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PROPOSALS FOR FURTHER SUPPORT OF THE FRUIT AND VEGETABLE SECTOR IN UZBEKISTAN

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Annotation. The article highlights issues that significantly influenced the growth of fruit and vegetable exports in the economy, with fresh and processed vegetables increasing by 1.8 and 1.6 times, respectively, compared to 2018, and accounting for 46.5% of the total fruit and vegetable production.

Keywords. fruit and vegetable growing, sustainable development, modernization, competitiveness, food security, state support, innovative technologies, drip irrigation, clusters, cooperation, efficient use of resources, processing, export, agrologistics complexes, agropark, agrocluster, fruit and vegetable clinic, standardization, economic incentives, international experience

The sustainable development of the fruit and vegetable industry is one of the key factors in ensuring food security, improving the competitiveness of agricultural products, and raising the welfare of the population. In the context of globalization and increasing environmental challenges, this sector requires an integrated approach that combines modernization, innovation, and effective state support. Modernization is the foundation of sustainability in the fruit and vegetable sector, involving the introduction of innovative technologies in cultivation, harvesting, storage, and processing. The experience of developed countries such as the Netherlands and Spain demonstrates that digitalization and mechanization can significantly reduce production costs while improving product quality. Greenhouse technologies, climate control systems, automated irrigation, and drone-based field monitoring have increased yields by 30–40 percent, while ensuring environmentally friendly production. For Uzbekistan, modernization should therefore be aimed at renewing obsolete equipment, introducing digital platforms for farm management, and promoting public–private partnerships to guarantee affordable access to innovations for small-scale farmers. Government incentives, such as tax breaks and concessional credit for the purchase of modern equipment, will further accelerate this process.

Food safety and strong state support also remain vital priorities. In light of the growing dependence of many countries on food imports, Uzbekistan must improve mechanisms of state regulation, including subsidies, insurance schemes, and financial aid for export logistics, while strengthening monitoring systems in line with international standards such as HACCP and ISO 22000. Establishing certification centers and adopting a transparent legal and regulatory framework will create conditions for Uzbek producers to access international markets more effectively.

Another critical challenge is the rational use of water resources. With irrigated land serving as the backbone of fruit and vegetable production, traditional irrigation methods are no longer sustainable. The introduction of water-saving technologies, particularly drip and sprinkler irrigation systems, is essential. International practice shows that drip irrigation can reduce water use by up to half while increasing yields by 20–25 percent. Alongside this, investment is needed in canal rehabilitation, reservoir lining, and digital monitoring of water use. Pilot projects, supported by international organizations such as the FAO, the World Bank, and the Asian Development Bank, can help accelerate the dissemination of such technologies.

Sustainable development of the sector also requires strengthening clusters and cooperatives. The cluster model, widely applied in Turkey, Italy, and Chile, integrates producers, processors, logistics providers, and exporters, thereby reducing production costs, improving quality control, and facilitating access to global markets. In Uzbekistan, establishing regional cooperatives of fruit and vegetable producers will help small farms overcome financial and logistical barriers. Such cooperatives should focus not only on production but also on processing, branding, and marketing, thereby creating added value before products reach consumers.

Equally important is the development of agrologistics and value chains. Currently, up to 30 percent of fruits and vegetables are lost before reaching the market, largely due to inadequate storage and distribution systems. The creation of multifunctional agrologistics complexes, such as Agroparks and Agrosanoat hubs, can centralize the entire value chain of the industry. Within these complexes, all stages from storage, processing, packaging, and biolaboratory services to certification and export procedures can be managed efficiently. Such integrated facilities would not only reduce post-harvest losses but also ensure compliance with international safety and quality standards.

In addition, the establishment of specialized support services is necessary. The introduction of the “Fruit and Vegetable Clinic” could provide farmers with expert consulting on soil fertility, pest management, plant diseases, and crop diversification. Similar extension services are successfully operating in South Korea and Israel, where they act as important bridges between research institutions and farms. In Uzbekistan, such clinics should also offer training in modern agricultural practices, awareness of global market trends, and practical solutions to increase productivity. Collaboration with universities and research centers will ensure that innovations are transferred to practice effectively.

Legal and regulatory improvements form another pillar of sustainability. The creation of comprehensive legal frameworks regulating the quality and safety of fruit and vegetable products is vital. This includes the development of standards for organic farming, certification of seeds and seedlings, and regulations on pesticide residues. Harmonizing Uzbek legislation with international norms, especially those of the European Union and the World Trade Organization, will open new opportunities for diversification of exports and strengthen competitiveness in global markets.

Despite these promising directions, a number of challenges remain. Financial barriers often prevent small-scale farmers from accessing advanced technologies, as modernization and irrigation systems require high investment costs. Institutional weaknesses, including overlapping responsibilities among government agencies, may reduce the effectiveness of policies. Climate change poses serious risks to agricultural sustainability, with rising temperatures, soil salinization, and extreme weather events threatening productivity. Moreover, heavy reliance on a limited number of export markets, such as Russia and Kazakhstan, increases vulnerability to external shocks and geopolitical fluctuations.

Addressing these risks requires inclusive financial mechanisms such as agricultural credit guarantees, crop insurance, and targeted investment platforms. Stronger institutional coordination and public–private partnerships are also necessary to ensure that reforms are implemented consistently and transparently. In addition, the adoption of climate-resilient crop varieties and adaptive farming practices will play a key role in mitigating the negative effects of climate change.

In conclusion, the sustainable development of Uzbekistan’s fruit and vegetable industry requires a multidimensional strategy that combines modernization, efficient use of water resources, the strengthening of clusters and cooperatives, the development of agrologistics and value chains, and the improvement of regulatory frameworks. If supported by effective governance, innovative

financing mechanisms, and international cooperation, these measures will not only guarantee long-term sustainability but will also improve national food security, reduce dependence on imports, expand export geography, and raise the living standards of the population. Uzbekistan thus has the potential to become a leading regional hub in fruit and vegetable production and trade.

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