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IMPROVING THE ORGANIZATIONAL FRAMEWORK OF ACCOUNTING AND ANALYTICAL SUPPORT IN THE MANAGEMENT SYSTEM OF FORESTRY ENTERPRISES

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The article examines the theoretical, methodological, and practical aspects of improving the organizational framework of accounting and analytical support in the management system of forestry enterprises under the conditions of digital transformation and sustainable development. It is substantiated that current challenges facing the forestry sector require the integration of financial, management, statistical, and environmental accounting into a unified information environment capable of generating reliable, relevant, and timely information for managerial decision-making. The study identifies the main causes of inconsistencies between accounting,

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management, and statistical reporting data, including inconsistencies in regulatory and methodological support, the use of heterogeneous software systems, differences in product classification, time discrepancies in data processing, and continuous legislative changes. The paper proposes the adaptation of the National Accounting Standard (NAS) 30 Biological Assets to the specific features of forestry activities through the clarification of terminology, improvement of biological asset and finished product valuation approaches, expansion of disclosure requirements in financial reporting, and refinement of forestry product classification. A theoretical and methodological framework for accounting representation of finished forestry products is developed, encompassing product classification, improved analytical accounting, enhanced documentation procedures, and the integration of economic, environmental, and social dimensions of forestry activities. Particular attention is devoted to the implementation of modern digital technologies, including ERP systems, electronic timber accounting, geographic information systems (GIS), Business Intelligence tools, artificial intelligence, and cloud technologies as key instruments for increasing transparency, efficiency, and responsiveness of management processes. The proposed recommendations contribute to improving the quality of accounting and analytical support, harmonizing national accounting practices with international standards, strengthening the reliability of financial reporting, and enhancing the competitiveness and sustainable development of forestry enterprises in the context of digital transformation.

Key words: accounting, forestry, finished products, biological assets, cost price, financial reporting, management accounting, accounting standards, accounting automation, expenses.

Tabl.: 4. Fig.: 1. Ref.: 13.

УДОСКОНАЛЕННЯ ОРГАНІЗАЦІЙНИХ ПОЛОЖЕНЬ ОБЛІКОВО-АНАЛІТИЧНОГО ЗАБЕЗПЕЧЕННЯ У СИСТЕМІ УПРАВЛІННЯ ПІДПРИЄМСТВАМИ ЛІСОВОГО ГОСПОДАРСТВА

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У статті досліджено теоретико-методичні й практичні аспекти вдосконалення організаційних положень обліково-аналітичного забезпечення у системі управління підприємствами лісового господарства в умовах цифрової трансформації економіки й реалізації принципів сталого розвитку. Обґрунтовано, що сучасні виклики функціонування лісового сектору потребують інтеграції бухгалтерського, управлінського, статистичного, а також екологічного обліку в єдине інформаційне середовище, здатне забезпечити формування перевіреної, релевантної та своєчасної інформації для прийняття управлінських рішень. Виявлено основні причини виникнення неспівставлення даних бухгалтерського обліку, управлінської та статистичної звітності, серед яких: неузгодженість нормативно-методичного забезпечення, використання різних програмних продуктів, відмінності у класифікації готової продукції, часові розбіжності й зміни законодавства. Запропоновано напрями адаптації положень НП(С)БО 30 «Біологічні активи» до специфіки лісогосподарської діяльності за допомогою уточнення термінологічного апарату,

удосконалення підходів до оцінки біологічних активів і готової продукції, розширення вимог щодо розкриття інформації у фінансовій звітності й доповнення класифікації лісової продукції. Розроблено теоретико-методичну конструкцію облікового відображення готової продукції лісівництва, що передбачає її систематизацію за видами, удосконалення аналітичного обліку й документального забезпечення, а також інтеграцію економічних, екологічних і соціальних аспектів діяльності. Обґрунтовано доцільність використання сучасних цифрових технологій, зокрема ERP-систем, електронного обліку деревини, геоінформаційних систем, Business Intelligence, штучного інтелекту й хмарних сервісів для підвищення прозорості, оперативності й ефективності управління підприємствами лісового господарства. Практична реалізація запропонованих рекомендацій сприятиме підвищенню якості інформаційного забезпечення управління, гармонізації національних облікових підходів із міжнародними стандартами й зміцненню конкурентоспроможності підприємств галузі.

Ключові слова: бухгалтерський облік, лісове господарство, готова продукція, біологічні активи, собівартість, фінансова звітність, управлінський облік, стандарти обліку, автоматизація обліку, витрати.

Табл.: 4. Рис.: 1. Літ.: 14.

Formulation of the problem. Accounting and financial reporting in the forestry sector have specific features determined by both the biological nature of assets and the complexity of their use and reproduction processes. A particular feature of accounting organization in forestry is the wide range of finished products, including primary and by-products, which require different accounting approaches and consistent valuation methods. In addition, control over the use of natural resources plays an important role in forestry enterprises, as it is associated with compliance with environmental, tax, and legal requirements.

One of the key problems arising in accounting is the inconsistency of data obtained from different sources of information, including statistical, management, financial, and tax reporting. Such a lack of consistency makes it difficult to establish a reliable information base for management, complicates both internal and external control, and creates risks of inaccuracies in financial statements. As a result, the efficiency of enterprise management decreases, problems arise with the accuracy of financial reporting data, which may lead to penalties and a lower level of trust among government authorities, investors, and business partners.

Another pressing issue is the insufficient methodological support for the measurement of biological assets and related products, the limited use of modern information technologies in accounting and management accounting, as well as the low level of integration of environmental indicators into financial and non-financial reporting. In the context of the digitalization of the economy and growing requirements for corporate transparency, these limitations have become critical and require a review of the organizational framework for accounting and analytical support in the forestry sector.

These issues are particularly relevant in the context of the structural transformation of Ukraine's forestry sector. Following the establishment of the State Specialized Economic Enterprise "Forests of Ukraine", most state forestry enterprises were consolidated into a single management system, accompanied by the standardization of business processes, the digitalization of accounting, and the introduction of unified information platforms. At the same time, there are growing requirements for the accuracy and reliability of information on timber harvesting

volumes, timber movement, cost formation, the measurement of biological assets, and the presentation of the results of economic activities in financial and non-financial reporting.

An additional factor is the active implementation of electronic timber accounting systems, digital document management, geoinformation technologies, and remote monitoring of forest resources, which significantly transform the information support of management in forestry enterprises. Under these conditions, the traditional accounting approaches no longer provide the required level of integration of financial, management, statistical, and environmental information, which makes it necessary to develop a modern model of accounting and analytical support focused on digital transformation and the principles of sustainable development.

Thus, an important scientific and practical task is to improve the organizational framework of accounting and analytical support in the forestry sector in order to establish a comprehensive, reliable, and adaptive information base for making effective management decisions in the context of sustainable development of forestry enterprises.

Analysis of recent research and publications. Forestry is a strategically important and resource-intensive sector of the economy that requires accurate accounting to ensure effective management of forestry enterprises. In the author's previous studies [1; 2], the specific features of forest resources as an accounting category were identified, and the main aspects of the classification and measurement of forestry products for accounting purposes were analyzed.

Today, considerable attention in the academic literature is devoted to the development of information support for forestry management, particularly in the areas of taxation, control, and financial reporting.

In particular, N. Pravdyuk emphasizes that the current tax administration system in the forestry sector is characterized by insufficient coordination between accounting and analytical subsystems, which makes it difficult to establish a comprehensive information base for management decision-making. The author stresses the need to standardize reporting forms and digitally integrate tax data into unified analytical systems [3].

O. Perchuk, L. Yaremenko, and T. Borodina examine issues related to the methodological support of accounting for cash flows and monetary assets. They propose developing a specialized system of analytical indicators for forestry enterprises that would make it possible to assess the financial stability, liquidity, and profitability of the production units. According to the researchers, integrating such indicators into the management accounting system would facilitate well-grounded decisions regarding the financing of reproduction processes in the forestry sector [4].

Foreign scholars I. Grover, J. O'Reilly, R. Vepstra, S. Sutor and D. Hutton-McDonald investigate the integration of ecosystem accounting into forest resource management, particularly the possibility of incorporating indicators of ecosystem services and natural capital into traditional financial and management systems in the forestry sector.

The authors believe that integrating ecosystem accounting into the accounting system of the forestry sector will provide a comprehensive representation of the economic and environmental value of the resources, thereby enhancing the

transparency, analytical capacity, and sustainability of management decisions [5]. A similar position is taken by O. Polova and I. Tomashuk [6; 7], who emphasize that the traditional accounting model does not take into account the environmental impacts of an enterprise's activities and therefore requires the expansion of accounting approaches to incorporate the ecosystem component.

Despite the significant contributions of Ukrainian and foreign scholars to the development of information support for the management of forestry enterprises, one of the main problems arising in the accounting of such enterprises is the inconsistency of data from different information sources, particularly due to the wide variety of products and the specific features of natural resource use. This may result in inaccuracies in financial statements, reduced management efficiency, and violations in tax and financial reporting.

Recent research in this field indicates a significant transformation in the concept of accounting and analytical support for enterprises towards the integration of digital technologies, environmental responsibility, and sustainable development management. In modern international practice, the accounting system is increasingly viewed as an information platform supporting strategic management, providing a combination of financial, production, social, and environmental performance indicators of an enterprise. Particular importance is attached to the integration of ESG indicators, the automation of accounting procedures, and the use of Business Intelligence, Big Data, and artificial intelligence technologies in generating analytical information.

At the same time, an analysis of the existing academic literature has shown that the comprehensive integration of financial accounting, management accounting, statistical accounting, and environmental accounting specifically for forestry enterprises remains insufficiently studied. Methodological approaches to organizing a digital information environment, adapting national accounting provisions (standards) to the specific features of the forestry sector, and applying modern information and analytical technologies in the management decision-making process are also insufficiently developed.

In the European Union countries, the development of accounting systems in the forestry sector is moving towards the harmonization of financial, production, and environmental information. Particular attention is paid to separating the value of land plots from the value of forest stands, applying fair value measurement to biological assets, and developing integrated information systems to support management decision-making. The experience of the Baltic and Scandinavian countries shows that integrating of accounting information with digital platforms for monitoring forest resources enhances the transparency of economic activities, the comparability of reporting data, and the efficiency of natural resource use. Taking these approaches into account is advisable for the further modernization of the national accounting system for forestry enterprises in Ukraine.

Formulation of the goals of the article. The purpose of the study is to develop theoretical and methodological principles and practical recommendations for improving the organizational framework of accounting and analytical support for forestry enterprises under conditions of digital transformation, integration of financial, management, statistical, and environmental information, and adaptation of

accounting procedures to the current requirements of sustainable development and International Financial Reporting Standards.

Presentation of the main research material. The accounting and analytical support system for the management of any enterprise is a key element of its information and communication infrastructure. It ensures coordination among structural units and provides an analytical basis for effective management decision-making. Its functioning is aimed at transforming primary accounting data into relevant, reliable, and timely information necessary for assessing the financial condition and performance of an enterprise and forecasting its future development prospects.

The conceptual essence of accounting and analytical support for enterprise management lies in creating an integrated analytical environment that promotes well-grounded management decisions, improves the quality of financial and management reporting, and ensures transparency of business processes.

The functioning of the accounting and analytical support system reflects the continuous cycle of management activities, which includes planning, organization, motivation, control, and regulation. Therefore, the system performs not only an information and analytical function but also a coordination function, facilitating the integration of management processes and enhancing their adaptability to the changes in the external environment. Improving this system is an important area of modern management development, as it contributes to greater management efficiency, financial stability, and competitiveness of forestry enterprises.

In the current context of sustainable economic development and the digitalization of management processes, the development of effective accounting and analytical support within the management system of forestry enterprises is becoming increasingly important. Accounting and analytical support serves as an integrated information environment that combines data from financial accounting, financial reporting, management accounting, statistical accounting, and environmental accounting to create a unified basis for management decision-making.

O. Polova argues that the main objectives of accounting and analytical support in the forestry sector are:

- ensuring the reliability, timeliness, and relevance of information on the condition of biological assets and the volumes of timber harvesting, processing, and sales of forest products;
- developing a comprehensive system of indicators characterizing the economic, environmental, and social performance of the enterprise;
- developing a unified methodology for measuring biological assets and finished products, taking into account International Financial Reporting Standards;
- creating analytical tools for monitoring the efficiency of forest resource use;
- automating accounting and analytical processes based on integrated information systems [7, p. 65].

The current development of forestry enterprises is characterized by the active digital transformation of business processes, which covers not only production activities but also accounting, internal control, economic analysis, and management decision-making. In the digital economy, information is becoming a strategic resource for an enterprise, while management efficiency increasingly depends on the

speed of information generation, its reliability, and the ability to integrate information across different systems.

Digitalization is particularly important for forestry enterprises because their production processes are characterized by significant geographical dispersion, a long biological cycle of forest cultivation, multi-stage product flows, and the need for continuous monitoring of the use of natural resources. Therefore, modern information technologies are becoming an integral component of accounting and analytical support for the management of forestry enterprises.

One of the key areas of the sector's digital transformation has been the implementation of electronic timber accounting, which ensures the traceability of timber from the harvesting site to the final consumer. The use of electronic consignment notes, digital product labeling, automated generation of primary accounting documents, and centralized information databases significantly increases the transparency of business transactions, minimizes the risk of errors, and reduces the possibility of unauthorized trade in forest products.

At the same time, digitalization requires the integration of financial accounting, management accounting, statistical accounting, and tax accounting within a single information environment. In practice, information is often stored in different software products, which leads to data duplication, inconsistencies, and increased workload in preparing reports. This problem can be addressed by implementing integrated ERP systems that enable automated information exchange among all the structural units of an enterprise.

The use of modern Business Intelligence (BI) technologies is becoming particularly important. They enable the rapid analysis of large volumes of data, visualization of financial indicators, assessment of trends in the use of forest resources, and modeling of alternative development scenarios for an enterprise. Unlike traditional reporting systems, BI platforms provide interactive dashboards, significantly improving the timeliness of management decision-making.

Another promising area for improving the accounting treatment of forestry products is the use of artificial intelligence and machine learning technologies to forecast the productivity of forest stands, assess the risks of forest fires, determine the optimal timing of timber harvesting, forecast financial results, and automatically detect anomalies in accounting data. The integration of these technologies will facilitate a shift from traditional retrospective analysis to predictive analytics, enabling proactive management of an enterprise's activities.

In addition, geographic information systems (GIS), remote sensing, satellite monitoring, and unmanned aerial vehicles are becoming widely used, enabling the rapid collection of information on the condition of forest stands, harvesting volumes, changes in forest cover, and the efficiency of forest resource use. Combining spatial data with accounting information creates a qualitatively new level of information support for management.

Thus, the digital transformation of accounting and analytical support for forestry enterprises should be viewed not merely as the automation of individual accounting procedures, but as a comprehensive modernization of the enterprise information system aimed at integrating financial, production, statistical, and

environmental information. Implementing of this approach will improve the reliability of accounting data, reduce the time required to prepare reports, strengthen internal control, improve information support for management decision-making, and enhance the competitiveness of forestry enterprises.

The practical implementation of the digital transformation of accounting and analytical support for forestry enterprises involves the use of a range of modern information technologies, each of which performs specific functions in the process of collecting, processing, and analyzing information. A summary of the main digital technologies, their areas of application, and expected outcomes is presented in Table 1.

Table 1

Modern Digital Technologies in the System of Accounting and Analytical Support for Forestry Enterprises Worldwide

Digital Technology	Area of Application	Expected Outcome
ERP system	Integration of financial, management, and production accounting	Unified information base
Electronic timber accounting	Control over timber movement	Increased transparency
GIS technologies	Forest resource monitoring	Timely management
Business Intelligence	Data analytics and visualization	Support for management decision-making
Artificial intelligence	Forecasting and risk detection	Improved forecasting accuracy
Cloud technologies	Electronic document management	Reduced information processing time

Source: compiled by the authors

As shown by the data in Table 1, the greatest benefits for forestry enterprises are achieved through the comprehensive use of digital technologies, as the integration of ERP systems, electronic timber accounting, geoinformation technologies, Business Intelligence, and artificial intelligence tools that creates a unified management information environment. This contributes to improving the reliability of accounting information, reducing data processing time, strengthening internal control, and enhancing information support for management decision-making.

The operational experience of forestry enterprises shows that the implementation of ERP systems enables the integration of accounting, production, warehouse, and logistics accounting within a single information environment, thereby reducing the time required to prepare management reports and minimizing information duplication. The use of Business Intelligence platforms makes it possible to create interactive dashboards for analyzing production costs, timber movement, financial results, and key performance indicators. At the same time, the application of artificial intelligence algorithms makes it possible to forecast the productivity of forest stands, identify abnormal business transactions in a timely manner, assess the risk of forest fires, and optimize management decision-making. Similar digital solutions are already being actively implemented by enterprises in the wood-processing industry in EU countries and are considered one of the key areas for enhancing the competitiveness of the sector.

Rapid changes in the global economic environment require comprehensive

modernization of the traditional accounting system.

In the current practice of forestry enterprises, it is assumed that forestry production does not create any products during the forest-growing stage. The product is timber obtained as a result of felling and the bucking of trees into assortments. Assortments are timber materials that are homogeneous in terms of grade, type, and dimensions and have a specific purpose. In addition, the current regulatory documents of the State Agency of Forest Resources of Ukraine do not provide clear definitions of finished products and work in progress. Thus, the Methodological Recommendations on the Formation of the Cost of Products (Works, Services) at Enterprises under the Management of the State Agency of Forest Resources of Ukraine [8] do not contain a definition of forestry products.

In our opinion, the main causes of discrepancies between accounting data on the production and sale of finished forestry products are as follows:

1) inconsistencies in the application of accounting standards and methodologies. This is primarily caused by the fact that different sources may apply different methods for measuring the value of products (for example, different approaches to determining the fair value of forest and sawn timber products). In addition, the absence of unified standards or insufficient compliance with existing standards, such as NAS 30, may result in discrepancies between data;

2) technical problems caused by the use of different accounting software products that are not integrated with each other. This may result in errors when transferring data or in data incompatibility. In addition, incorrect data entry and human error may also lead to discrepancies in the information;

3) timing discrepancies caused by delays in updating data between different departments of an enterprise (for example, between the production and accounting departments). Such delays may result in differences in the accounting data recorded at various stages. In addition, the lack of real-time data exchange may lead to discrepancies in figures relating to the quantity or value of products;

4) different levels of detail, meaning that one source may contain more detailed information than another, making comparison difficult. For example, if one source provides data for each individual unit of production while another aggregates the information by month, discrepancies may arise;

5) inconsistencies in categories or classifications, meaning that different sources may use different classifications or categories for the same types of products or services. For example, forest resources may be classified as primary, related, or by-products in one department, but treated as a single category in another;

6) changes in legislation and regulatory acts, meaning that updates to legislation or changes in accounting standards may result in different information sources not updating their data at the same speed or in the same way.

Data discrepancies can significantly complicate management accounting, as inaccurate information affects management decision-making. For example, if data on forest resource inventories or the volumes of products manufactured do not match, management may lack reliable information for planning production, procurement, or sales.

Furthermore, discrepancies between data from different sources may result in

the inaccurate presentation of an enterprise's financial results. For example, incorrect accounting for the costs of growing forest stands or an inaccurate measurement of the value of timber may lead to an overstatement or understatement of financial indicators. This, in turn, may negatively affect investment decision-making or the ability to obtain loans. As a result, discrepancies in reporting data may complicate the audit process. When examining the financial statements, auditors may find inconsistencies between primary documents and accounting records, which may lead to the identification of violations or errors. This may reduce the level of confidence in the enterprise's financial reporting.

Overall, an analysis of the causes of discrepancies in accounting data related to the production and sale of finished forestry products has shown that most scholars rely on National Accounting Standard (NAS) 30 «Biological Assets» [9] when accounting for finished forestry products. However, this accounting standard regulates agricultural activities, while forestry activities are barely mentioned in NAS 30.

The only aspect related to the forestry sector provided for in National Accounting Standard (NAS) 30 «Biological Assets» is the inclusion, in the appendix to the standard entitled «Examples of Biological Assets and Agricultural Products», of forest trees (forest stands) as biological assets and commercial timber and firewood as products. Therefore, in order to address the identified problem, we propose adapting the existing NAS 30 to the specific features of forestry (Table 2).

Table 2

Adaptation of the Provisions of National Accounting Standard 30 "Biological Assets" to the Specific Features of Forestry

№	Section of the Standard	Proposed Amendment
1	2	3
1	Terms used in the National Accounting Standards have the following meanings:	*Finished forestry products* – forest products, including both timber products (wood obtained through felling and bucking trees into assortments) and non-timber forest products (berries, mushrooms, medicinal plants, technical raw materials (natural regeneration), and fodder (hay)), as well as wood residues (trees fallen as a result of emergencies, roots, brushwood, branches, and tree tops) and sawn timber products (boards, beams, and sawmill residues (sawdust, wood shavings, and wood chips)). The production and sale of these products ensure a balance of the economic, social, and environmental interests of stakeholders and provide comprehensive information to the users in various analytical dimensions.
2	Recognition and measurement of biological assets	A biological asset and/or agricultural *or forestry* product is recognized as an asset if an enterprise controls it as a result of past events, it is probable that the enterprise will receive future economic benefits associated with its use, and its value can be reliably measured. *Measurement methods that take into account the specific features of forestry activities:* *– at fair value, taking into account market prices for timber or forest products;* *– at historical cost when fair value cannot be reliably determined (for example, for young forest stands). Clarification of the approaches to measuring timber growth during the growth process.*

Continuation table 2

1	2	3
3	Income and expenses from agricultural activities	Title: Income and expenses from agricultural and *forestry* activities. *Recognition of income and expenses from forestry activities. Income from the sale of timber, sawn timber, or other forest products should be recognized at the time the products are transferred to the buyer.* *Costs of harvesting timber and other forest products should be accounted for as production costs, separately from administrative and other expenses.*
4	Disclosure of information on biological assets in the notes to the financial statements	*Biological assets should be presented in the notes to the financial statements by the following groups:* *Long-term biological assets of forestry: forest stands under cultivation until they reach the stage of commercial use.* *Current biological assets: felled timber and other forest products ready for sale.*

Source: authors' proposals

The proposed adaptations of National Accounting Standard 30 to the specific features of forestry will help address the inconsistency between the standard and the specific characteristics of the sector, improve accounting accuracy and the transparency of financial reporting, and ensure its compliance with international standards.

In addition, we consider it appropriate to provide clarifications regarding the appendix to National Accounting Standard 30 «Biological Assets», entitled «Examples of Biological Assets and Agricultural Products» (Table 3).

Table 3

Proposals for Supplementing the Appendix to National Accounting Standard 30 «Biological Assets»

EXAMPLES of biological assets, agricultural and forestry products			
Category of the products Asset	*Main products*	*Related products*	*By-products*
Forest and sawn timber products			
Forest products	*timber obtained as a result of felling and the bucking of trees into assortments*	*berries, mushrooms, medicinal plants, technical raw materials (natural regeneration), fodder (hay)*	*trees fallen as a result of emergencies, roots, brushwood, branches, and tree tops*
Sawn timber products	*boards*	*beams and small beams*	*sawdust, wood shavings, wood chips*

Source: authors' proposals

The valuation of forestry products in accordance with the requirements of National Accounting Standard 30 «Biological Assets» ensures an objective

presentation of the value of such assets in financial reporting, taking into account all the costs associated with their production, storage, and sale.

The practical implementation of the proposed amendments to National Accounting Standard 30 may be carried out in the stages. At the first stage, it is advisable to develop methodological recommendations for the application of the standard by forestry enterprises, defining the composition of biological assets, the procedure for their measurement and the classification of finished products. The second stage involves introducing the relevant amendments to the regulatory and legal acts of the Ministry of Finance of Ukraine and the State Agency of Forest Resources of Ukraine. At the third stage, it is advisable to ensure the adaptation of accounting information systems, update the accounting policies of enterprises, and improve the qualifications of accounting staff regarding the application of the new methodological approaches. Such a phased mechanism will facilitate the gradual implementation of the proposed changes without disrupting the existing accounting system.

Thus, discrepancies between data in the forestry sector are a serious problem that affects the accuracy of financial reporting and the efficiency of management decisions. In order to address this problem, the first priority is to bring accounting standards into alignment. In particular, it is proposed to adapt National Accounting Standard 30 «Biological Assets» to the specific features of forestry activities.

In addition to adapting National Accounting Standard 30, we also propose to include the types of timber and sawn timber products in the appendix to the standard using the same analytical dimensions that are proposed for presenting the concept and classification of finished forestry products.

Table 4

Accounting Objects in Forestry in Accordance with IAS 41 «Agriculture»

Biological assets	Combined asset	Forestry products	Processed products
Trees in forest plantations	Land, trees, and costs of cultivating land for forestry	Felled timber	Timber materials
A living animal or plant	An asset that combines several types of assets	Harvested biological assets of an enterprise	A type of inventory

Source: compiled by the author based on IAS 41 [12]

It should also be noted that, according to IAS 41 (paragraph 13), «agricultural produce (logs) obtained from an enterprise's biological assets is accounted for at fair value». This standard establishes that biological assets, such as trees in a forest, should be measured at initial recognition and at each reporting date at fair value less costs to sell.

According to this standard, in the forestry sector, trees are considered biological assets, while logs are considered agricultural produce. IAS 41 applies to agricultural produce that is a biological asset only at the point of harvest. After that, IAS 2 «Inventories» applies [13].

In order to determine the fair value of biological assets, IAS 41 provides for three measurement methods:

- prices in an active market. If an active market does not exist, when

determining fair value, an entity uses one or more, where possible, of the following sources of information: (a) the most recent market transaction price; (b) market prices for similar assets; (c) relevant industry benchmarks, such as the value of orchard plantations per export pallet, bushel, or hectare;

- the present value of the expected net cash flows from the asset, discounted at the current market rate. When determining the present value of expected net cash flows, an entity includes the net cash flows that market participants expect the asset to generate in the most relevant market for that asset. The calculations exclude any cash flows related to the financing of assets, taxation, or the restoration of biological assets after harvest (for example, the costs of planting trees in forestry after they have been felled);

- cost, if little biological transformation has taken place since the initial costs were incurred (for example, tree seedlings planted shortly before the end of the reporting period), or if biological transformation is not expected to have a significant effect on the price (for example, at the initial stage of a 30-year pine forest cultivation cycle) [12].

International experience shows that one of the most problematic aspects of accounting for forest biological assets is their measurement. The measurement of forest biological assets is an important tool for improving the quality of information support for the strategic management of forestry. In order to achieve this objective, the priority tasks are as follows:

- completing the forest inventory, which will provide objective information on their current condition and create a basis for accurate accounting and planning of forest resource use;

- expanding the indicators presented in financial reporting that reflect the efficiency of forestry activities, including stand growth rather than only the number of trees planted; timber increment per hectare; timber stock per hectare; and the volume of timber harvested for the production of materials per unit of area;

- analyzing and evaluating the reporting of forest users with the involvement of scientific research that takes into account timber stocks in different regions of Ukraine and scientifically substantiated indicators of timber growth by species and age groups.

The implementation of these tasks will contribute to greater accounting transparency, improved reporting quality, and more effective management of forest resources at the national level.

In addition, it should be noted that costs and the cost of production play a key role in the activities of forestry enterprises, which creates a need for complete, reliable, and high-quality information on their structure, volume, places of occurrence, and other relevant aspects. The activities of forestry enterprises are characterized by the uniqueness of their production processes, specific features of both primary and auxiliary production, as well as a wide variety of products and corresponding costing units.

According to the Methodological Recommendations on the Formation of the Cost of Products (Works, Services) for Enterprises under the Management of the State Agency of Forest Resources of Ukraine [8], cost calculation is defined as the process of calculating, in monetary terms, the costs of producing a unit of a particular

type of product (works, services). Cost calculation makes it possible to determine:-the production cost of a unit of products (works, services);

-the cost of the total volume of products;

-the production cost by structural divisions, individual production processes, and -for the enterprise as a whole.

At the same time, it is recommended that the list and composition of costing items included in production costs be determined by the enterprise itself. However, in our opinion, this may result in different accounting and reporting treatments of similar costs, making it more difficult to compare data between enterprises and potentially affecting the transparency of accounting procedures.

According to paragraph 5.1 of the Methodological Recommendations [8], costs associated with the production of products (works, services) are grouped according to the following costing items:

1) raw materials and supplies;
2) purchased materials, semi-finished products and components, as well as works and services of a production nature provided by external enterprises and organizations;
3) fuel and energy for technological purposes;
4) returnable waste (deducted);
5) basic wages;
6) additional wages;
7) deductions for social measures;
8) costs of maintenance and operation of equipment;
9) manufacturing overhead costs;
10) costs of forestry works and services performed at the expense of income (revenue) from the sale of products (goods, works, services);
11) other production costs;
12) related products (deducted);
13) production cost [8].

Particular difficulties arise in allocating costs by costing items across different types of products and costing units. For example, the item «Costs of forestry works and services performed at the expense of income (revenue) from the sale of products (goods, works, services)» includes the following costs:

- forest cultivation activities in the state forest fund;
- forest fire protection;
- control of forest pests and diseases;
- establishment of protective forest stands and field shelterbelts [10, p. 21].

However, there is no methodology for allocating these costs among different types of products and costing units, which makes it difficult to accurately determine the cost of individual products. This may lead to distortions in accounting data and reduce the reliability of financial reporting.

1) development of a unified methodology for allocating costs of forestry works among different types of products, taking into account the specific features of each type of activity;
2) use of cost allocation coefficients depending on the contribution of each type

of product to income generation;

3) introduction of analytical cost accounting by individual types of works and products to improve the transparency of costing;

4) implementation of an accounting automation system that will enable the efficient allocation of costs among costing units.

Addressing these issues will contribute to greater accuracy in cost accounting, ensure reporting transparency, and enable an objective assessment of the performance of forestry enterprises.

Overall, based on the results of the study, it should be noted that the development of forestry as a sector that plays a key role in maintaining ecological balance requires accounting approaches to be adapted to the current challenges of sustainable development. In view of the above, we propose a theoretical and methodological framework for the accounting treatment of finished forestry products (Fig. 1), which is necessary to take into account the economic, environmental, and social aspects of activities and to create a transparent, reliable, and understandable system for managing the sector.

The development of a theoretical and methodological framework for the accounting treatment of finished forestry products is primarily driven by the fact that National Accounting Standard 30 “Biological Assets” practically does not cover the specific features of forestry activities. In addition, there is currently no unified methodology for measuring finished forestry products and assessing their impact on ecosystems.

Thus, the proposed theoretical and methodological framework for the accounting treatment of finished forestry products is important for harmonizing and standardizing existing approaches to their accounting. It makes it possible to establish a unified system for measuring and presenting finished products, ensuring consistency among different enterprises and organizations within the forestry sector. In addition, the application of this framework can improve the timeliness of the accounting process by ensuring clearer and more timely recording of data on finished forestry products, which is critical for making effective management decisions. This contributes to improving the accuracy of reporting data for both internal use and external reporting to regulatory authorities, investors, and other stakeholders. Accordingly, this framework not only improves accounting practices in the forestry sector but also helps to integrate the principles of sustainable development into accounting and reporting processes, which, in the long term, enhances the transparency, efficiency, and competitiveness of forestry enterprises.

Discrepancies between accounting data and management and statistical reporting have a direct impact on the formation of financial results of forestry enterprises. This impact is reflected in distortions of key elements of financial reporting, namely income, expenses, and the value of inventories.

From a logical and analytical perspective, the financial result of an enterprise is determined as the difference between income and expenses formed on the basis of accounting data. When these data are inconsistent, information asymmetries arise, leading to a violation of the principles of reliability and completeness of accounting information.

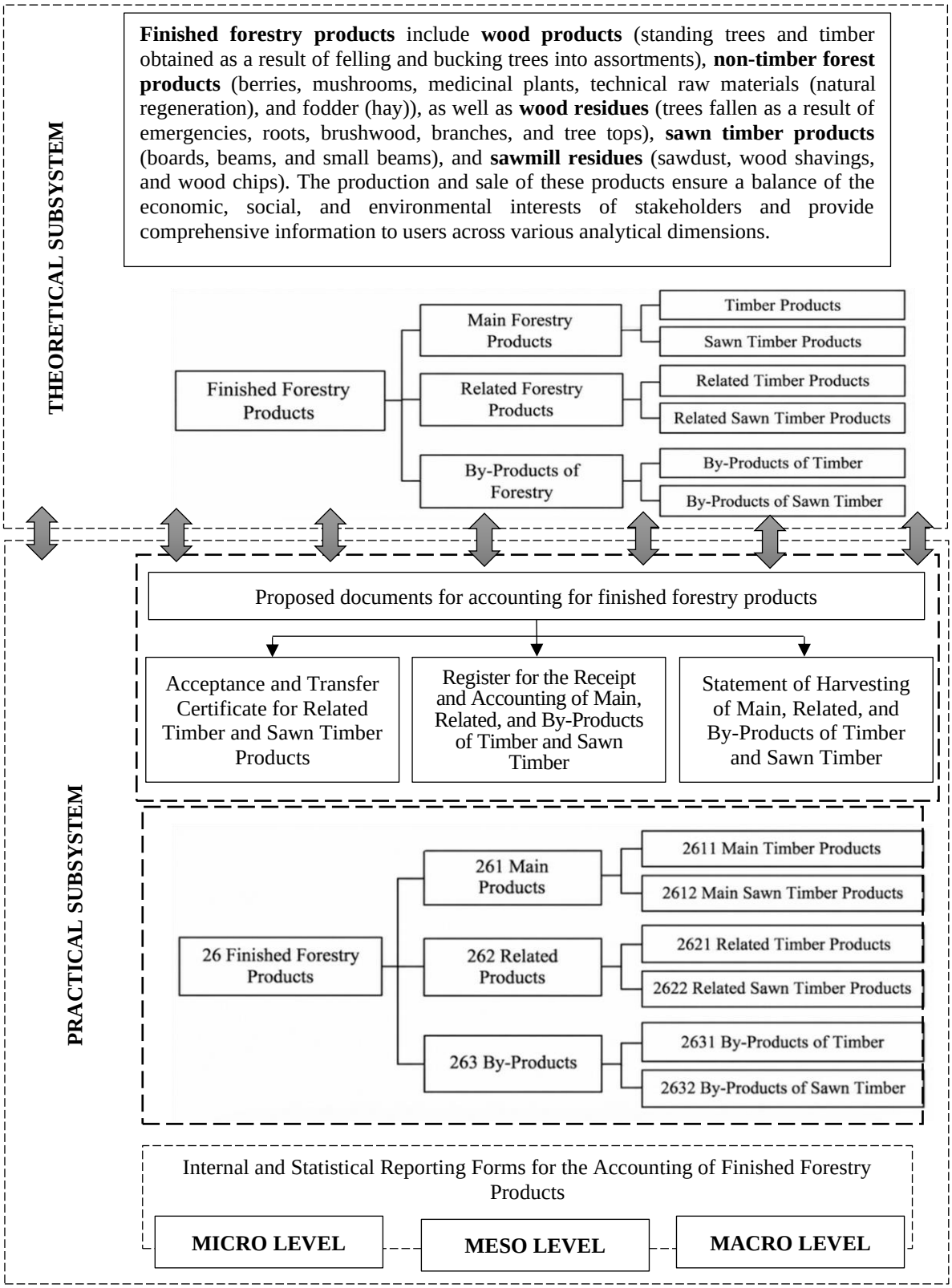

Fig. 1. **Theoretical and methodological framework for the accounting treatment of finished forestry products**

Source: author's own development

In particular, discrepancies in data on the volume of product sales may result in either an understatement or an overstatement of enterprise income. At the same time, errors in recording costs associated with the harvesting, processing, and sale of forest

products affect the formation of the cost of production, which, in turn, distorts profitability indicators.

This problem is particularly relevant in the context of forestry activities, where the measurement of biological assets and finished products at fair value plays an important role. The use of different measurement approaches or untimely updating of data may result in significant discrepancies in the value of assets, which.

In addition, timing discrepancies in the recognition of income and expenses violate the accrual principle and the principle of matching income and expenses, resulting in distortions of financial results across individual reporting periods. As a result, an enterprise may report artificially overstated or understated profit figures, which makes it more difficult to make well-grounded management decisions.

Thus, inconsistencies in accounting data not only reduce the quality of information support for management but also create risks of misstatement in financial reporting, which negatively affects the level of confidence among information users and the efficiency of forestry enterprises.

Conclusions. Based on the results of the study of ways to improve the accounting of the production and sale of forestry products, the following conclusions have been formulated:

An analysis of the internal regulatory documents of forestry enterprises showed that the methodological provisions for accounting for finished products in Account 26 are insufficiently detailed, which makes it difficult to generate accurate data for reporting, management, and analysis of economic efficiency. It is proposed to improve the accounting policy by introducing a classification of finished forestry products according to two analytical dimensions for Account 26 “Finished Products,” which will ensure more accurate presentation of data in financial reporting.

In addition, a document flow schedule was developed and included in the internal regulatory document on the accounting policy to optimize the accounting of finished products. The implementation of these measures will improve the accuracy and level of detail of reporting data, enhance accounting processes, contribute to more effective resource management, and ensure compliance with modern financial reporting standards while meeting the needs of stakeholders.

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REPRODUCTION OF HUMAN CAPITAL IN RURAL AREAS OF THE EUROPEAN UNION: DEMOGRAPHIC, INSTITUTIONAL AND DIGITAL DIMENSIONS

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