MUHANDISLIK & IQTISODIYOT

ijtimoiy-iqtisodiy, innovatsion texnik, fan va ta'limga oid ilmiy-amaliy jurnal

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"GLOBAL RAQAMLI INTEGRATSIYALASHUV: 2030-YILGACHA YASHIL IQTISODIYOTGA O'TISHDA TEXNOLOGIK VA INDUSTRIAL SANOATNI RIVOJLANTIRISH ORQALI MIKRO VA MAKROIQTISODIY BARQAROR O'SISHNI TA'MINLASH DOLZARBLIGI"

"GLOBAL DIGITAL INTEGRATION: THE RELEVANCE OF ENSURING MICRO AND MACROECONOMIC SUSTAINABLE GROWTH THROUGH TECHNOLOGICAL AND INDUSTRIAL DEVELOPMENT IN THE TRANSITION TO A GREEN ECONOMY BY 2030"

«ГЛОБАЛЬНАЯ ЦИФРОВАЯ ИНТЕГРАЦИЯ: АКТУАЛЬНОСТЬ ОБЕСПЕЧЕНИЯ УСТОЙЧИВОГО МИКРО- И МАКРОЭКОНОМИЧЕСКОГО РОСТА ЧЕРЕЗ РАЗВИТИЕ ТЕХНОЛОГИЧЕСКОЙ И ИНДУСТРИАЛЬНОЙ ПРОМЫШЛЕННОСТИ В ПЕРЕХОДЕ К ЗЕЛЁНОЙ ЭКОНОМИКЕ К 2030 ГОДУ»

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05.01.00 – Axborot texnologiyalari, boshqaruv va kompyuter grafikasi
05.01.01 – Muhandislik geometriyasi va kompyuter grafikasi. Audio va video texnologiyalari
05.01.02 – Tizimli tahlil, boshqaruv va axborotni qayta ishlash
05.01.03 – Informatikaning nazariy asoslari
05.01.04 – Hisoblash mashinalari, majmualari va kompyuter tarmoqlarining matematik va dasturiy ta’minoti
05.01.05 – Axborotlarni himoyalash usullari va tizimlari. Axborot xavfsizligi
05.01.06 – Hisoblash texnikasi va boshqaruv tizimlarining elementlari va qurilmalari
05.01.07 – Matematik modellashtirish
05.01.11 – Raqamli texnologiyalar va sun’iy intellekt
05.02.00 – Mashinasozlik va mashinashunoslik
05.02.08 – Yer usti majmualari va uchish apparatlari
05.03.02 – Metrologiya va metrologiya ta’minoti
05.04.01 – Telekommunikasiya va kompyuter tizimlari, telekommunikasiya tarmoqlari va qurilmalari. Axborotlarni taqsimlash
05.05.03 – Yorug‘lik texnikasi. Maxsus yoritish texnologiyasi
05.05.05 – Issiqlik texnikasining nazariy asoslari
05.05.06 – Qayta tiklanadigan energiya turlari asosidagi energiya qurilmalari
05.06.01 – To‘qimachilik va yengil sanoat ishlab chiqarishlari materialshunosligi
05.08.03 – Temir yo‘l transportini ishlatish
05.09.01 – Qurilish konstruksiyalari, bino va inshootlar
05.09.04 – Suv ta’minoti. Kanalizatsiya. Suv havzalarini muhofazalovchi qurilish tizimlari
10.00.06 – Qiyosiy adabiyotshunoslik, chog‘ishtirma tilshunoslik va tarjimashunoslik
10.00.04 – Yevropa, Amerika va Avstraliya xalqlari tili va adabiyoti
08.00.01 – Iqtisodiyot nazariyasi
08.00.02 – Makroiqtisodiyot
08.00.03 – Sanoat iqtisodiyoti
08.00.04 – Qishloq xo‘jaligi iqtisodiyoti
08.00.05 – Xizmat ko‘rsatish tarmoqlari iqtisodiyoti
08.00.06 – Ekonometrika va statistika
08.00.07 – Moliya, pul muomalasi va kredit
08.00.08 – Buxgalteriya hisobi, iqtisodiy tahlil va audit
08.00.09 – Jahon iqtisodiyoti
08.00.10 – Demografiya. Mehnat iqtisodiyoti
08.00.11 – Marketing
08.00.12 – Mintaqaviy iqtisodiyot
08.00.13 – Menejment
08.00.14 – Iqtisodiyotda axborot tizimlari va texnologiyalari
08.00.15 – Tadbirkorlik va kichik biznes iqtisodiyoti
08.00.16 – Raqamli iqtisodiyot va xalqaro raqamli integratsiya
08.00.17 – Turizm va mehmonxona faoliyati

Ma’lumot uchun, OAK Rayosatining 2024-yil 28-avgustdagi 360/5-son qarori bilan “Dissertatsiyalar asosiy ilmiy natijalarini chop etishga tavsiya etilgan milliy ilmiy nashrlar ro‘yxati”ga texnika va iqtisodiyot fanlari bo‘yicha “Muhandislik va iqtisodiyot” jurnali ro‘yxatga kiritilgan.

Muassis: “Tadbirkor va ishbilarmon” MChJ

Hamkorlarimiz:

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USE OF FOREIGN EXPERIENCE IN ORGANIZING THE ACCOUNTING AND AUDITING OF BIOLOGICAL ASSETS

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Abstract. This paper provides a comparative analysis of the experience of developed countries in accounting for and auditing biological assets. It examines general approaches based on IAS 41 "Agriculture," the choice between fair value and historical cost, Canada's full-cost accounting approach, and practices in the United Kingdom, the United States, Singapore, Russia, Spain, China, the Czech Republic, Portugal, and Poland. The possibilities of applying foreign experience to the practices of agricultural enterprises in Uzbekistan are also substantiated.
Keywords: biological assets, foreign experience, fair value, historical cost, full-cost accounting, comparative analysis, IAS 41.
Annotatsiya. Ushbu maqolada biologik aktivlarni hisobga olish va audit qilish bo'yicha rivojlangan mamlakatlar tajribasi qiyosiy tahlil qilingan. Unda 41-son "Qishloq xo'jaligi" BHXSga asoslangan umumiy yondashuvlar, haqqoniy qiymat va tarixiy qiymat usullari o'rtasidagi tanlov, Kanadaning to'liq xarajatlarni hisobga olish yondashuvi, shuningdek, Buyuk Britaniya, AQSh, Singapur, Rossiya, Ispaniya, Xitoy, Chexiya, Portugaliya va Polsha amaliyoti o'rganilgan. Xorijiy tajribani O'zbekistondagi qishloq xo'jaligi korxonalari amaliyotiga tatbiq etish imkoniyatlari ham asoslab berilgan.
Kalit so'zlar: biologik aktivlar, xorijiy tajriba, haqqoniy qiymat, tarixiy qiymat, to'liq xarajatlarni hisobga olish, qiyosiy tahlil, 41-son BHXS.
Аннотация. В статье проведён сравнительный анализ опыта развитых стран в области бухгалтерского учёта и аудита биологических активов. Рассмотрены общие подходы, основанные на МСФО (IAS) 41 «Сельское хозяйство», выбор между справедливой и исторической стоимостью, канадский подход к учёту полных затрат, а также практика Великобритании, США, Сингапура, России, Испании, Китая, Чешской Республики, Португалии и Польши. Обоснованы возможности применения зарубежного опыта в деятельности сельскохозяйственных предприятий Узбекистана.
Ключевые слова: биологические активы, зарубежный опыт, справедливая стоимость, историческая стоимость, учёт полных затрат, сравнительный анализ, МСФО (IAS) 41.

INTRODUCTION

In world practice, the regulatory basis of accounting for biological assets is formed by International Accounting Standard (IAS) 41, "Agriculture." Extensive reforms are being carried out in Uzbekistan on the transition to international financial reporting standards. In this regard, the study of biological assets accounting and auditing organization and national best-practice approaches to adapt the experience of developed countries is of important scientific and practical importance. There is a difference in the approaches to the valuation of biological assets in different countries and in taking into account the effects of national GAAP, which makes this comparative analysis necessary.

1. IAS 41: General Rules and Practices of Developed Countries

In IAS 41, a biological asset is described as "a living animal or plant," and a group of biological assets is described as "an aggregation of similar living animals or plants." Depending on the duration, purpose, and use, the standard allows the grouping of biological assets and requires their assessment at fair value less costs to sell. This general rule is supported by developed countries but adapted to national conditions.

On the date of initial recognition of biological assets in Great Britain, as well as on the subsequent reporting date, they are assessed at fair value less costs to sell when the value can be determined reliably. In the USA, an IFRS-based approach to accounting for biological assets and agricultural products has received broad support, and ensuring the reliability of the information in reports is important for reducing the likelihood of errors and increasing compliance with international standards. In Singapore, biological assets are accounted for on the basis of IAS 41; meanwhile, for fixed assets, from 1 January 1984 until 31 December 1996, revalued facilities were subject to regular assessment, with partial exemptions provided.

2. Historical and Fair Value: European Experience and the CIS

Using the example of Spanish farms, Argilés, García-Blandón, and Monllau conducted empirical studies on the transition from historical value to fair value and found that the predictive power of the fair valuation of biological assets for future income was high. In China, Wencun's model for measuring biological assets in livestock production was analysed using six typical farms, with the percentage change in net fair value being the largest basis. Sedláček studied assessment methods in Czech agricultural accounting research. In Portugal, biological assets are accounted for at fair value; Gonçalves, Lopes, and Craig studied the value relevance of biological assets and found that information on biological assets intended for consumption may have relatively limited value relevance for investors when making valuation decisions. Nowotarska and Węgrzyńska conducted a survey in Poland to identify the factors influencing the choice of valuation methodology; Mietule analysed the problems and solutions related to the accounting and valuation of biological assets in Latvia. In Russian practice, when the market price of biological assets cannot be determined reliably, the discounted net cash-flow method is used to determine their current value. As noted by Mattera and Pal, historical-value measurement is a common method in the European Union.

The comparative analysis shows that the fair-value model increases the predictive power of financial reporting, although its application has a number of limitations. Empirical research conducted in Spain using the example of small businesses in agriculture showed that the application of the method developed in Western countries was no less effective than fair value. The main reasons for this are related to entities' approaches to determining fair value, its variability, the insufficient development of an active market, and difficulties in gathering audit evidence. In this regard, in foreign practice, the historical-value or fair-value method for biological assets is selected and used depending on the type of asset, the availability of reliable information, and the existence of an active market. Ensuring comparability between these choices remains one of the main issues in the national accounting system.

3. Full-Cost and Environmental Approach: The Canadian Experience

Full-cost accounting is used to account for the full cost of agriculture in Canada. This approach refers to the overall assessment of environmental and social costs and benefits arising from activities outside market practices. Full-cost accounting is necessary because more information on the environmental costs and benefits of agriculture is required to make sound decisions. Wetland ecosystem studies are regarded as a key component of the valuation of land and water resources; environmental externalities, such as river pollution, are taken into account as external costs borne by downstream users. Additionally, issues related to calculating depreciation for animals used in agriculture, identifying depreciable objects, and differences between accounting and taxation require further methodological clarification and improvement within the applicable accounting standards.

Table 1

Comparative Analysis of Foreign Experience in the Valuation of Biological Assets[1]

Country	Valuation approach	Key features
United Kingdom	Fair value less costs to sell	Biological assets are measured at initial recognition and at each subsequent reporting date when fair value can be measured reliably.
United States	IFRS-based accounting principles	Emphasis is placed on improving the reliability of financial reporting and reducing the risk of accounting errors.
Singapore	Accounting based on IAS 41	Biological assets are measured under IAS 41, while specific revaluation provisions may apply to property, plant, and equipment.
Canada	Full-cost accounting	Environmental and social costs and benefits are included in the overall assessment.
Russia	Discounted net cash-flow method	The method is applied to determine current value when an active market is unavailable.
Spain	Historical cost and fair value	Fair-value measurement may improve the prediction of future income.
China	Fair-value measurement model	The valuation model considers changes in the net fair value of biological assets in livestock farming.
Czech Republic	Fair and reliable valuation	Various valuation methods are applied in agricultural accounting.
Portugal	Fair-value accounting	Particular attention is paid to the value relevance of information on biological assets.
Poland	Factors influencing the choice of valuation method	Survey-based methods are used to identify factors affecting the selection of valuation approaches.

1 Compiled by the author based on IAS 41 and foreign studies [1; 3–9].

4. International Approaches to the Audit of Biological Assets

The audit of biological assets in international practice is carried out on the basis of International Standards on Auditing (ISA). The unique nature of biological assets and the determination of their fair value are associated with the specific characteristics of biological entities. The experience of China shows that the accounting and auditing of biological assets may involve increased risks of material misstatement and irregularities, creating additional challenges for auditors. In this regard, auditors should apply professional scepticism when verifying the validity of fair-value estimates and critically assess valuation methods, assumptions, and sources of market information. In developed countries, the practice of engaging independent experts to determine the fair value of biological assets and confirm inventory results is widely used when auditing changes in their value. This approach helps ensure the sufficiency and reliability of audit evidence worldwide.

5. Options for Using Foreign Experience

Based on the studied experience, the following approaches may be applied in accordance with national practice (Table 2). The principles of fair and reliable accounting used by farms, the Czech and Portuguese experience in fair-value accounting, Poland's approach to identifying factors influencing the choice of valuation methods, and China's model-farm practices can be successfully adapted to national conditions.

Table 2
Possibilities for Applying Foreign Experience in Uzbekistan[2]

Foreign experience	Possibility of application in Uzbekistan
Czech Republic — fair and reliable accounting principles	Adaptation of fair and reliable valuation principles to the accounting practices of agricultural enterprises.
Portugal — fair-value accounting	Improvement of the national accounting system based on international financial reporting standards.
Poland — analysis of factors influencing valuation	Practical application of factor analysis when selecting an appropriate valuation method.
China — biological asset valuation model	Introduction of suitable valuation models into the practices of agricultural enterprises in Uzbekistan.
Canada — full-cost accounting	Partial inclusion of environmental and social costs in agricultural accounting.

Foreign experience can be implemented in national practice through the following mechanisms: prioritising the fair-value model in the recognition and valuation of biological assets and applying the discounted cash-flow method where there is no active market; using factor analysis based on the Polish experience in selecting valuation methods; integrating indicators of biological productivity and transformational changes into the valuation system; and partially applying the Canadian experience in accounting for environmental costs. Such a personalised approach serves to increase the reliability and international comparability of agricultural enterprises' financial statements, as well as their investment attractiveness. At the same time, when applying foreign methods in the country, it is necessary to consider the specific natural and climatic conditions, the structure of the agricultural sector, and the national regulatory and legal framework.

Conclusion and Suggestions

The comparative analysis shows that, although IAS 41 forms the regulatory basis for the accounting and audit of biological assets, differences arise in its practical application due to the effects of national GAAP. In developed countries, the fair-value approach is prioritised because it increases the predictive power of financial reporting; at the same time, where there is no active market, historical-value and discounted cash-flow methods are applied. Adapting the experiences of the Czech Republic, Portugal, Poland, and China to Uzbekistan makes it possible to improve the accounting and auditing of biological assets in agricultural enterprises. The relevant proposals may be considered and further developed in cooperation with the Ministry of Agriculture and other competent institutions.

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2 Compiled by the author based on a generalisation of foreign experience [3–8].

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