CURRENT STATE AND PROSPECTS OF TRANSFORMATION OF THE AGRICULTURAL STATISTICAL SYSTEM THROUGH DIGITAL TECHNOLOGIES

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Annotation: *Currently, information and communication technologies play an important role in the development of agricultural production. The penetration of these technologies not only increases the quality of agricultural products, but also positively affects the increase in exports of food and other agricultural products. With the help of existing agricultural digital technologies, it became possible to analyze and process large amounts of data, concentrate various information on one platform, control and reduce production risks, and provide a large number of agricultural entities with the necessary information. This article analyzed the general state of digitization of World Agriculture and the state of this trend in Agriculture of Uzbekistan.*

Keywords: *agriculture, digital technology, smart agriculture, mobile phones, internet of things.*

Introduction: Agriculture plays an important role in ensuring food security in the world and achieving sustainable development [1] and the stability of this network largely depends on the introduction of information and communication technologies. With the help of digital technologies, it is expected to achieve sustainable development in the social and economic spheres of society and the state.

According to the available literature, thanks to the introduction of an innovative agricultural system in agriculture, it is possible to provide more than 90% of the demand for the production of agricultural products until 2050 [2]. Digital agriculture can be described as the application of digital technologies in agricultural value chains [3, 4]. In the agricultural system, digital technologies such as the Internet of items, sensors, drones, robotics, cloud computing, blockchain, artificial consciousness, decision support programs are used in the optimization of agricultural production processes [5], in value chains [6], in agricultural systems [7] and in management systems [8]. In general, digital agriculture is seen as a promising area of ensuring food security for the world's population, which is regularly increasing [9, 10].

Digital technologies have many useful aspects in agriculture not only to increase productivity, but also to find solutions to environmental and social problems. Digital agriculture, for example, plays an important role in solving the

problem of huge demand for scarce resources [4], ensuring food security [4], as well as fighting climate change. In the agricultural sector, digital technologies affect all consumers of the value chain, from producers to consumers of agricultural products [11] and close ties with other industries necessitate the creation of an innovative, flexible and competitive system of Doing Business [12]. The current practice in agriculture is distinguished by the fact that —exactly‖ and smart‖, and four forms of application of these practices can be distinguished [12, 13].

These include manufacturing process automation and robotics, agricultural applications and Information Systems, Cyber-Physical Systems, associated machines and tools, and large-scale data collection and analysis. In the future, the digital transformation of Agriculture is expected to help find solutions to all the problems of today and play an important role in facilitating the fight against it.

THEMATIC LITERATURE ANALYSIS:

The current state and prospects of transformation of the agricultural statistical system through digital technologies,the development of digital technologies can be seen in the R & D work of a number of foreign and respulika scientists.

A significant scientific work of foreign and domestic authors is definitely suitable for improving the methodology for using digital technologies in the agricultural statistical system and overcoming these problems in them.

Development of the theory of the effective use of digital technologies of the agricultural statistical system X.Bai, F.M.Alshammary, H.Abuhassna, R.A.Baron, M.Hammer, S.Barakat, U.Ashby and others made a worthy contribution.In this scientific study of mine, my analysis and suggestions on the existing digital technologies in the agricultural statistical system are given.

In addition, a.K.Thomer, N.Coldree and A.Powell's work conducts a multilateral analysis of the concept of the formation of a digital technology base of the agricultural statistical system, and the historical chronology of the emergence of this concept in scientific research is also indicated. Scientists F.Rossetti, R.Mozer and W.Rayleigh looks at the possibilities, threats and technologies for the introduction of digital platforms in the modernization of social processes.

Scientific research on the use of digital technologies of the agricultural statistical system in our country S.S.Gulyamov, A.T. Shermukhamedov, I.S.Tolibov, B.A.Begalov, A.X.Ayubov, A.M.Rakhmatullayevna, Z.Akbarova, T.Sh. Chodiev

B.Yu.Khodiev, G.Kuldosheva, R.X. Alimov, A. Almurodov, R.A. Fayziev, Sh.T. Ergasheva, N.M. Mahmudov, A.M. Jumaev, S.O. Homidov, P.A.Implemented by Allayarov et al.

Digital technologies of the agricultural statistical system have expanded the prospects for activities not only for statistics, but also for other areas. The next main effect of the current state and prospects for the transformation of the agricultural statistical system through digital technologies is that it provides a wide

range of opportunities for both agricultural enterprises and platform developers. Thus,in order to accelerate the exchange of data in each pir field and provide quality service, enterprises and organizations should be prepared for this situation, since digital transformation has become a requirement of the Times.In this research work,the current state of transformation of the agricultural statistical system by means of digital technologies was studied and given tacilifs.

RESEARCH METHODOLOGY

In this research work, the study of the current state of transformation of the agricultural statistical system through digital technologies

based on the open data of the statistical agency and the work of the above scientists,proposals were made. Global internet resources have also been used in the study of the description and methodologies of platforms that are being used and implemented in the statistical system.In the analysis of the data of the statistical agency under the president of the Republic of Uzbekistan, methods of grouping statistical data, comparative analysis, sampling observation were used. As a research methodology, comparative literature analysis, logical and structural analysis, grouping and quasi-comparative methods were used.

ANALYSIS AND RESULTS

Through the above survey, 63 articles were selected by searching for articles. Of this, 21 were articles in the Scopus base, 19 in the Web of Science base, and 23 in journals indexed on the google sholar platform. Below is an analysis of these articles. Digitization of agriculture leads to an increase in productivity in agricultural production processes, which helps to increase productivity and overcome poverty in rural areas [14].

The unobstructed flow of useful market information and the active role of supply chain participants can increase efficiency in agriculture and can be obtained using mobile phones [14]. Improving research, information and consulting services and electronic literacy among the population increases crop productivity, and is also the key to introducing modern investments such as innovative technologies and techniques, fertilizers [15]. In this information age, mobile telephony and ICT (ICT) are convenient tools for supplying information and consulting services and other information to farmers. Advanced or digital technologies such as unmanned aerial vehicles (UAVs), automated ground vehicles (UGVs), cloud computing, image processing, big data, wireless sensor networks (WSNS) are available in developed countries, particularly in EU countries, and are being introduced in agricultural production in recent years [16].

For example, the use of unmanned aerial vehicles in mapping weeds in Spanish corn fields has helped to use less herbicides and pesticides, as well as reduce labor costs [17]. Another example is the use of unmanned aerial vehicles to spray chemicals. The use of unmanned aerial vehicles significantly reduces the

waste of pesticides and fertilizers, which are economically and environmentally beneficial [18].

According to Ayim et al, [19] the use of automated ground machines in the process of harvesting apple fruit in Washington state helps to increase the accuracy of the operation and reduce labor costs. However, the rate of digitization in developing countries is different from that in developed countries. According to [20] digital technologies such as mobile phones, radio, television and computers are widely used in Africa. These technologies provide farmers with services and applications with extensive agricultural information such as market prices of products, weather forecasts, efficient application of agricultural products, and innovative methods of crop production. Aker and Fafchamps (2010)[21] found that there was a large difference in the price of products in Niger as a result of increased mobile phone coverage among farmers. The use of ICT (mobile phones, web platforms, radio and media) has increased efficiency in agriculture in Kenya and expanded agricultural products markets [22].

In another example, the use of SMS text notes has helped to increase the productivity of farmer Ho_jalik between smallholders in Northern Nigeria. [23] When it comes to Asian countries, [24] they found that smartphone use contributes to increasing farm income and non-agricultural income in China.

Gautam and other, [25] studied the effects of digitization in agriculture on farm income, as well as economic development, and found a positive relationship between them. The use of mobile phone-based services has improved the provision of farmers with valuable market data and reduced the influence of intermediaries in Bangladesh [26].

In another case, mobile phone-based information services positively affected the welfare levels of farmers in Pakistan, providing them with important information about agricultural practices. However, the impact of agricultural digitization on Central Asia has recently been on the agricultural sector, so materials are scarce.

Zhumakhanova ., [27] note that Kazakhstan has recently introduced GPS navigation, field electronic maps, and unmanned aerial vehicles for agricultural techniques as digital technologies. According to Sinitsa et al [2], Kazakhstan intends to fully digitize Agriculture and apply an "electronic agriculture" program that digitizes arable land and creates maps of the agrochemical state of the soil. And in Uzbekistan, blokcheyn, artificial intelligence technologies and electronic public services are being developed rapidly in agriculture.

Laser leveling technology in Tashkent region allows farmers to improve the efficiency of not only leveling the ground, but also the use of Water Resources, which is especially important in the period when water resources are shrinking [28]. Muzafarov and Eshmurodov [29] propose their own —expert advisory systemllin order to increase farm productivity and reduce farmers ' time losses by installing sensors on cotton fields in the Chust District of Namangan region. However, the

impact of this technology on agricultural efficiency or farm income has not yet been studied. Agriculture is an important component of Uzbekistan's national economy, employing 33.2 percent of the workforce and accounting for 28.7 percent of gross domestic product [31].

In addition, agriculture employs about 26% of the rural population, and for Uzbekistan, where 49% of citizens live in rural areas, this is very important [30, 31]. The main agricultural crops are cotton, wheat, potatoes, fruits and vegetables. But, in recent years, the consequences of climate change, water shortages, increasing crop diseases and other agricultural problems have been a serious threat to agricultural productivity and are significantly cutting farmers ' income. So, the need to introduce digital technologies is really relevant. As a result of the increase in the penetration of the mobile network and the use of smartphones in Uzbekistan, the flow of information has increased, and telecommunication costs have decreased.

As a result, new ways of developing digital technologies are expanding. Statista.com according to [32] in Uzbekistan, the number of mobile subscriptions per 100 inhabitants rose from 101.2 in 2019 to 117 in 2022 and is projected to reach 131.8 in 2025, while internet access has increased from 60.5% in 2020 to 64.5% in 2022. In 2025, an increase of 67.7 percent was projected. The use of mobile phones in Uzbekistan in the provision of various services and data delivery in the banking, energy and agrotechnical sectors is growing rapidly.

On the basis of this data, it can be concluded that a large potential opportunity is being created in Uzbekistan to digitize agriculture and the entire economy.

CONCLUSION:

Digital transformation has changed all aspects of the economy and resulted in new business initiatives such as new business models, new products and services. This affected the performance and management of business processes in all sectors. Obviously, the benefits of applying digital technologies are known to everyone, and mainly Big Data, the Internet of Things, artificial intelligence, blockchain unmanned aerial vehicles, GPS, information and consulting mobile applications are widely used.

Improved forms of agribusiness, supported by digital technologies, made it possible to perform agricultural tasks faster and easier, save time and funds, improve flexibility and efficiency in production processes. This is exactly the important reason for studying the new, advanced capabilities of digital technologies. Of course, Uzbekistan also has many advantages over the introduction of digital agriculture, which can be used to rationally use scarce resources, increase labor productivity and increase crop yields.

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