

## APPLICATION OF NEW TECHNOLOGIES IN AGRICULTURE AND THEIR USE IN THE ECONOMY.

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### **Abstract**

*In this article, the application of new technologies in agriculture and their use in the economy, the decision "On measures to develop the agro-industrial complex of the Republic of Uzbekistan and the digitization system in agriculture" and its content, principles, Analytical information about problems in the process of applying new technologies in Uzbekistan's agriculture and their use in the economy, and a number of opinions about their organization with the help of "Smart Agriculture" has been highlighted.*

### **Key words**

*Agriculture, modernization, digital platform, "Digital Uzbekistan - 2030" strategy, "Smart agriculture", "smart", "Smart farming", Smart Technologies, smart service services.*

Currently, the use of digital technologies is developing rapidly in almost all spheres of human activity on a global scale. Agriculture is no exception. Therefore, in recent years, special importance has been attached to the development of the digital economy in our country.

Since Uzbekistan is entering the world community year by year, in order to modernize every sector of our country and turn it into a digital platform, the President of the Republic of Uzbekistan Shavkat Mirziyoyev approved the strategy "Digital Uzbekistan - 2030" and took measures for its effective implementation. signed the decree<sup>155</sup>.

According to the decree, the following goals were set:

- The "Digital Uzbekistan - 2030" strategy and the "roadmap" for its implementation will be developed.
- In 2020-2022, programs for digital transformation of regions and networks will be created

<sup>155</sup> <https://qalampir.uz/uz/news/prezident-rak-amli-uzbekiston-2030-strategiyasini-tasdik-ladi-26704>

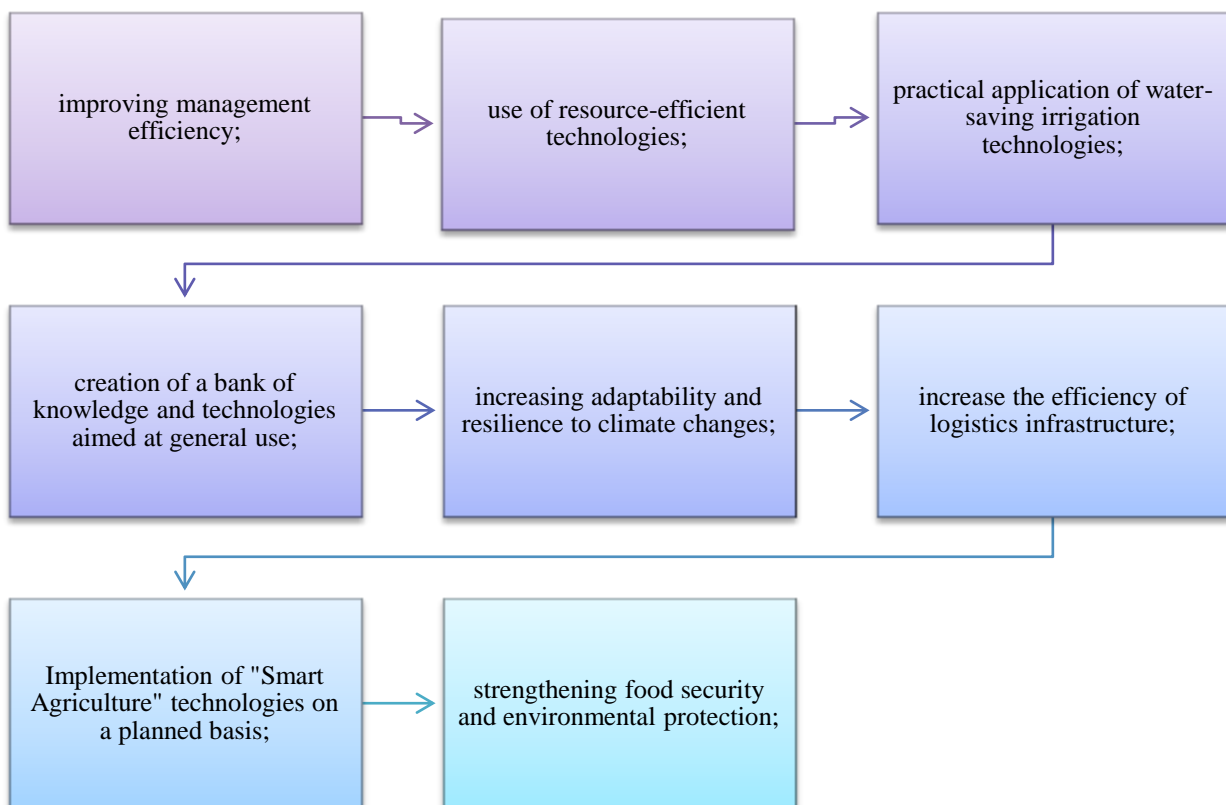
• More than 400 information systems, electronic services and other software products will be introduced within the framework of digital transformation programs of regions and networks, including in various areas of social and economic development of regions.

The priority tasks of the network are expressed in the decrees of the President in this direction, in the decision of the Cabinet of Ministers on December 17 of last year "On measures to develop the agro-industrial complex and the digitization system of the Republic of Uzbekistan".

The draft decision of the Cabinet of Ministers "On approving the concept of introduction of "Smart agriculture" technologies in the Republic of Uzbekistan" has been posted on the portal for the discussion of draft legal documents.

The main goal of this concept is to implement a set of measures to introduce high technologies in agricultural production aimed at increasing the productivity of agricultural crops and livestock.

**It is advisable to put the following into practice:**



In the process of applying new technologies in the agricultural sector of Uzbekistan and using them in the economy, a number of problems are evident.

According to the analysis, the producer of agricultural products has to adopt more than 40 different solutions during the season (in short periods). Most of it is considered an object of digitization and directly affects the production efficiency. It

is estimated that 33 percent of the crop is lost during planting, cultivation, storage and transportation. In such conditions, "smart" or "intelligent agriculture" technologies, which ensure the rational use of available land, water, material-technical and labor resources, are appropriate.

The technical and technological base of agriculture mainly determines the overall development of the agro-industrial complex. This is manifested in the technological improvement of animal husbandry and farming, increasing land productivity, and replacing manual labor with automation. The lack of techniques limits the possibilities of farmers and increases labor costs in the cost of production. Effective use of existing technical means, along with the application of innovative technologies, accelerates the process of reproduction.<sup>156</sup>

Agricultural sectors face serious challenges in the near future, to feed the 9.6 billion people who will live on the planet by 2050. Despite unpredictable factors such as limited arable land, increasing demand for fresh water (agriculture consumes about 70% of the world's fresh water), and climate change, food production will increase by 70%.

One of the ways to solve these problems and to increase the quality and quantity of agricultural products is the use of Smart Technologies, which allows farms to be more "intelligent" and more developed through the so-called "Smart Farming" method.

Smart agriculture is a set of high-tech solutions that allow modernization of agricultural industries as much as possible, as a result of which KPI indicators increase, product quality and quantity improve, and production becomes economically profitable. In agriculture, smart technologies are most widely used in the United States, Canada, India, China and Israel.

Smart Technologies is an interactive products company known for its interactive touch whiteboards that can be connected to computers and video projectors.

In order to implement "Smart Agriculture" in our country and introduce it into the economy, the following principles have been set as goals:

- Ensuring compliance of product production processes and standards with global requirements in order for Uzbekistan to become a leading exporter of agricultural products in the world market;

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<sup>156</sup> <https://yuz.uz/uz/news/aqlli-qishloq-xojaligi>

- Creation of regulatory, legal, organizational and institutional foundations for the introduction of "Smart agriculture", including digital infrastructure, platform technologies;
- development and implementation of mechanisms for stimulating the demand for smart services;
- formation of a system of state support for the development and implementation of intelligent service services;
- providing services to rural residents and improving their standard of living;
- ensuring the creation of a favorable environment for information and communication technology infrastructures in rural areas, as well as increasing the speed of the Internet and the possibilities of its use;
- creation of the "Smart Agriculture" platform that evaluates the products of agricultural producers and connects them with consumers in all branches of agriculture;
- development of the use of the navigation system on agricultural land using digital technologies, including providing open information to farmers, accelerating the introduction and improvement of the digital technology system;
- Planning and implementation of full coverage of all regions of the republic with the introduced "Smart Agriculture" technology;
- creation of technologies that simplify the process of crediting and insurance of agricultural production, shortening the terms of providing public services (subsidies, subsidies, etc.) taking into account digital objective data of subjects, encouraging the introduction of digital technologies simplifying the flow of documents through incentives;
- increase the labor productivity of economic entities and accelerate the circulation of funds;
- introduction of digital information resources, platforms and technologies (precision farming, control of the growing season, digital field, digital herd, etc.) that increase production efficiency, provide control and monitoring, provide effective management (production and consumption goods balance, export, market conditions at various levels, analysis, balance analysis), creation of an effective sales chain from the producer to the consumer;
- the availability of goods in stock exchanges and warehouses (cotton, grain, oil, sugar, rice, etc.) and their use as financial management tools to balance supply and demand in seasonal trade;

- to improve the efficiency of communication among participants and with the state in a digital format, integrate information resources, and create unlimited fast and free access to users (electronic transactions, electronic warehouse documents, documents for acceptance of goods for processing, etc.);
- development of the digital environment of distance agricultural education and the professional agroconsulting market;
- increasing the attractiveness of working in agriculture, increasing the need for information and communication technology specialists in agriculture, increasing the income of the population in rural areas;
- agricultural producers to a macro-level forecasting platform, control of agricultural machinery, tools for weather forecasts and objective control of plant vegetation, production planning and control elements, artificial intelligence tools, agricultural ensuring the integration of the digital platform of Jaligi with the processes of the digital economy.<sup>157</sup>

A farm collects a lot of information about crops, soil, as well as fertilizer application data, weather data, equipment and animal health. Smart sensors are already being used worldwide to monitor and detect animal health problems.

The goal of agriculture is to optimize processes and efficiently use available resources.

Access to real-time harvest, planting and yield data, as well as help agribusinesses better than others in forecasting agricultural property values and gaining unprecedented insight into the commodity market can give.

#### **Essential Features of a Smart Farming Solution<sup>158</sup>**

- Livestock Tracking and Geofencing
- Smart Logistics
- Smart Pest Management
- Accurate Weather Predictability
- Predictive Analysis for Crops
- Remote Monitoring
- Sensor-based Field and Resource Mapping
- Intelligent Irrigation System
- Drone Monitoring
- Stats on Livestock Feeding
- Smart Greenhouses

<sup>157</sup> <https://m.kun.uz/uz/news/2019/04/11/ozbekistonda-aqlli-qishloq-xojaligi-texnologiyalari-joriy-etiladi>

<sup>158</sup> <https://www.iotforall.com/smart-farming-technology-and-benefits>

According to foreign experience, there are a number of advantages of applying new technologies in agriculture and using them in the economy.

**Advantages of smart farming.**<sup>159</sup>

- It increases their yields
- Reducing their costs
- Improved environmental stewardship
- Less human errors
- Data collection and analysis

These are some of the many advantages of smart farming. As you can see, smart farming technologies have the potential to transform agriculture, making it more efficient, sustainable, and profitable.<sup>160</sup>

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<sup>159</sup> <https://community.nasscom.in/communities/agritech-solutions/5-advantages-smart-farming#:~:text=It%20allows%20farmers%20to%20be,and%20improve%20their%20environmental%20stewardship.>

<sup>160</sup> <https://community.nasscom.in/communities/agritech-solutions/5-advantages-smart-farming#:~:text=It%20allows%20farmers%20to%20be,and%20improve%20their%20environmental%20stewardship.>

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