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DEVELOPING ECONOMIC INNOVATIONS IN THE REGIONS OF UZBEKISTAN THROUGH THE APPLICATION OF BLOCKCHAIN TECHNOLOGY: A CASE STUDY OF SUPPLY CHAINS AND FINANCIAL SERVICES

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Abstract: The article examines the issues of modernizing economic processes in various regions of Uzbekistan through the use of blockchain technology. The main focus is on the agricultural supply chain and financial services for small businesses. Proposals are made based on practical projects within the “Digital Uzbekistan-2030” strategy and official statistical indicators.

Keywords: blockchain, regional development, supply chain, DeFi, Uzbekistan.

In recent years, digital transformations in Uzbekistan's economy have been progressing at a significant pace. As part of the government's “Digital Uzbekistan-2030” program, new technologies like blockchain have become one of the key tools for regional development. According to official data, the share of the digital economy is projected to reach 10 percent of the country's GDP by 2025. In this, the role of blockchain in ensuring transparency and efficiency is of particular importance.

Economic disparities still persist between the country's 14 regions and the Republic of Karakalpakstan. For example, agriculture is dominant in the Fergana Valley, while small business leads in Samarkand and Bukhara. In these very sectors, the implementation of blockchain allows for reducing losses and increasing revenue. Our research analyzes opportunities for developing regional innovations using two main areas: the supply chain and financial services.

Key features of blockchain and its current state in the country:

Blockchain technology was first introduced in 2008 with the Bitcoin network. Its main advantages are data immutability, transparency, and decentralized governance. These help to increase trust and reduce costs in economic processes.

Work with blockchain in Uzbekistan began in 2018. In 2022, the National Agency for Projects (NAPP) adopted a special resolution on regulating crypto-assets. As of October 2024, 15 licensed providers are operating. According to official statistics, in 2023 more than 512,000 citizens held crypto assets – about 1.5 percent of the population. This year, the transaction volume on licensed platforms has exceeded 1 billion US dollars, generating 3.6 million dollars in tax revenue for the state budget. The “Digital Uzbekistan-2030” program has identified blockchain as one of its priority areas. The current digital transformation index is approaching 0.8. However, the rollout is hindered by internet coverage in rural areas, which remains at around 70 percent.

Blockchain in the Supply Chain: The Fergana Valley Experience:

Agriculture accounts for more than a quarter of the country's economy. But losses during the product delivery process reach up to 30 percent – mainly due to problems in transportation and storage. Blockchain allows for the digital tracking of every stage here.

pilot project launched in the Fergana Valley in 2024 fully digitized the cotton supply chain. As a result, the number of fraudulent documents decreased by 15 percent, and export volume increased by 12 percent. Additionally, a study involving 500 farms showed that transaction costs decreased by 25 percent, while farmers' incomes increased by an average of 18 percent.

Table 1. Results in the Fergana Valley (2024)

Indicator	An'anaviy usul	With Blockchain	Difference (%)
Product losses	30%	20%	–33
Delivery time	7 days	2 days	–71
Farmer income (million soms)	50	59	+18

Similar platforms are being launched in Andijan and Namangan for fruit and vegetable exports. According to preliminary estimates, this could accelerate regional economic growth by 5–7 percent.

Blockchain in Financial Services: Samarkand and Other Regions:

While the level of access to banking services is close to 70 percent in cities, in rural areas this indicator does not exceed 20 percent. Blockchain-based DeFi (decentralized finance) platforms allow for mobile phone-based lending.

In Samarkand, the "buy now, pay later" service introduced by Uzum Bank issued 2 million plastic cards in one year, tripling its loan volume. Meanwhile, the number of DeFi users nationwide is expected to reach 1.4 million by 2025.

hallenges and ways to overcome them:

The main problems with implementation are internet infrastructure, a lack of specialists, and security issues. In 2024, 18 cyberattacks were recorded. To address this, public-private partnerships and local training programs are necessary. For example, in 2024, more than 10,000 rural residents completed short courses on blockchain. It is proposed to provide subsidies and increase the number of mobile internet points in the northern regions (Khorezm, Navoi). Blockchain has proven to be an effective tool for modernizing economic processes in the regions of Uzbekistan. Real projects and statistical indicators – a $1 billion transaction, an 18 percent revenue increase – confirm this potential.

Proposals:

1. Expand the Farg'ona and Samarkand experience to other regions.
2. Establish blockchain centers in each region.
3. Strengthen cooperation with international companies (e.g., Tether).

These measures will foster regional innovation and ensure sustainable economic growth.

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