PROBLEMS OF ORGANIZING THE ACCOUNT OF BIOLOGICAL ASSETS

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Abstract
This article examines the progress achieved in agriculture, identifies existing challenges in the accelerated transition of accounting to international standards, and outlines the essence and key provisions of IAS 41 "Agriculture." The article presents the differences between NAS and IAS in accounting for biological assets, the challenges of accounting for biological assets based on IAS 41, and solutions.

Keywords: Agricultural products, biological assets, biotransformation process, recognition and evaluation of biological assets, initial cost, fair value.

Introduction

Uzbekistan's ongoing practical efforts toward accession to the World Trade Organization necessitate the direct transition of the national accounting system to International Financial Reporting Standards and compliance with these standards. Taking these requirements into account, the regulatory and legal framework of accounting in the country is being revised and redeveloped in accordance with the requirements of international standards.

In his address delivered at a meeting held on December 10, 2025, on the occasion of Agricultural Workers' Day, the President of the Republic of Uzbekistan assessed the achievements attained in the agricultural sector in 2025 as follows: 'In the current year, significant milestones have been achieved in agriculture, a sector in which more than 3.5 million citizens of our country are employed".

In cotton production, diligent farmers and agricultural producers cultivated approximately 875 thousand hectares of land, resulting in the harvest of nearly 4 million tons of raw cotton. For the first time, the average cotton yield reached 46 centners per hectare.

This year, grain producers harvested a total of 8.4 million tons of grain, while the average yield amounted to 85 centners per hectare.

In the current year, rice producers cultivated rice on 268 thousand hectares, obtaining a total harvest of 1.34 million tons, with the average yield reaching 50 centners per hectare.

Since the beginning of the year, food exports have increased by 37 percent, reaching USD 3 billion, and by the end of the year this indicator is expected to exceed USD 3.2 billion for the first time. The number of countries importing Uzbekistan's fruit and vegetable products has increased by 18, reaching a total of 83 countries. [1]."

Based on the above data, it can be concluded that at present the agricultural sector in our country is developing rapidly and becoming increasingly integrated into the international market. In achieving these outcomes, the role and significance of the established agricultural clusters have been substantial.

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Under conditions of a market economy, ensuring the transparency and reliability of financial reporting in agricultural sectors is of paramount importance. In this regard, the accounting of biological assets occupies a special place, as it involves the proper valuation of living organisms—plants and animals—which constitute one of the primary objects of agricultural accounting.

However, a number of problems and ambiguities persist in practice within this field, which hinder the process of maintaining accounting records and aligning financial reporting with international standards. At present, the following pressing issues exist in the Republic regarding the accounting of biological assets in accordance with International Financial Reporting Standards:

1. The regulatory and legal framework for accounting of biological assets is insufficiently developed.

The national accounting standards do not fully regulate the valuation of biological assets or the procedures for accounting for their growth, decrease, or disposal. As a result, enterprises apply different approaches in recording these processes.

2. Complexities in Determining the Fair Value of Biological Assets.

In many agricultural enterprises, the market data required to determine the fair (reasonable) value of assets are not available. As a result, biological assets are often measured at initial (historical) cost, which contradicts international requirements.

3. Insufficient Adaptation of Biological Asset Accounting to Information Technologies.

In order to accurately record the movement of biological assets (birth, growth, mortality, sale, etc.), modern information systems and software have not been adequately implemented in agricultural enterprises. In many cases, accounting records are maintained manually or using Microsoft Excel.

4. Insufficient Professional Competence in the Valuation of Biological Assets.

Among many accountants and auditors, a lack of knowledge is observed regarding the practical application of the requirements of IAS 41. This, in turn, calls into question the reliability of financial reporting information.

5. Difficulties in Conducting the Inventory of Biological Assets.

Due to the natural characteristics of biological assets, which are associated with the process of biotransformation, their dynamic nature (growth, reproduction, and transformation) complicates the inventory process. As a result, information regarding the quantity and quality of such assets is not always reliable.

Biological transformation is the process of biological change in agricultural animals and plants resulting from scientifically grounded human intervention, as a result of which they grow, gain weight, reproduce, and yield agricultural products.

Literature review on the topic

Biological assets are living organisms used in agricultural activities with the purpose of generating future economic benefits, including:

- Agricultural crops (wheat, cotton, vegetables, fruit-bearing trees);
- Livestock (cattle, sheep, poultry, horses, and others);

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- Living organisms used in aquaculture, apiculture, sericulture, and other agricultural sectors.

International Financial Reporting Standard (IFRS) No. 41 "Agriculture" provides for the recognition of biological assets as a separate accounting object. According to this standard, biological assets are measured at fair value, and remeasurement is performed at each reporting period[7].

Issues related to the accounting of biological assets have consistently remained at the center of attention of economic scholars. Many aspects of this problem have been examined by foreign economists, including V. Bukur, V. M. Vitalevna, A. A. Dodonov, N. N. Bondina, I. A. Bondin, E. I. Martemyanova, and T. V. Zubkova [2,3], as well as by domestic economists such as K. B. Urazov, S. V. Vakhidov, R. Dusmuratov, and S. N. Tashnazarov [3,4], among others, who have made significant contributions. However, existing studies insufficiently address the issues of accounting for biological assets under the conditions of transition to the current International Financial Reporting Standards, as well as the organizational and methodological tasks required to provide high-quality information for management decision-making that corresponds to market-based economic mechanisms. Moreover, the existing problems of accounting in the agricultural sector and the challenges faced by national accounting systems in resolving these issues have not been adequately investigated. These gaps have necessitated the examination of this topic as a distinct object of research.

Theoretical issues related to the accounting of biological assets and their practical application are limited in the literature. Furthermore, non-compliance with the requirements of IFRS No. 41 "Agriculture" and other related problems have not been sufficiently addressed in research. Most of the existing literature focuses primarily on the underlying principles.

Research methodology

During the study, in order to examine pressing issues related to the accounting of biological assets under International Financial Reporting Standards, scientific research methods such as economic-statistical analysis, analysis and synthesis, and comparison were employed.

Analysis and results

The modernization of our country's accounting system in accordance with International Financial Reporting Standards entails its development in harmony with the principles and rules established in the accounting systems of economically developed countries.

In the Decree No. 282 of the President of the Republic of Uzbekistan dated September 15, 2025, "On Measures to Improve the Financial Accounting System in Compliance with International Requirements and Standards," additional measures were established to accelerate the adaptation to IFRS.

The preparation of financial statements in agricultural enterprises in accordance with International Financial Reporting Standards enhances the investment attractiveness of these enterprises and facilitates the entry of agricultural products into the global market, while also providing foreign investors with the opportunity to meet their need for reliable financial information.

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At present, many large agricultural enterprises, including agricultural clusters, are preparing financial statements in accordance with IFRS. This indicates that the preparation of financial statements based on IFRS in existing agricultural enterprises is becoming increasingly significant in the Republic of Uzbekistan.

Considering the positive aspects of applying IFRS in enterprise activities, it should be noted that during the transition to accounting methods used in international standards, difficulties arise when implementing them for the first time. For instance, an enterprise's long-term biological assets must be measured at fair value. The formation of long-term biological assets—including their acquisition, transportation and preparation costs, impact on the biotransformation process, storage, and harvesting of products—requires substantial financial expenditures. This, in turn, demands the proper and efficient allocation of available financial resources within agricultural enterprises.

It should also be taken into account that, in the process of preparing financial statements, certain adjustments must be made considering the specific characteristics of the activity. For example, in agricultural operations, adjustments to financial statements are primarily related to seasonality, the valuation of crops and livestock, inventories, as well as accounting for subsidies and grants. These adjustments ensure that the statements are accurate and reliable.

The seasonality of agricultural production and its dependence on natural climatic conditions, along with fluctuations in market demand driven by these climatic factors, reveal the distinctive characteristics of pricing agricultural products. Product prices can change significantly within a relatively short period of time. This, in turn, can affect the value of assets in annual financial statements in an unplanned manner.

Currently, in the majority of agricultural enterprises in our Republic, the accounting of biological assets is regulated by the national standards: No. 1 "Accounting Policy and Financial Statements," No. 4 "Inventories," No. 5 "Fixed Assets," No. 20 "Simplified Accounting Procedure for Small Business Entities," and No. 21 "Chart of Accounts and Guidelines for Accounting in Business Entities".

Under the current national standards, biological assets, including working and productive animals as well as perennial plants, are recognized as fixed assets. Likewise, animals under rearing and in fattening are recognized as current assets (production inventories), while seedlings and tree saplings cultivated on the farm are accounted for as part of production inventories, in accordance with the national standards.

Production costs are regulated in accordance with the Regulation "On the Composition of Production and Sales Costs of Products (Works, Services) and the Procedure for Forming Financial Results," approved by Resolution No. 54 of the Cabinet of Ministers of the Republic of Uzbekistan dated February 5, 1999, in line with the national standards.

Standard No. 41 "Agriculture" serves as the primary basis for accounting for biological assets under the International Financial Reporting Standards. This standard applies exclusively to agricultural produce at the point of harvest, that is, to the products obtained from an entity's biological assets. Subsequently, IAS 2 "Inventories," IFRS 13 "Fair Value Measurement," and other relevant standards are applied.

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Table 1. Differences in the Accounting of Biological Assets under the National Accounting Standards (NAS) and the International Financial Reporting Standards (IFRS)

Accounting elements	NAS	IFRS
Regulatory Standards	No. 1 "Accounting Policy and Financial Statements", No. 4 "Inventories", No. 5 "Fixed Assets", No. 19 "Organization and Conduct of Recount", No. 20 "Simplified Accounting Procedure for Small Business Entities"	No. 1 "Presentation of Financial Statements", No. 41 "Agriculture", NAS 13 "Fair Value Measurement", No. 20 "Accounting for State Grants and Disclosure of State Assistance"
Recognition	An asset is recognized as a fixed asset if: - it is probable that future economic benefits associated with the asset will flow to the entity; - the initial cost of the asset can be measured reliably.	An entity should recognize a biological asset or agricultural produce only when: - the entity controls the asset as a result of past events; - it is probable that future economic benefits associated with the asset will flow to the entity; and - the fair value or cost of the asset can be measured reliably.
Evaluation	When fixed assets are recognized as assets, they are measured and recorded at their initial cost. After being recognized as an asset, a fixed asset should be accounted for at its initial or revalued amount.	A biological asset should be measured at its fair value less costs to sell at initial recognition and at the end of each reporting period, except in cases where a reliable measurement of fair value is not possible.
Value	The initial cost of a fixed asset includes the purchase price (amount paid to the supplier) as well as all expenditures directly attributable to acquiring the asset.	Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

As seen from Table 1, in order for our NAS to be fully understandable and transparent for international partners, it is necessary to review them and clearly establish the measurement procedures based on the IFRS.

In NAS No. 5 "Fixed Assets," it is indicated that when fixed assets (including long-term biological assets) are recognized as assets, they are measured and recorded at their initial cost. Likewise, after long-term biological assets are recognized as assets, they should be accounted for at their initial or revalued amount, and the applied accounting method must be reflected in the entity's accounting policy [6].

Under IAS No. 41 "Agriculture," a biological asset should be measured at its fair value less costs to sell at initial recognition and at the end of each reporting period, except in cases where a reliable measurement of fair value is not possible.

The gain or loss arising from the initial recognition of a biological asset at its fair value less costs to sell, as well as from subsequent changes in fair value less costs to sell, should be included in the profit or loss of the period in which it occurs.

A loss may arise at the initial recognition of a biological asset because the costs to sell are deducted when determining the fair value less costs to sell of the asset. Conversely, a gain may arise at initial recognition, for example, when a calf is born [8]. Valuing biological assets in this manner further enhances the reliability of the financial statements.

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"According to NAS No. 5 “Fixed Assets,” after a fixed asset whose fair value can be reliably measured is recognized, it should be recorded at its revalued amount, which reflects the fair value at the revaluation date less accumulated depreciation and accumulated impairment losses. Revaluations must be carried out with sufficient regularity to ensure that, at the end of the reporting period, the carrying amount of the asset does not differ materially from its fair value[6].

It is known that currently in our Republic, systematic mechanisms aligned with market economy principles for the revaluation of biological assets have not been developed. In the main sectors of agriculture, such as cotton and grain production, the valuation of the produced goods is primarily determined according to state orders, or there is no active market formed for these products. In the existing regional markets, the quantity of goods available for sale is limited, and the number of suppliers fluctuates significantly. This creates certain uncertainties in the revaluation process and in determining their fair value. Similarly, in the livestock sector, there are no active markets or legal standards that could serve as a basis for accurately assessing the fair value of livestock and livestock products.

It is evident that there is a need to establish specialized entrepreneurial entities in the regions of the Republic to organize and conduct non-state auctions for agricultural livestock and products, as well as to incentivize their activities.

In practice, the IAS-21 'Chart of Accounts and Guidelines for Its Application in Accounting for Business Entities' specifies the accounts to be used for recording long-term biological assets (working and productive animals, as well as perennial plants) and current biological assets (animals under breeding or fattening). However, these accounts do not fully and accurately reflect the recognition of biological assets.

The current intensifying ecological crisis necessitates the extensive application of digital technologies, widely used in global practice, that can monitor the chemical composition of soil and soil fertility levels as well as changes in trees and crops in the agricultural sector, and track livestock feed rations and their variations in the livestock sector, with integration of these technologies into the enterprise management accounting database.

Advanced professional technologies: digitalization is expected to become a strategically significant foundation[9,10].

In developed countries (such as Australia, Canada, and New Zealand), biological assets in agricultural enterprises are monitored through digital monitoring systems. Special electronic tags are used for livestock, enabling the automated tracking of their movement, health status, and economic value.

By gradually introducing this practice in Uzbekistan, it is possible to simplify accounting processes and enhance transparency. To implement these measures effectively, it is necessary to support highly qualified personnel with advanced knowledge and experience in their respective fields and to create the required conditions for the continuous development of their professional competencies.

It is well known that the nature of biological assets is associated with the process of biotransformation, as a result of which they grow, reproduce, or generate output in the course of economic activity. These processes complicate the organization and conduct of inventories

of biological assets. Consequently, information on the quantity and quality of biological assets may not always be reliable.

To improve the reliability of data obtained from the inventory of biological assets, it is essential, first of all, to include in the inventory commission specialists who possess adequate knowledge of biological assets and have a thorough understanding of the processes related to their growth, reproduction, and the quality of the products obtained. Furthermore, members of the commission must be provided with the necessary equipment and instruments required for conducting the inventory.

Conclusion

Accounting for biological assets is a key factor in determining the financial sustainability of agricultural enterprises. To address existing challenges, it is necessary to align the accounting system with international standards, introduce modern technologies, and enhance the qualifications of specialists.

Based on the conducted research, the following conclusions were drawn:

1. It is necessary to update the national accounting standards in accordance with IAS 41 by clearly defining the procedures for measuring biological assets at fair value.
2. It is essential to develop active market pricing for biological assets by organizing auction trading of agricultural products and living assets, as well as by introducing a price monitoring system in these markets.
3. To incorporate accounts related to the recognition and measurement of biological assets at fair value into NAS 21.
4. To introduce digital technologies, in particular by developing software platforms for monitoring the movement of biological assets in farming enterprises.
5. To expand professional development and training programs for accounting specialists, with an emphasis on studying international best practices.
6. To automate inventory processes, for example by expanding the use of electronic identification (chip-based) systems for livestock accounting.

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