



THEORETICAL AND PRACTICAL ASPECTS OF THE DEVELOPMENT OF MODERN SCIENTIFIC RESEARCH

Scientific monograph

Part 1

Riga, Latvia
2022

UDK 001(082)
Th310

Title: Theoretical and practical aspects of the development of modern scientific research

Subtitle: Scientific monograph

Scientific editor and project director: Anita Jankovska

Authors: Yuliia Aleskerova, Volodimir Todosiichuk, Yuliia Aleskerova, Lidiia Fedoryshyna, Oksana Voloshyna, Liubov Gutsalenko, Tetiana Mulyk, Olena Martseniuk, Nadiia Morozova, Yaroslavna Mulyk, Olena Podolianchuk, Vadym Puhalskyi, Olena Tomchuk, Viktor Tomchuk, Nataliya Boyko, Iryna Bondarenko, Andrii Sohor, Volodymyr Yuzevych, Bohdan Koman

Publisher: Publishing House “Baltija Publishing”, Riga, Latvia

Available from: <http://www.baltijapublishing.lv/omp/index.php/bp/catalog/book/214>

Year of issue: 2022

All rights reserved. No part of this book may be reprinted or reproduced or utilized in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publisher and author.

Theoretical and practical aspects of the development of modern scientific research: Scientific monograph. Part 1. Riga, Latvia: Baltija Publishing, 2022. 400 p.

ISBN: 978-9934-26-195-4

DOI: <https://doi.org/10.30525/978-9934-26-195-4>

The scientific monograph presents the theoretical and practical aspects of the development of modern scientific research. General questions of economics and enterprise management, regional economics, marketing, technical sciences, technology of food and light industry, and so on are considered. The publication is intended for scientists, educators, graduate and undergraduate students, as well as a general audience.

Table of Contents

CHAPTER «ECONOMIC SCIENCES»

Yuliia Aleskerova, Volodimir Todosiichuk

PLANNING AND FORECASTING
OF FINANCIAL ACTIVITIES IN OSCHADBANK 1

Yuliia Aleskerova, Lidiia Fedoryshyna

TOURISM INSURANCE MANAGEMENT 39

Oksana Voloshyna

METHODS OF BANKRUPTCY PREDICTION
AT THE ENTERPRISES UNDER CONDITIONS OF QUARANTINE
RESTRICTIONS DUE TO THE COVID-19 PANDEMIC 72

Liubov Gutsalenko, Tetiana Mulyk

ANALYTICAL PROVISION
OF LAND RESOURCES MANAGEMENT
OF THE ENTERPRISE: STATE AND IMPROVEMENT 105

Olena Martseniuk

CURRENT TRENDS AND PROBLEMS
OF THE MARKET OF CIVIL LIABILITY INSURANCE
OF VEHICLE OWNERS AND WAYS TO SOLVE IT. 129

Nadiia Morozova

MODELS OF ANALYSIS AND ASSESSMENT
OF SOCIO-ECONOMIC DEVELOPMENT
OF THE COUNTRIES OF THE EUROPEAN UNION 159

Yaroslavna Mulyk

ORGANIZATION AND IMPROVEMENT OF INTERNAL AUDIT
IN THE ENTERPRISE MANAGEMENT SYSTEM 198

Olena Podolianchuk

ACCOUNTING AND TAXATION
OF THE ACTIVITY RESULTS OF ENTERPRISES 222

Vadym Puhalskyi

THE NECESSITY OF ORIGIN, ECONOMIC CONTENT
AND THE ESSENCE OF TAX CONTROL 244

Table of Contents

Olena Tomchuk, Viktor Tomchuk

- ANALYTICAL TOOLS OF FINANCIAL RESULTS
IN THE CONDITIONS OF RISK-ORIENTED MANAGEMENT 272

CHAPTER «ENGINEERING SCIENCES»

Nataliya Boyko

- PROCESSING AND STORAGE OF DIFFERENT DATA
WITH THE HELP OF BI-TECHNOLOGIES 301

Iryna Bondarenko

- ADVANTAGES OF APPLYING ELASTIC WAVES THEORY
IN SOLVING DYNAMIC PROBLEMS 328

Andrii Sohor

- A PRIORI RESEARCH RELATED
TO THE CALCULATION OF THE REGIONAL ELLIPSOID
FOR UKRAINE AND ITS EFFECTIVENESS 353

Volodymyr Yuzevych, Bohdan Koman

- MATHEMATICAL AND COMPUTER MODELING
OF INTERPHASE INTERACTION
IN HETEROGENEOUS SOLID STRUCTURES 375

ANALYTICAL PROVISION OF LAND RESOURCES MANAGEMENT OF THE ENTERPRISE: STATE AND IMPROVEMENT

Liubov Gutsalenko¹

Tetiana Mulyk²

DOI: <https://doi.org/10.30525/978-9934-26-195-4-4>

Abstract. The purpose of the paper are issues concerning to the analytical provision of land resources. *The methodological* basis of the study are general scientific and special methods of phenomena cognition and processes in the system of analytical support of land management. The study of the current state of land relations, classification of land resources is based on the use of methods of theoretical generalization, grouping and analogy. Methods of comparison, analysis and synthesis were used to prepare proposals for improving the analytical support of land management. *Results.* The composition and structure of Ukraine's land resources, their place in Europe, property relations and land use were evaluated in the course of research. It is determined that the land area of Ukraine as of 01.01.2020 according to the State Service of Ukraine for Geodesy, Cartography and Cadastre is 60.3 million hectares. The system of views on land resources as an object of analysis, tasks and purpose of analysis, sequence of analytical operations and procedures aimed at preparing for analysis, analytical data processing and generalization of analytical information are identified and formulated. The main sources of information for the analysis of land resources of agricultural enterprises are primary documents, synthetic and analytical data. Their combination in the process of analytical procedures will increase the value of information and management decisions made on its basis. The system of indicators of land resources analysis is considered. Particular attention is paid to indicators to assess the level of intensity of use and indicators that characterize the efficiency of land use. Analyzing the set of indicators

¹ D.Sc. (Economics), Professor, Head of the Department of Accounting and Taxation, National University of Life and Environmental Sciences of Ukraine, Ukraine

² Ph.D. (Economics), Associate Professor, Department of Analysis and Audit, Vinnytsia National Agrarian University, Ukraine

that characterize the state of land resources of agricultural enterprises, it is emphasized the lack of a single methodology and uniform forms of documents to ensure a complete and comprehensive study of land resources. To eliminate this problem, a holistic methodological apparatus is proposed, in which the stages of analytical work are coordinated (obtaining, processing and analyzing information), sources and channels of information, as well as tools, methods, techniques of analysis that allow to obtain appropriate results. An important aspect that contributes to the effectiveness of such work is the choice of rational approaches and methods in accordance with the objects and needs of the analysis. SWOT-analysis of agricultural land use development is presented. Based on the SWOT analysis, it can be seen that development strategies in land use should be aimed at highly efficient use of land resources, to reproduce their fertility. Due to this, high yields of crops will be obtained with minimal costs per unit of output and preservation of productive properties of land. It is stated that it is necessary to anticipate ecological and economic responsibility of landowners and land users for deterioration of soil quality parameters, combination of public and private interests for sustainable land production, use of land resources taking into account community interests, prevision of measures to restore land productivity. *Practical implication* is the scientific validity and applied orientation of the provisions, approaches and recommendations given in this study, the use of which will improve the organizational and methodological foundations of the analysis of land resources. *Value/originality*. The use of SWOT analysis in the practice of land management entities, on the one hand, will help eliminate the weaknesses of land use while strengthening its strengths, on the other hand, will fully provide opportunities to take advantage of opportunities that may arise due to action of external factors avoiding threats. SWOT analysis has a significant impact on strategic management decisions aimed at the formation of rational agricultural land use.

1. Introduction

In modern economic conditions, information on the natural, legal and economic condition of the lands of Ukraine as the main national wealth of the people becomes important. Relevant information on land is necessary for further regulation of land relations, ensuring the rational use, restoration and protection of land, determining the amount of payment for land and its

value in natural resources, control over land use and protection, economic and environmental justification of business plans and land management projects.

The specifics of recognition and use of land resources as an economic category causes peculiarities in the construction of the accounting system, which requires a competent construction of the accounting policy of the enterprise in terms of reforming land relations in Ukraine. More than a third of agricultural land is used by state enterprises, so there is an urgent need for land accounting, the ability to accurately assess their value, elimination of abuses in land lease or use rights, the organization of effective and qualitative analysis of land resources.

A significant contribution to the formation of theoretical, organizational and methodological provisions of accounting and analysis of land resources was made by such domestic scientists and researchers as: S.M. Belinska, O.M. Bradul, B.S. Huzar, M.Ia. Dem'ianenko, I.V. Zamula, V.M. Zhuk, O.V. Ilchak, H.H. Kireitsev, A.S. Krutova, N.M. Maliuha, T.V. Mashkova, T.P. Ostapchuk, S.M. Ostapchuk, P.T. Sabluk, E.O. Sysak, L.K. Suk, V.K. Savchuk, I.D. Lazaryshyna, T.O. Mulyk and others. However, the problematic issues of development of accounting and analytical support of economic relations in the field of land use, which remained unnoticed by these scientists, need their solution in order to develop a comprehensive system of accounting and analysis of land resources in terms of resource conservation.

The purpose of this study is to summarize the theoretical and practical aspects of the current system of analytical support for land management. The following tasks were solved in the course of the research: characteristics of land resources of Ukraine, assessment of the organization and methods of land resources analysis, determination of land use development strategy based on SWOT-analysis.

The methodological basis of the study are general and special methods of cognition of phenomena and processes in the system of analytical support of land management. The study of the current state of land relations, classification of land resources is based on the use of methods of theoretical generalization, grouping and analogy. Methods of comparison, analysis and synthesis were used to prepare proposals for improving the analytical support of land management.

2. General data on Ukraine's land

Land resources are an important component of the resource potential of agricultural formation, which in addition to land includes labor resources, fixed and current assets, etc. The available resource potential, its qualitative properties and rational combination in the process of economic activity are the initial prerequisite for the production of competitive products. In addition, on the basis of its use, the food, production, export, natural resources and infrastructure bases of balanced socio-economic development of the country are formed [1].

For the Ukrainian people, land has always been of great value. The importance of the earth is evidenced by the fact that it is not a product of human labor, but created by nature, and therefore at the request of man cannot increase its reserves. That is why the Constitution of Ukraine (Article 14), the Land Code of Ukraine (Article 1), the Civil Code of Ukraine (Article 373) states that land is the main national wealth and is under special protection of the state.

As of January 1, 2020, the land area of Ukraine according to the State Service of Ukraine for Geodesy, Cartography and Cadastre is 60.3 million hectares (Figure 1).

Among them: 1) agricultural lands occupied 41,310.9 thousand hectares or 68.5% of the total area of the country, including: a) arable land – 54.2% of the total area of the country or 79.1% of the area agricultural lands; b) hayfields – respectively, 3.8 and 5.5%; c) pastures – 8.8 and 12.8%; d) perennial plantings – 1.4 and 2.1%; e) fallows – 0.3% of the total area of the country or 0.5% of the area of agricultural land; 2) forests and other wooded areas – 10,686.8 thousand hectares (17.7%); 3) built-up lands – 3,767.5 thousand hectares (6.2%); 4) land under water – 2,415.4 thousand hectares (4.0%); 5) open wetlands – 973.8 thousand hectares (1.6%); 6) other lands – 1,200.5 thousand hectares (2.0%).

As evidenced by the data presented in Figure 1. Currently, Ukrainians cultivate about a third of the arable land in Europe, or 32.7 million hectares. Also, one inhabitant of Ukraine in the statistics has twice as much as one European.

As evidenced by the data presented in Figure 2, in the structure of land ownership the main amount of land is privately owned, it is about 31 million hectares, in state and municipal ownership are 10.4 million hectares. At the same time, about a third of the land, 32.7 million hectares is under arable land.

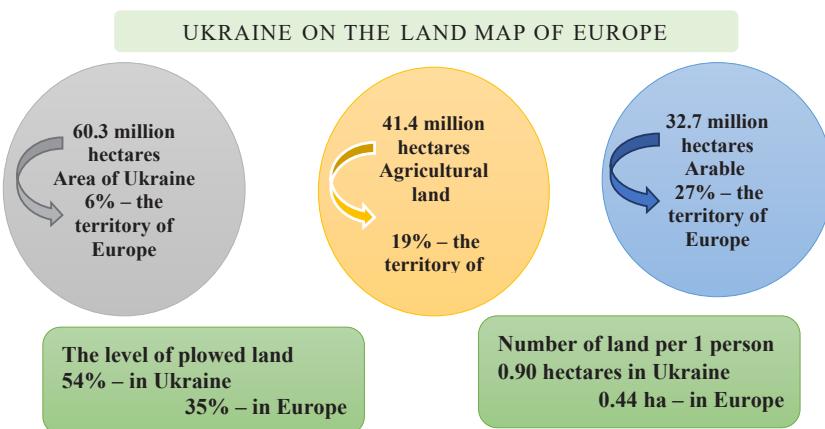


Figure 1. Ukraine on the land map of Europe

Source: formed on [3]

3. The order of organization and methods of analysis of land resources

In the economic literature, many concepts are used regarding the evaluation and monitoring of the enterprise, which facilitate the adoption of various management decisions. Namely, the terms “analysis”, “analytics”, “analytical activities”, “analytical work”, “analytical support”, etc. are used [4].

In the economic literature, many concepts are used regarding the evaluation and monitoring of the enterprise, which facilitate the adoption of various management decisions. Namely, the terms “analysis”, “analytics”, “analytical activities”, “analytical work”, “analytical support”, etc. are used [5].

The issue of organizing and ensuring a comprehensive analysis of land resources in agricultural enterprises is an important topical issue, the importance of which is growing in the context of land reform. Accordingly, the analysis of land resources requires the development of thorough methodological support aimed at systematizing the data sets required for use in the analysis process, as well as the use of appropriate methods and techniques aimed at providing this information the necessary form [6].

Unfortunately, currently there is a rather low organizational and methodological of its implementation, in particular:

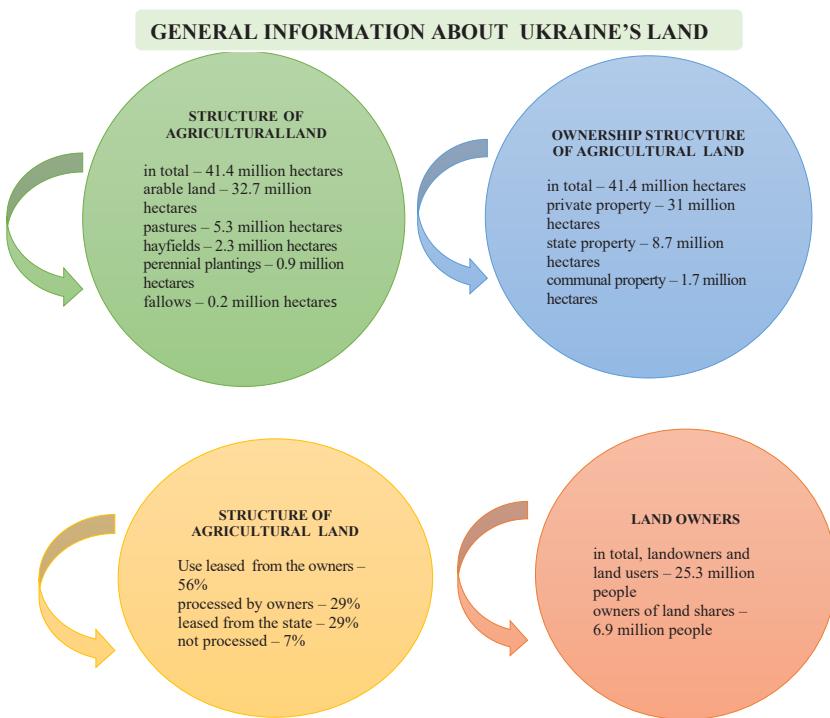


Figure 2. General data on Ukraine's land

Source: formed on [3]

- analysis of land use and production of agricultural products in farms of all forms of ownership is conducted according to the annual accounting and statistical reporting. Orientation in analytical activities on the materials of such reporting does not contribute to its effectiveness, because it makes it impossible to influence the results of activities;
- the analysis of land use is of a generalizing nature, is conducted without taking into account the economic and qualitative characteristics [quality] of soils;
- there are no methods of analysis of the land use efficiency in newly created forms of farms, existing (for large farms) are not suitable for this purpose;

- there is no long-term analysis of the transformation of land, the level of their fertility in order to determine the strategy of agricultural enterprises at all levels of government and choose the most optimal ways to ensure the required volume of production and quality of crop products;
- there is no operational analysis of the consumption of energy, material and labor costs for the production of agricultural products;
- insufficient level of use of advanced express methods and computer equipment in assessing the efficiency of land use and agricultural production.

The problem of organizing a comprehensive analysis of land resources has quite thorough methodological support, which is at the intersection of interests of different scientific fields and areas. However, the main problem of ensuring efficient and rational use of land resources in agricultural production is complex and consists in the absence of a clear information system of research and notification of subjects of land relations, shadowing of land relations in much of the land market, as well as lack of a holistic balanced system of economic analysis, able to provide the management staff of enterprises with relevant information of appropriate volume and content in accordance with the production and management tasks facing enterprises today. Accordingly, we agree with the opinion of T. Ostapchuk that “today there is no single, sufficient and effective methodology for analyzing the use of land resources of enterprises” [7].

The expediency of finding ways and methods to improve their accounting and management is due to the identification of land resources from the standpoint of their limitation. Herewith, an important task is to assess the dynamics of land resources and structures that can contribute to a better understanding of land use processes, formulating their impact on the performance results of economic entities and finding reserves to improve economic indicators.

Tasks of land resources analysis are as follows [8]:

- study of the composition and structure of land;
- detection of violations in land use;
- identification of reserves for expansion and improvement of land;
- assessment of the efficiency of land use and development of measures aimed at its improvement.

The purpose of the analysis [8]:

– comprehensively promote the fullest and most efficient use of land while constantly increasing natural fertility and preventing damage to the environment.

The most important components of the analysis of land use are [8]:

– determining their composition, size and structure and ways to improve them;

– study of the degree of use of arable land and justification of their expansion (reduction), the availability of scientifically sound crop rotations and the level of their development;

– determining the efficiency of land use and opportunities to improve it.

The formation of a methodological basis for the analysis and balancing of the system of land use indicators requires, above all, a comprehensive understanding of the object of study in all its manifestations. Diverse and equitable research of land resources creates additional opportunities for the formation of a fundamentally new vision of the problem. The basis for this technique is laid through a clear identification and structuring of the object of study. In our case, the main category – land resources, should be studied as a system that can be considered from such positions as [6]: the object of circulation; object of use; object of management; object of economic regulation (Figure 3).

The considered structuring of views on land resources as an object of analysis reveals the subsystems and areas that need research and within which reserves can be formed to improve both the resources themselves and their management systems. Herewith each of these subsystems and areas can be detailed at a lower level of knowledge, according to which, the overall purpose of the analysis of land resources needs to be specified in the form of clearly defined and structured tasks [6].

Achieving the goal of the study and solving its problems involves purposeful work, which is primarily associated with the formation of a comprehensive system of indicators. The importance of systematization in this aspect is quite accurately described by G. Andreeva and V. Andreeva, who, emphasizing the importance of the interdependence of indicators that reflect economic processes, argue the need "...that specific data in different activities were organically linked between itself in a single integrated system" [9]. O. Hutorov speaks in a similar way, noting that "the efficiency of land use cannot be characterized by any one indicator, as the process of

use land is multifaceted, determined by many natural and economic factors. In this regard a system of indicators is needed [10].

I.S. Kozubenko and D.V. Dudnik propose to use a methodology based on the use of effective indicators of efficiency and intensification of agricultural land use, which should include: natural indicators of intensification, which characterize the yield per unit of land area; natural indicators that characterize the growth of production over a period of time per unit area; economic indicators that characterize the ratio of the value of gross output from 1 hectare of land to fixed assets of the organization; economic indicators that characterize the cost of production; economic indicators that characterize the output of gross and net income per hectare of agricultural land, etc.; economic indicators that characterize the ratio of gross output per 1 ha to costs per 1 ha [11].

Based on the conducted research and generalizations, the lack of a unified approach to the formation of such a system of indicators was revealed. In most scientific papers there was a different vision not only of the set of indicators and their content, but also their different classifications and characteristics. Therefore, based on the developed sources, we propose a system of indicators of land resources analysis, formed on the basis of their impact on the object of study (Figure 5). In most of the studied scientific works there was a different vision not only of the set of indicators and their content, but also of their different classification and characteristics.

The structuring of indicators is based on the nature and methods of obtaining indicators. Thus, the indicators that characterize the structure reflect the amount of land resources and their structure in various respects relative to the general level. At the same time, they can acquire the state of quantitative, relative and cost indicators. To the same group we have included indicators of land use intensity and land supply [6].

Indicators that characterize productivity reflect the ratio of output per unit area. Herewith, some indicators of this group can be expressed through natural, and some – through variant values. Indicators that characterize efficiency include a comparison of the results obtained through the use of land resources and costs incurred. They can acquire absolute and relative values. The last group of indicators characterizes the sustainability of land use, which is revealed through environmental aspects, soil quality and rational use of nature. It contains absolute, relative and qualitative indicators [6].

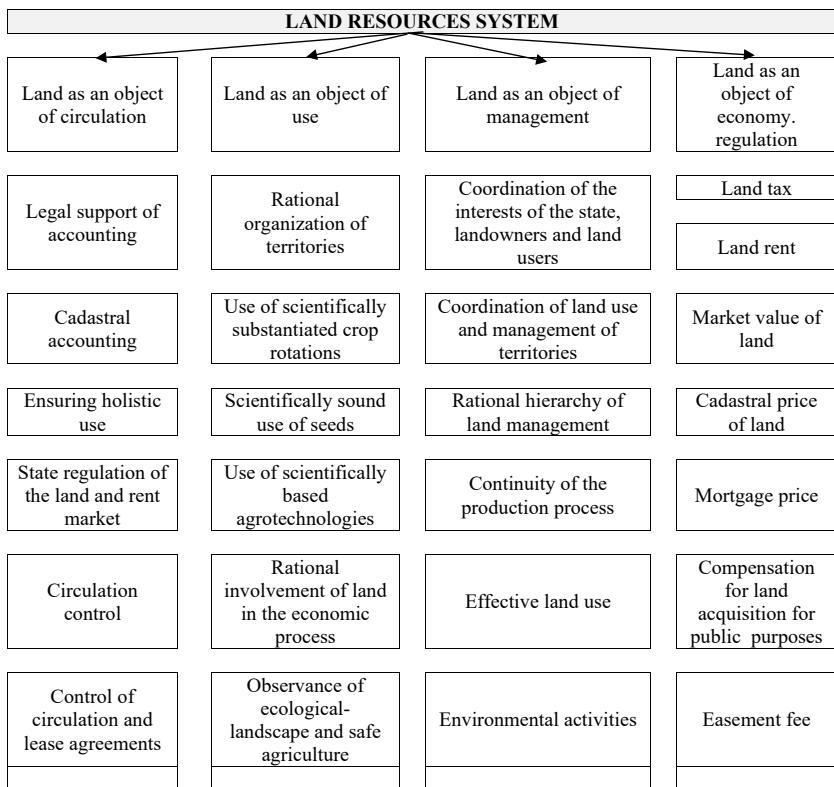


Figure 3. The system of views on land resources as an object of analysis

Source: [6]

Note that in many scientific sources [7; 15] indicators of land productivity are not allocated to a separate group. The obtained results of economic activity, based on a certain area are characterized as an indicator of efficiency (for example, the volume of gross output per 100 hectares, etc.). Moreover, Belinska S.M. believes that productivity is one of the manifestations of efficiency and characterizes its relative importance [15]. At the same time, she emphasizes the need to apply a productivity indicator in relation to resources that have a limited market position. Accordingly,

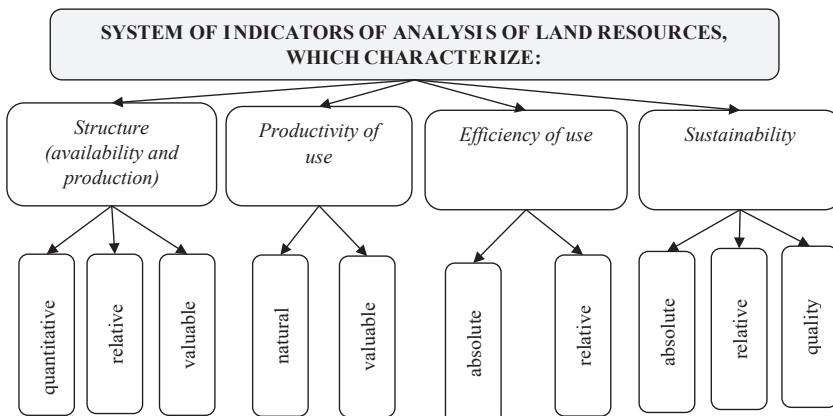


Figure 4. The structure of indicators of land resources analysis

Source: systematized on the basis of [10; 12; 13; 14]

it is proposed to logically distinguish between productivity and efficiency of land use. Herewith, productivity is calculated as the volume of return of land resources per unit area, and efficiency – as the ratio of the result obtained per unit area to the amount of cost of tangible and social labor [15].

We believe that the level of land use intensity should be determined by the following indicators (Figure 5).

When analyzing and evaluating these indicators, it should be remembered that due to the transformation of land and improving their structure, increasing (decreasing) the share of arable land, perennial cultural plantations and reclaimed lands in the total area of agricultural land, and intensive crops – in the structure of crops, increasing the reuse rate of land to optimal levels of the company's ability to increase production (other things being equal) will increase. But here it is important not to go beyond the rational limits of each of these indicators, as this may lead to deterioration of land use, loss of its fertility. For example, excessive plowing of agricultural lands in many farms has led to the intensive development of wind and water erosion with all the corresponding negative consequences [16]. living and tangible work, the effectiveness of selection, etc.

There are the following types of land use efficiency: technological, economic, social, environmental (Table 1).

*Indicators for assessing the level of intensity
use of land resources*

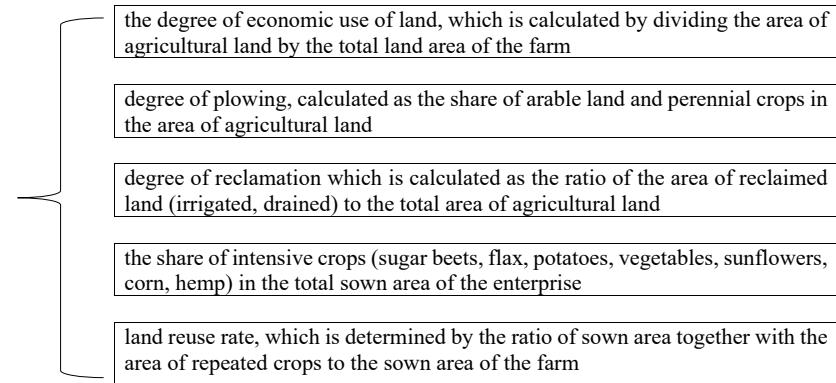


Figure 5. Indicators for assessing the level of land use intensity

Source: formed by the author based on [13]

Table 1
Indicators characterizing the land use efficiency

Types of efficiency	Indicators studied during the analysis
Technological	yield, yield of certain types of crop and livestock products per unit area of relevant land (production of milk, meat of all types per 100 hectares of agricultural land; production of grain, pork per 100 hectares of arable land), feed production (in quintals of feed units)) per 100 hectares this year lands.
Economic	gross output, cash receipts, profit from sales of agricultural products per 100 hectares of agricultural lands.
Social	the level of payment of the company's employees; the amount of wages per 1 ha of agricultural lands; rent for land share, its relation to the monetary valuation of land; timeliness of settlements with landlords.
Ecological	production of ecologically clean products, dynamics of humus content, harmful substances in the soil, prevention of erosion processes, rates of restoration of natural soil fertility, etc.

Source: formed by the author based on [13]

When assessing economic efficiency rely on:

- natural and cost indicators (Table 1).

Natural indicators include:

- crop yields;

– production of certain types of livestock products per 100 hectares of relevant land (livestock and sheep products are expected per 100 hectares of agricultural land, pigs – on arable land, poultry – on the area of cereals),

- yield in fodder units from 1 ha of individual lands

- density of cattle, per 100 ha. [16].

The cost indicators include:

- gross output;

– production of marketable products (separately crop, livestock products);

- net income per 1 ha (per 100 ha) of agricultural land;

- profit per 1 ha (per 100 ha) of agricultural land [13].

The analysis of land use efficiency indicators should be carried out in the following sequence:

- their dynamics is studied,

- implementation of the plan for their level,

- inter-farm comparative analysis is carried out;

– factors and reserves for improving the efficiency of land use are identified [16].

4. Development of agricultural land use based on SWOT-analysis

The problem of agricultural land use is key to ensuring the development of the agricultural sector of the economy, which emphasizes the need to create a favorable environment for improving the efficient use of agricultural land and ensuring the rapid growth of productive forces. The SWOT analysis matrix is a universal tool, and its subject can be any entity, economic activity or economic activity of business processes. We agree with them, although perhaps it would be worthwhile to add to these ways such as improving the planning system of agricultural land use development at the regional and local levels, after all the need for this is due to environmental goals first at regional levels, and then in the country. [17].

The crisis situation in agricultural land use is primarily related to the successful solution of the food problem, achieving the appropriate level of environmental security and determining measures to protect and increase

land fertility. It is necessary to learn in the future to use SWOT-analysis in the process of strategic planning of land use and implementation of guidelines for the development of agricultural land use [17].

Strategic planning in agricultural land use should take into account the use of agricultural land, in which it will be considered effective.

The efficiency of land use and efficient use of land resources are not identical, but they are based on the concept of rationality. Thus, Trehobchuk V. believes that the essence of rational use of agricultural land is to obtain high sustainable yields of crops while minimizing unit costs, maintaining and increasing the productive power of land as an agricultural resource, its protection and defense as part of the environment, reproduction of useful properties soil cover [18].

Mertens V. understands the rational use of land – the maximum involvement in the economic circulation of all lands and their effective use for the main purpose, creating the most favorable conditions for high productivity of agricultural land and obtaining from a unit of land the largest number of products with the lowest labor costs [19].

Klymenko A. believes that the efficient use of agricultural land is a balanced, scientifically sound, planned, taking into account the long-term interests of society, land use, according to which they get the maximum benefit with minimum costs [20].

We must agree with V. Ulanchuk and L. Alyoshkina who believe, that the efficient use of land resources in agriculture should be understood as a socio-economic category that depicts the relationship between people in the process of technological production processes related to agricultural production, in order to best meet the needs of the population in food to ensure the restoration of natural soil fertility, increase the productive potential of land resources and their use in a high level of environmental friendliness of both these resources and the environment as a whole [21].

The efficiency of agricultural land use to some extent depends on the level of profitability of agricultural enterprises, but their financial interests should not lead to a deterioration in the properties of land resources as the main means of production in agriculture [22].

Harazha O.P. believes that efficiency establishes causal relationships of production. Moreover, it provides a description of the price of achieving a certain result, and not to the result itself [23].

Thus, the problem of efficient use of agricultural land in Ukraine is becoming increasingly complicated. Today it has various aspects, the main of which are economic, organizational and environmental. The level of land use in Ukraine today is so critical that further degradation of the potential of land resources in agriculture can have catastrophic consequences, which will undoubtedly affect the overall level of food security of the country, the health of the nation.

Given the above, it is advisable to implement systems of balanced and rational land use and improvement of agricultural landscape management methods. Priority tasks in this area may be: protection of soils from erosion (construction of anti-erosion hydraulic structures), performance of hydroameliorative works; solving the problem of chemical reclamation of acid soils; gradual withdrawal from intensive cultivation of unproductive and degraded lands with their subsequent conservation or reclamation; ordering the existing ratio of land, first of all, reducing the share of arable land; establishing a single system of monitoring land resources, which would meet European requirements and comprehensively control environmental and agrochemical indicators and the use of soil resources using modern technologies [24].

As for the planning of measures to preserve and restore soil fertility, they are almost not implemented, which is due to both the lack of funds for the purchase of organic fertilizers and the lack of manure produced on the own farms. That is why the situation in land use is such that unproductive and degraded lands are in economic circulation. Nobody and nothing controls the use of exhausting technologies in the production and cultivation of agricultural products. Also, private landowners are not provided with material means for conducting agrochemical surveys [Smirnova S.M., Biriukova 95].

The review of the internal and external environment is an important part of the strategic development of agricultural land use. Factors of the internal environment of the enterprise are usually classified as Strength (S) or Weakness (W) and, accordingly, environmental factors can be classified as Opportunities (O) and Threats (T) [17].

The acronym SWOT was first introduced in 1963 at Harvard at a conference on business policy by Professor Kenneth Andrews. Initially, the SWOT analysis was based on the image and structuring of knowledge about the current situation and trends [25].

In 1965, four Harvard University professors, Edmund P. Learned, C. Roland Christensen, Kenneth R. Andrews, and William D. Huth, proposed the technology to use the SWOT models to develop a firm's behavior strategy. The LCAG scheme (based on the initials of the authors' surnames) was proposed, which is based on a sequence of steps leading to the choice of strategy.

Strengths;
Weaknesses;
Opportunities;
Threats.

This acronym can be represented as a table:

Table 2

The structure of the SWOT analysis table

	Positive impact	Negative influence
Internal environment	Strengths	Weaknesses
Environment	Opportunities	Threats

The traditional method of SWOT – analysis allows for a detailed study of the external and internal environment. The result of rational SWOT-analysis aimed at the formation of generalized information potential should be effective decisions regarding the corresponding reaction (influence) of the subject (weak, medium and strong) according to the signal (weak, medium or strong) of external environment.

A distinctive feature of this approach to SWOT-analysis at the enterprise is as follows:

1. Its construction is based on the methodology of the system-target approach, where the main attention is focused on measuring the parameters of the external and internal environment in space, time and taking into account the information potential.
2. Structuring the factors of external and internal environment that are universal for any enterprise.
3. Implementation of the synthesis of external and internal factors, which in future, will be reflected in the system of decisions.

The company's strengths are designed to ensure its rapid progress towards strategic goals, while its "weaknesses" cause inhibition. It is also

natural to take into account the opportunities and threats of the external environment, without which it is impossible to correctly determine the development scenarios of the organization.

Validity is a property of the organizational system, which in the case of synthesis with the capabilities of the external environment provides accelerated progress of the system to achieve strategic goals. Of particular interest is the formation of a “spiral of development” – a trajectory formed by “overlapping” (synthesis) of the strengths of the organizational system on the favorable capabilities of the external environment (taking into account the weaknesses of the organizational system and threats to the environment).

Weakness is a negative property of the organization, which determines its inhibition in the moving process to achieve strategic goals. Inhibition becomes essential when merging (synthesizing) the main weaknesses of the organizational system with significant threats to the environment. At the same time, the strengths of the company and the opportunities of the external environment cannot be ignored. This is how the variant of the pessimistic scenario of the organization’s development is formed. Such a scenario can be transformed into a “spiral of collapse” if there is a tendency (“domino effect”) to weaken opportunities and strengths, on the one hand, and increase threats to the environment in connection with the growing weaknesses of the organization.

Opportunities are trends or events in the external environment, with the right response to which the organization seeks significant progress towards its strategic goals.

Threats are trends or events in the external environment that, in the absence of an appropriate response from the organization, cause a significant deterioration in the state of the organization on the way to implementing its plans.

Since the 1990s, a fuzzy SWOT analysis has been used in the strategic planning process, which consists in dividing factors and phenomena into categories: strengths and weaknesses of the project, opportunities that open up in its implementation, and threats associated with its implementation. Traditional mathematical methods based on classical logic are intolerant of inaccuracies and biases of truth, as well as uncertainty in economic systems. In turn, the uncertainty of the system leads to increased risks of ineffective decisions, which can result in negative economic consequences. To this end, there is a need for methods based on fuzzy logic.

We will conduct a SWOT-analysis of the development of agricultural land use (Table 3).

**Table 3
SWOT-analysis of agricultural land use development**

Strengths	Weak sides
1	2
<ul style="list-style-type: none">– Synergetic effect of the interaction of economic, environmental and social spheres;– measures to increase soil fertility, its restoration;– organic farming;– expansion of perennial grasses;– protection of soils;– automated maintenance of the state land cadastre;– effective state control over land use and protection;– land monitoring;– investment attractiveness of agriculture;– preservation and increase of flora and fauna;– ecological and landscape organization of rural areas;– implementation of scientific, technical and technological achievements;– conservation of degraded agricultural lands;– control by state bodies over compliance with current legislation;– optimization of land use by establishing economic and environmental relations;– concentration and consolidation of agricultural land uses;– creation of food clusters;– financing of land protection measures;– state support of agriculture through subsidies;– state regulation of land use;– environmentally friendly production;– compliance with environmental standards of anthropogenic pressure on land resources;– minimum tillage;– investment activities in agricultural development;– agrochemical certification of agricultural lands;– availability of ecological passports of land plots, etc.	<ul style="list-style-type: none">– Tense ecological situation;– washed away, salinity, waterlogging of soils;– resource-intensive production;– violation of biological balance in nature;– lack of scientifically sound planning;– outdated land valuation data;– lack of soil protection measures;– unbalanced ratio of lands;– lack of long-term land planning;– reduction of agricultural land productivity;– unjustified transfer of land to other categories;– irrational use of land resources;– limited access to markets;– imperfect information on the state of land use management;– lack of development of an automated system of state land cadastre;– unsatisfactory budget financing of land management measures;– imperfection of state land management;– excessive plowing of the soil cover;– lack of a balanced strategy for land use development

Chapter «Economic sciences»

(End of Table 3)

<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> – Strategic land management; – production of high quality food; – ecological balance of agricultural production; – compliance with environmental safety standards; – use of plant residues as fertilizers; – optimization of the structure of sown areas of agricultural crops; – improving the legislative and regulatory framework; – creating favorable conditions for sustainable development; – economic stimulation for rational land use; – raising the level of public consciousness on land use and protection; – introduction of an effective system of informing the population; – increasing competitiveness in domestic and foreign markets; – penalties for soil contamination; – increase the profitability of agricultural production; – growth of incomes of agricultural producers; – transition to resource-saving technologies; – use of innovative biological means of pest control; – land management development; – reclamation of disturbed lands; – environmentally friendly use of land resources; – taking into account the regional features of agricultural production; – increasing the competitiveness of agricultural products; – attracting investment in the agricultural sector of the economy; – introduction of resource-saving and safe technologies; – responsibility of local authorities for evading environmental problems; – dumpless tillage 	<ul style="list-style-type: none"> – Anthropogenic impact on land use; – processing of products without compliance with environmental requirements; – expansion of areas under humus-consuming crops; – unregulated production processes; – lack of land use and soil protection programs; – corruption schemes in the field of land lease relations; – use of pesticides and mineral fertilizers; – violation of crop rotations; – reduction of humus content in soils; – soil contamination with pesticides and chemicals; – lack of legislative support for greening of agricultural land use; – intensification of degradation processes in the soil; – pollution of lands with sewage and atmospheric emissions; – imperfection of state management of land resources and land use; – imperfect land market infrastructure; – unsatisfactory use of reclaimed lands

Source: [17; 25]

The SWOT analysis provides information that can help an agricultural enterprise use its resources and opportunities in the competitive environment in which it operates. As such, it plays an important role in the development and selection of strategy.

The SWOT-analysis technique allows to assess the company's risks and opportunities as fully and in detail as possible, to plan the current production strategy:

The analysis of the external market environment of goods or services in terms of external and internal factors is carried out.

Based on the analysis, the strengths and weaknesses of the business, threats and market opportunities for business are formed.

The obtained parameters are entered into the SWOT-matrix for ease of analysis.

On the basis of the SWOT-matrix conclusions about necessary actions with the specified priorities of performance and terms are formed.

Classical analysis also involves the assessment of each of the factors in points relative to industry averages or in relation to the data of strategically important competing enterprises [27].

A significant list of preliminary data is needed to determine the relative importance of each of these SWOT factors. Objects within each factor must be arranged by significance, that is, the most important force will come first, then the second, and so on [28].

The development of agricultural land use should be based on a fundamentally new approach to forecasting the state of the environment – the allocation of strategic management zones and strategic economic centers. An important feature of the development of agricultural land use is the analysis of both the external environment and internal capabilities of the region. Each reference point for complex socio-economic development depending on the state of the environment. That is, several strategic alternatives should be developed taking into account possible situations in the future [17].

To successfully conduct a SWOT analysis, it is important to develop a concept of rational land use, which should be based on an objective vision of the future. Therefore, in order to implement the strategy of further development of land use, a matrix of SWOT-analysis was presented, which shows the strengths and weaknesses in agricultural land use (Table 3).

Considering the strengths as possible areas of rational land use, and the weaknesses as potential areas of action to eliminate them, it is necessary to identify priority areas for their strategic development.

In order to avoid possible mistakes in practice and get the most out of SWOT analysis, you need to follow a few basic rules:

- to specify the scope of SWOT-analysis as much as possible;
- adhere to the correctness in assigning a factor to strengths / weaknesses or opportunities / threats;
- SWOT-analysis should show the real state and prospects of the agricultural enterprise in the market, not their internal perception, so strengths and weaknesses can be considered as such only if they (or their result) are perceived by external buyers and partners;
- the quality of SWOT-analysis directly depends on the objectivity and use of diverse information;
- extensive and ambiguous wording should be avoided [17].

The introduction of SWOT analysis in the practice of land management, on the one hand, will help to eliminate the weaknesses of land use while simultaneous strengthening its strengths, on the other hand, take full advantage of opportunities that may arise from external factors, avoiding threats.

Therefore, there is reason to believe that the SWOT analysis has a significant impact on strategic management decisions aimed at the formation of rational agricultural land use.

5. Conclusions

In the process of research the composition and structure of Ukraine's land resources, their place in Europe, property relations and land use were assessed. The sequence of analytical operations and procedures aimed at preparation for analysis, analytical data processing and generalization of analytical information is highlighted and formulated. The main sources of information for the analysis of land resources of agricultural enterprises are primary documents, synthetic and analytical data. Their combination in the process of analytical procedures will increase the value of information and management decisions made on its basis.

Analyzing the set of indicators that characterize the state of land resources of agricultural enterprises, it is emphasized the lack of a single

methodology and uniform forms of documents to ensure a complete and comprehensive study of land resources. To eliminate this problem, a holistic methodological apparatus is proposed, in which the stages of analytical work (obtaining, processing and analyzing information), sources and channels of information, as well as tools, methods, techniques of analysis that allow to obtain appropriate results are coordinated. An important aspect that contributes to the effectiveness of such work is the choice of rational approaches and methods in accordance with the objects and needs of the analysis.

SWOT-analysis of agricultural land use development is presented. Based on the SWOT analysis, it can be seen that development strategies in land use should be aimed at highly efficient use of land resources, to restore their fertility. Due to this, high yields of crops will be obtained with minimal costs per unit of output and preservation of productive properties of land.

It is indicated that it is necessary to anticipate the ecological and economic responsibility of landowners and land users for deterioration of soil quality parameters, combination of public and private interests regarding sustainable land production, use of land resources taking into account community interests, prevision of measures to restore land productivity.

References:

1. Mulyk T. O. (2017) Analytical assessment of the composition and structure of land resources of Vinnytsia region: status and prospects. *Economy. Finances. Management: current issues of science and practice: All-Ukrainian scientific and production journal*, 12: 30–39.
2. State Statistics Service: official website. Available at: <http://www.ukrstat.gov.ua/>
3. Land Directory of Ukraine 2020 – a database of the country's land fund. Available at: <https://agropolit.com/spetsproekty/705-zemelniy-dovidnik-ukrayini--baza-daniih-pro-zemelniy-fond-krayini>
4. Mulyk T. O., Fedoryshyna L. I. (2020) Organization of analytical work in agricultural enterprises: textbook. way. Kyiv: "Center for Educational Literature", 236 p.
5. Mulyk T. O., Mulyk Ya. I. (2016) Methodological tools for the analysis of financial security of enterprises in the system of economic aspects of biofuel production. *Economics, Finance, Management: Current Issues in Science and Practice*, 9: 91–102.
6. Brukhanskyi R., Bincharovska T. (2019) Complex economic analysis of land resources of agricultural enterprises: organization and methodology. *Institute of Accounting, Control and Analysis in the context of globalization: International Science. Journal*, 1-2: 97–104.

Chapter «Economic sciences»

7. Ostapchuk T. P. (2016) Analytical support of operations with agricultural land resources. Current trends in the development of accounting and taxation: abstracts of the International Scientific and Practical Conference (Zhytomyr, November 25, 2016). Zhytomyr: Publisher O.O. Evenok, 166–169.
8. Mulyk T. O., Materynska O. A., Plionsak O. L. (2017) Analysis of economic activity: a textbook. Kyiv: Center for Educational Literature, 288 p.
9. Andreeva G. I., Andreeva V. A. (2009) Organization and methods of economic analysis. Sumy: UHEI “UAB”, 353 p.
10. Hutorov O. I. (2006) Estimation of land resources and investment efficiency: monograph / Kharkiv. nat. agrarian. un-t. Kharkiv, 370 p.
11. Kozubenko I. S., Dudnik D. V. (2012) Economic management of agricultural lands and methods for assessing its effectiveness. Polythematic network electronic scientific magazine Kuban. state agrarian un., 8(82). Available at: <http://ej.kubagro.ru/>
12. Accounting at agro-industrial enterprises. Manual on the application of normative and methodological documents of the Ministry of Agrarian Policy and the STA of Ukraine (2004). Kyiv: NSC “IAE”, 496 p.
13. Andriychuk V. G. (2013) Economics of agro-industrial enterprises. Kyiv: KNEU, 779 p.
14. Mashkova T. V. (2016) Accounting and information reflection of qualitative parameters of agricultural lands: author’s ref. dis. Cand. econ. Science: 08.00.09. Kyiv, 24 p.
15. Belinska S. M. (2015) Theoretical principles of land accounting. *Business Navigator*, 1(36): 168–173.
16. Mulyk T. O. (2017) Development and substantiation of directions for improving the efficiency of land use of agricultural enterprises. Strategic development of enterprises of the agrarian sphere of the economy of Ukraine: analytical and forecast assessment: collective monograph / For general. ed. V. K. Savchuk. Kyiv: PC “Comprint”, 283–295.
17. Smirnova S. M., & Birukova O. O. (2021) Strategies for the development of agricultural land use based on Swot-analysis. *Investments: Practice and Experience*, 1: 53–58. DOI: <https://doi.org/10.32702/2306-6814.2021.1.53>
18. Trehobchuk V. M. (2003) Reproduction and effective use of resource potential of agriculture (theoretical and practical aspects). Institute of Economics of the National Academy of Sciences of Ukraine, 260 p.
19. Mertens V. (1995) Economics of agriculture: textbook. Kyiv: Urozhay, 288 p.
20. Klimenko A. (2012) Management of land use development in agriculture: dis. ... Cand. econ. Science: special. 08.00.03 “Economics and management of the national economy”. Poltava, 183 p.
21. Ulanchuk B., Alyoshkina L. (2009) Ways to improve the efficiency of land use in agricultural enterprises in the region. *Economist of the APC*, 9: 10–15.
22. Kusyk N., Fedorova S. (2014) Theoretical principles of efficient use of land resources in agriculture. Modern technologies of enterprise management and the possibility of using information systems: status, problems, prospects: materials of the 9th International scientific-practical conference for teachers, graduate stu-

- dents and young scientists (March 28-29, 2014) / ed. N. Kusyk; ONU named after I. I. Mechnikov. Odessa: Bukaev V. V., 177–179.
23. Harazha O. P. (2016) Types and indicators of efficiency of agricultural land use in land management of Ukraine. *Economy and society*, 3: 52–60.
24. Mulyk T. O. (2020) Environmental impact assessment of agriculture: regional aspect. *Modern Economics*, 19: 135–142.
25. Mulyk T., Mulyk Ya. (2020) Innovations in the agricultural business: problems and prospects in Ukraine. *International Journal of Innovative Technologies in Economy*, 1(28): 9–18. DOI: https://doi.org/10.31435/rsglobal_ijite/31032020/6959
26. Lazareva O. V. (2015) Logical-semantic scheme model of rational agricultural land use. *Scientific works* [Petro Mohyla Black Sea State University of the Kyiv-Mohyla Academy complex]. Series: *Economics*, 265 (253): 139–143.
27. Shliakhta O. M. (2012) SWOT-analysis as a tool of strategic management of the enterprise. *Economic Space*, 68: 301–309.
28. SWOT analysis: (Marketing strategies) Marketopedia. Available at: <http://marketopedia.ru/47-swot-analiz.html>