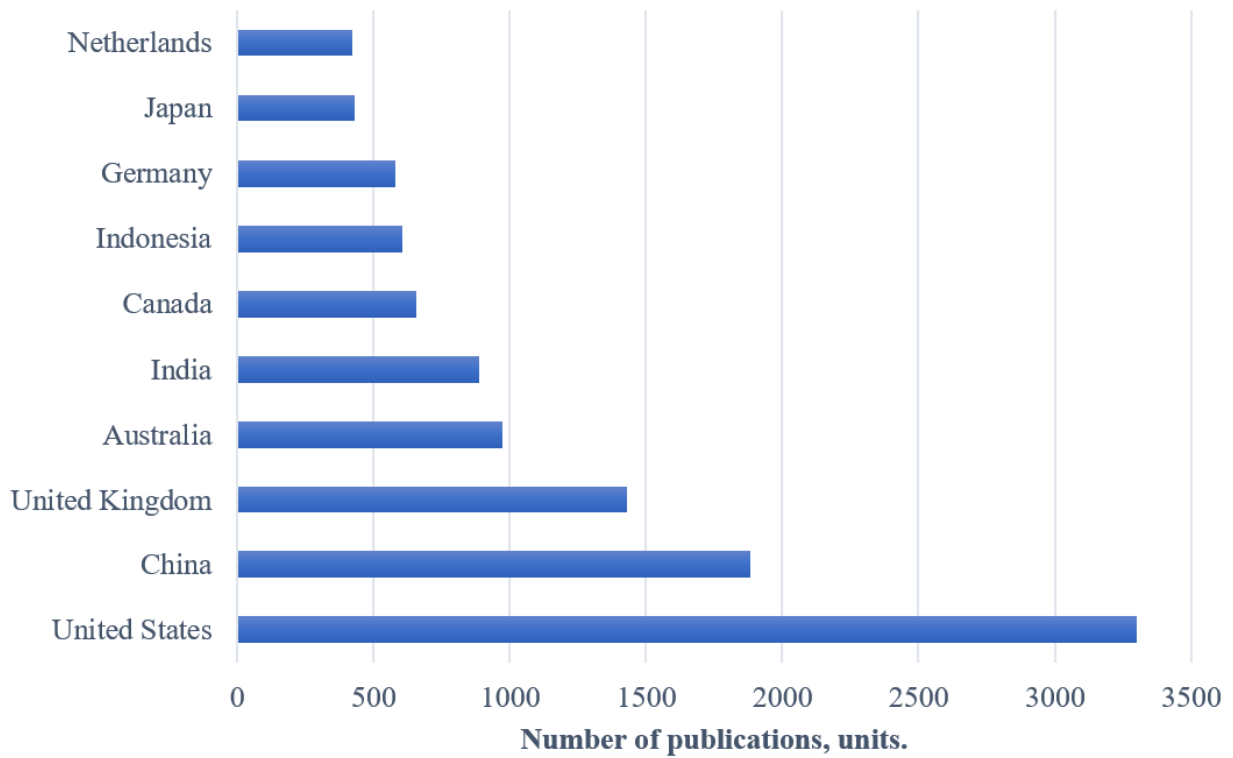


**Figure 1. Dynamics of the number of publications indexed in Scopus and Web of Science that contain the term ‘land capital’ in the title, keywords or abstract**

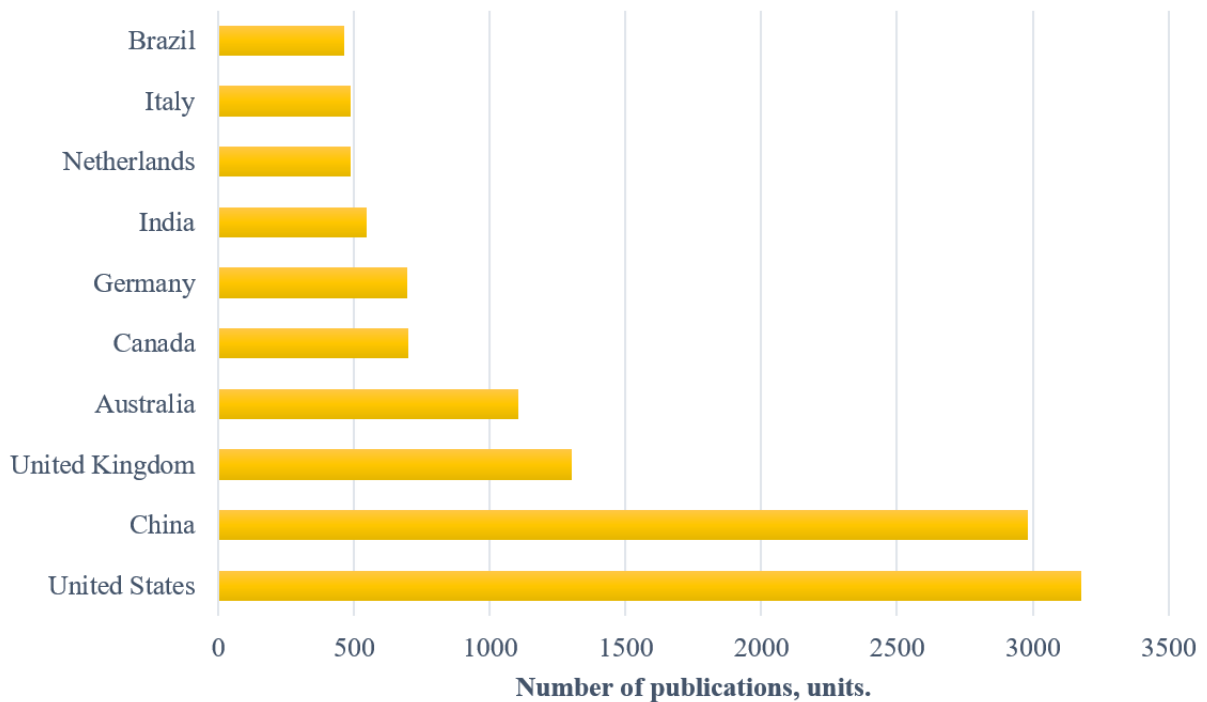
*\*developed by the authors based on data from Scopus and WoS databases*

The results of the study showed that in the period from 2000 to 2023, Scopus and WoS indexed 13,768 and 13,261 documents, respectively, containing the phrase ‘land capital’ in the title, abstract and/or keywords (TITLE-ABS-KEY). In recent years, the number of publications on land capital has been growing at a very high rate, as the curve and trend indicate an exponential increase in publication activity.

It was found that American and Chinese scientists had the largest number of articles on land capital in the analysed databases (Fig. 2).



a)



b)

**Figure 2. Top 10 countries by the number of publications indexed in Scopus (a) and Web of Science (b) containing the term ‘land capital’ in the title, keywords or abstracts for the period 2000-2023.**

*\*developed by the authors based on data from Scopus and WoS databases*

The analysis of the top 10 countries in the world showed three leaders in terms of the number of publications in the period 2000-2023 indexed in Scopus that contain the term 'land capital' in the title, keywords or abstract: United States of America - 3,302, China - 1,883, United Kingdom - 1,432. Similarly, the same countries were the leaders in the Web of Science database by the number of publications: United States of America - 3,178, China - 2,982, United Kingdom - 1,300.

**Research results and discussion.** Understanding the essence of land capital and identifying common ways of solving organisational and economic problems of its formation in the agricultural sector is possible through the analysis of the fundamentals of capital theory. A study of scientific literature shows that capital has been and remains the subject of research by many scientific schools and economic theories, including representatives of the classical school, Marxists, physiocrats, neoclassicals, institutionalists, etc.

For example, representatives of political economy considered land to be one of the key resources used for capital production and should be owned by the state, not individuals. This theory focused on the analysis of the capitalist system and its impact on society, as well as on the analysis of the interaction between capital and labour [1]. Although some of its views may be controversial, it still had a significant impact on the development of economic thought.

However, modern economic theories do not take into account many factors that may affect the agricultural sector of the economy. For example, they do not take into account the influence of political and social factors, as well as technological progress. Classical economic theory is important in the functioning of the agricultural sector, but it is not a complete tool for its analysis. Therefore, it is necessary to note the latest approaches of scientists and economists to understanding the definition of land capital, which includes economic, environmental, social and political factors of today.

In the modern period of public opinion development, economic scientists continue to improve the terminology and expand the definition of the concept of 'land capital'. For example, Brett Christophers considers land as real and financial capital.

Land - as opposed to labour, for example - should serve as the main conceptual vehicle through which geography in a broader sense can be imported into other spatial political and economic thinking. To theorise land as real capital is to link it to value, and thus to labour. The author also notes that capitalism depends on movement, and land can only be fully set in motion as a financial asset. Understanding the implications of land immobility - when it is treated as a financial asset and when it is not - is undoubtedly crucial to coming to terms with its commercialisation [2].

Jian Chen, Jiangmen Zhao, Daolin Zhu, and H. Zhang note that land capital is the most valuable asset for agricultural enterprises and small farmers, as rising land and housing prices increase the mortgage value of land assets and real estate, which in turn increases corporate financing opportunities. As a result, productive investments in the agricultural sector are increasing significantly, which will contribute to higher production volumes [3].

Ye Jianping and Zhao Yanjun believe that land capital is the main asset owned by small and large farms and used to generate rental income. Their main concept is to transfer rights to ensure a more rational allocation of land resources and, consequently, to ensure capitalised income from land plots. However, the income from land capitalisation cannot generate excessive profits, as such a transfer can only affect limited added value after the efficiency of agricultural production is improved [4].

Miles Kenney-Lazarus notes that the transformation of land into capital generally means the creation of economic value from the sale of land, which provides not only profit but also state revenue and economic development. The author argues that land under capitalism is not only an asset that generates rent from which value is extracted. Land can also be seen as a real form of capital, or capitalised, when the social relations associated with it are transformed in such a way as to contribute to the increase in value and act as a storehouse of value mobilised for further investment [5].

Maria Dolores Guillot and Manuela Magalhaes investigated the relationship between natural capital, excluding subsoil assets, and quality-adjusted land resources based on the normalisation of the Enhanced Vegetation Index (EVI). Land capital is an environmental asset that results from the combination of environmental knowledge and quality (EVI-adjusted) land area. The definition of land capital is related to investments in soil, where its qualitative and quantitative aspects are important [6].

In its report ‘The state of agricultural land concentration in the EU: how to facilitate access to land for farmers’ [7], the European Parliament's Committee on Agriculture and Rural Development notes that ‘trade in land capital in agriculture should not be as free as trade in any other capital, since land is non-renewable and irreplaceable and a just legal and social order requires that the public interest in land be taken into account to a much greater extent than in the case of any other property.

Because of its scarcity and non-renewability, land is important not only as a vital resource for the world's food security, but also as the basis for human survival, and should not be treated as a mere commodity. However, when we talk about land as a component of capital, it faces two threats: first, the loss of agricultural land due to various factors such as soil compaction, urbanisation, tourism, infrastructure projects, land use change, deforestation and desertification caused by climate change; and second, the concentration of land ownership in the hands of large agricultural enterprises and non-agricultural investors. In addition, inflated rents are often not related to the potential income of farms, leading to excessively high and risky requirements for land capital, which discourage new farmers’ [7].

In his monograph ‘Land Capital: Theoretical and Methodological Aspects of Formation and Functioning’, Anton Tretiak, a Ukrainian scholar, first defined the essence of land capital in modern conditions. He believes that land capital is ‘a combination of land assets that a person owns or can use in accordance with legal conditions, and which are the result of a combination of natural energy in various forms and human abilities (labour, human intelligence), as well as land improvements and other tangible and intangible wealth (road, engineering, land reclamation



infrastructure, etc.), which is continuously associated with the use of land or a land plot and was previously created by a person in the form of both tangible and intangible assets, resources and information' [8]. The latest approaches to understanding the formation of land capital include consideration of various aspects, such as land ownership, land market, land reforms and land institutions.

Yosyp Dorosh and others proposed the following definition of the concept under study: "land capital, like any other capital, is, first of all, a set of means of production (land resources) used to generate added value by involving them in economic activity. Therefore, the acquisition by land resources of the features of capital that can generate additional income is possible only if they are involved in economic turnover' [9].

Shamil Ibatullin emphasises that 'capitalisation of land resources is determined by such factors as the ratio of supply and demand for land plots, mechanisms of state and market regulation of land relations and their infrastructure, as well as parameters of the functioning of the economic system' [10].

Oleksii Shkuratov et al. believe that 'land resources become land capital when the main purpose and result of their use is to generate added value. Given this, agricultural land has a significant potential for investment in the domestic agricultural sector of the economy' [11].

Roman Kuryltsiv proposed to refer to land capital as 'land plots and land use that are under different ownership rights of a person (group of people) and provide a flow of land (economic, environmental, social) benefits' [12].

In her article, Olena Lazareva outlined her vision of the definition of land capital as 'a special quality, often inherent in organic nature (and fully inorganic), which supports organic life in a favourable environment'. In this context, the relations of distribution of land benefits are defined as the process of establishing the shares or proportions by which the benefits produced on land plots are distributed among land use entities [13].

According to Nataliia Prokopenko and Liudmyla Boginska, land capital is the main type of capital, national wealth and natural heritage of Ukraine and is a key

productive force in the market environment. Land capital has such unique properties that are specific to it and plays such an important role for humanity that it can only be a special kind of commodity. Unlike other commodities, land does not and cannot have a value, as it is not the result of human labour, but it can have a price determined by the relationship between supply and demand [14].

Olena Lemishko notes that land capital in agriculture is the key, basic productive force of the agricultural sector, without which the production process becomes impossible and is the main capital of rural areas [15].

According to Serhii Ostapchuk, agricultural land becomes capital only when it is actively used in the production process. If such land remains unused or is not leased, it does not generate income for the owner. If land granted to an enterprise for use is used in the production of public goods, it generates income. An increase in its market value should be perceived as an increase in value, not as income for the owner, due to the limited land resources and the global food problem [16].

Valentyna Kryachko believes that one of the factors behind the imperfect development of land capital in the agricultural sector and its inefficient use is the neglect of economic principles. First and foremost, it is a failure to comply with the law of value: goods should be sold at prices that reflect the socially necessary labour costs. Reforms in agriculture have brought about a real owner, and assets have become a source of income (capital) through lease mechanisms and the creation of a statutory fund. However, due to legislative restrictions, land cannot be considered a contribution to the statutory fund, and therefore is not considered a source of income and thus remains unaccounted for in the capital structure [17].

As Nataliia Zheleznyak notes, although land is a separate type of capital, its accounting does not correspond to this classification, which leads to distortions in the valuation of enterprises and reporting on their performance. Therefore, the value of agricultural land should be recognised as an integral part of a company's equity. The solution to this issue requires, first of all, the creation of a reliable scientific basis for the regulatory framework governing the methodology and organisation of land capital accounting [18].

Taking into account the advantages and disadvantages of the existing definitions of the concept of 'land capital' and taking into account the peculiarities of the agricultural sector, we propose our own approach to the definition of land capital in agriculture. Land capital is the value of improved land resources that are used as a financial asset to generate added value through their participation in economic turnover and accumulation of funds for further investment in agricultural production. It is also important to note that the effective functioning of land capital in a market economy requires its proper registration, valuation and accounting in a centralised database of the information and analytical system [19]. However, according to practical experience, there are currently no specific approaches to the full accounting and determination of the actual value of land capital.

At present, the value of land is calculated according to the state methodology of expert monetary valuation of land plots, and this indicator is actively used in most cases of transactions, however, its actual price remains an unresolved issue [20, 21]. Therefore, there is a need to clarify the existing methodology of monetary valuation or to create a fundamentally new model of land capital valuation, which will allow managers at various levels to increase the efficiency of decisions on the ownership and use of land resources, promptly identify unscrupulous land users who cause damage to the state by failing to pay for land, and timely anticipate the risks of improper use of land plots.

**Conclusions.** In general, for the successful market capitalisation of agricultural land as a means of securing investments for the agricultural sector of the economy, it is necessary to improve the financial and economic instruments of the process in order to give agricultural land the character of financial assets. A flexible and efficient infrastructure built with the properties of the commodity (land plots) in mind plays a key role in this, especially at the initial stage of market development. Another key factor in the capitalisation of land resources is an adequate assessment of their value in agriculture, which should be in line with current market transformations.

Land capital, as an object of socio-economic relations and various interests defined by economic theory, should be properly accounted for using information and

analytical systems. In modern conditions, these systems should function as tools for collecting, systematising and analysing data on the quantity, quality and state of use of agricultural land. Thanks to such accounting, the indicators will reflect the efficiency or inefficiency of agricultural operations with land capital and will serve as a basis for assessing agricultural land and making management decisions to respond promptly to facts and phenomena expressed in spatial and numerical forms.

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**СТАНОВЛЕННЯ ЗЕМЕЛЬНОГО КАПІТАЛУ В ЕКОНОМІЧНІЙ  
НАУЦІ: УРОКИ ДЛЯ УКРАЇНИ**

***Анотація.** Було встановлено, що у поточних інституційних умовах земельні ресурси не вважаються капіталом у сільському господарстві, і це вимагає докладного обґрунтування механізмів їх залучення до економічного обороту для забезпечення інвестиційних потреб аграрного сектору економіки. Були систематизовані підходи до розуміння сутності земельного капіталу в сучасних умовах розвитку зарубіжної та вітчизняної економічної науки. Проте широкоохоплюючого визначення земельного капіталу в сільському господарстві не було наведено. Дослідження підтвердило, що земельні ділянки, призначені для сільськогосподарського використання, можуть вважатися капіталом лише у випадку, коли вони використовуються для господарської діяльності і приносять дохід або додану вартість. Підкреслено, що для ефективної ринкової капіталізації сільськогосподарських земель, як джерела інвестицій для аграрного сектору економіки, потрібно вдосконалити фінансово-економічний механізм процесу та належним чином відобразити його у інформаційно-аналітичній системі. Ця система, в сучасних умовах, стане інструментом для обліку та візуалізації просторової інформації, де показники стануть відображенням ефективності або неефективності господарських операцій із земельним капіталом. Вони будуть слугувати основою для ухвалення управлінських рішень, дозволяючи вчасно та ефективно реагувати на факти та явища. Зазначено, що ключовим фактором капіталізації земельних ресурсів є адекватна оцінка їх вартості у сільському господарстві, яка відповідає сучасним ринковим трансформаціям. Запропоновано нове визначення поняття «земельний капітал». Проведено бібліометричний аналіз стану наукового забезпечення розвитку земельного капіталу у світі.*

***Ключові слова:** земельний капітал, аграрний сектор економіки, земельні ресурси, реальний капітал, природний капітал, інвестиції, іпотека, ринкова капіталізація сільськогосподарських земель, продовольча безпека, додана вартість, оцінка земель сільськогосподарського призначення.*