

Alena Zavadzich, Ilya Ilyushenka
 Science tutor *T. Myslyva*
 BSAA (Gorki)

AGRICULTURAL DRONE MARKET: FORECAST AND PROSPECTS TO BELARUS

It is well known that a powerful and modern agro-industrial complex is an effective tool for achieving sustainable development goals and ensuring the country's economic well-being and food security [1]. At the same time the intensification of the globalization processes of the world economy has led to a situation where the agricultural production of all countries without exception, regardless of the level of their economic development, has encountered a number of serious problems. The main ones are associated with both the increasing demand for non-renewable energy resources, fresh water shortage, and with the acceleration of urbanization processes and the reduction of areas suitable for growing crops, accompanied by increased erosion processes and desertification caused by global warming [2]. Proceeding from this, it becomes urgent to search for solutions that allow adapting agricultural production both to global climate warming and to other problems. In this context, ICT-driven tools and technologies to enhance decision making through accurate, reliable and timely information have an important role to play. One of the latest developments is the increase in the use of small, unmanned aerial vehicles (UAVs), commonly known as drones, for agriculture. Drones are remote controlled aircraft with no human pilot on-board. These have a huge potential in agriculture in supporting evidence-based planning and in spatial data collection [3].

The purpose of present study was twofold: 1) to analyze the existent global agricultural drone market; 2) to review the prospects of Belarus in the utilization of UAV's capabilities in agriculture production. Firstly, it is necessary to underline that the global agriculture drone market in 2020 is estimated for more than US\$ 1.3 Bn and expected to reach a value of US\$ 10.5 Bn by 2028 with a significant Compound Annual Growth Rate (CAGR) of 35.6% [4]. The information about the segmentation of the global agricultural drone market is presented on Figure 1.

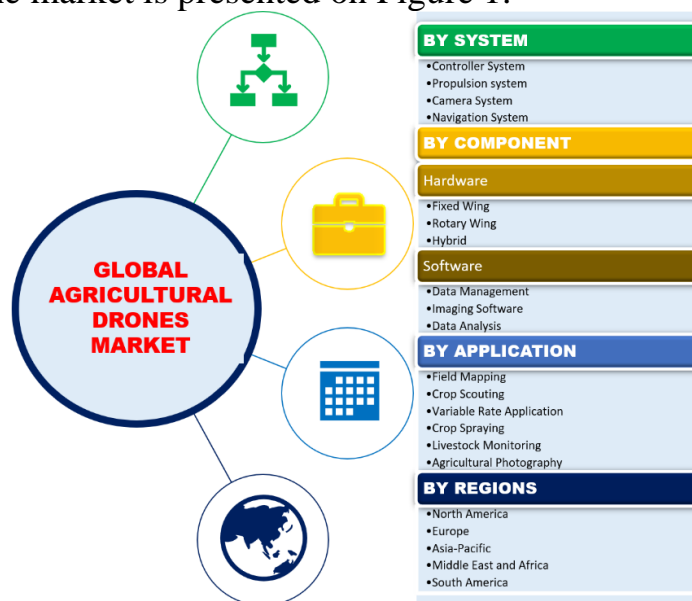


Figure 1. Segmentation of the global agricultural drone market

The growth of this market segment can be attributed to the increase in high-risk private equity investments in newly created small high-tech promising companies (or well-established venture capital firms) focused on development and production for the development of agriculture drones and the availability of software solution to aid field survey and data analysis. The key players in the global agricultural drone market present by 6 US companies (Aero Vironment Inc., Trimble Inc., 3D Robotics, AgEagle Aerial Systems, Inc., DroneDeploy, Precisionhawk and Sentera, Inc.), 3 Canadian companies (Aeryon Labs, Draganfly Innovations and Resson Aerospace Corporation), 2 France companies (Parrot Drones and Effidence) 2 Chinese companies (DJI and Da-Jiang Innovations Science & Technology Corporation Ltd), as well as companies from other countries such as Yamaha Motor Company (Japan), Avular BV (Netherlands), Blue Sky Agro (India).

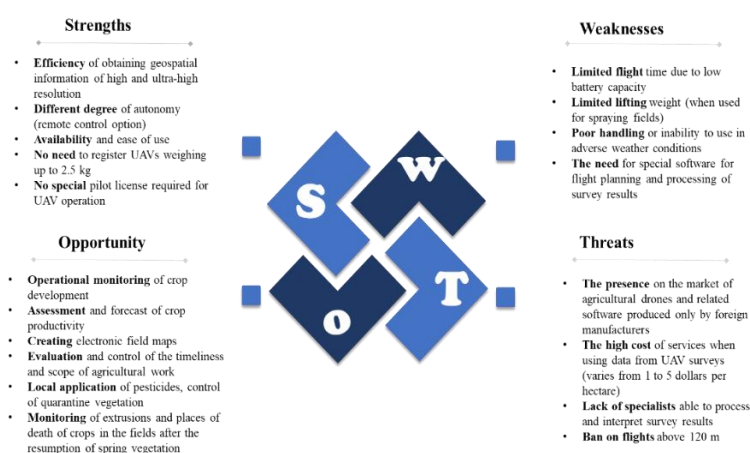


Figure 2. SWOT analysis of UAV use in agriculture of the Republic of Belarus [2]

The use of unmanned aerial vehicles in agriculture is an innovation for the Republic of Belarus. A promising area that is just beginning to develop in Belarus is the use of ultra-high-resolution remote sensing data obtained from UAVs for monitoring and forecasting the productivity of fodder and grain crops. However, the use of agricultural drones has not found wide application for a number of reasons of an objective and subjective nature (Figure 2).

Nevertheless, this technique is gradually being introduced into agricultural production, primarily in conjunction with the introduction of elements of the precision farming system.

REFERENCES:

1. Transforming our world: The 2030 agenda for sustainable development (2019) United Nations. Sustainable development goals knowledge platform [Electronic resource]. – Mode of access: <https://sustainabledevelopment.un.org/>. – Date of access: 06.03.2021.
2. Myslyva, T. Problems, prospects and experience in the implementation of precision farming in the Republic of Belarus in the context of national land use / T. Myslyva / Proceedings of the XI International Scientific Agricultural Symposium «Agrosym 2020». East Sarajevo. Faculty of Agriculture. – 2020. – P. 972–978.
3. Sylvester, G. E-agriculture in Action: Drones for Agriculture / G. Sylvester. – Food and Agriculture Organization of the United Nations and International Telecommunication Union: Bangkok, 2018. – 126 p.

4. Agriculture Drones Market with COVID-19 Impact Analysis, by Application, Offering, Farming Environment, Farm Produce, Component, and Geography - Global Forecast to 2025. – Markets & Markets report, 2020. – 255 p.

Darya Ilyina

Science tutor *V. Egorova*

VSTU (Vitebsk)

PROBLEMS AND PROSPECTS FOR THE DEVELOPMENT OF THE ECONOMY OF BELARUS IN THE CONDITIONS OF GLOBALIZATION

Globalization is a global development trend at the present time. It opens up new opportunities for countries and creates new problems. Globalization can lead to increased productivity through the rationalization of global production and the diffusion of advanced technology, as well as competitive pressures to innovate continuously globally. It contributes to increased competition and increased quality of goods, as enterprises have to fight more actively for their place in the market. Currently, the Republic of Belarus seeks to expand foreign economic relations and reduce dependence on the Russian market. In case of successful implementation of measures aimed at developing the market, the country will be able to attract foreign capital for the technological development of industry and increase the export of goods and services.

The national economy of the Republic of Belarus is an inseparable part of a single world economy and, by virtue of this, participates in the world reproduction process. The Republic of Belarus as a small open economy in the context of globalization of the world economy is taking a whole range of organizational, economic and political measures aimed at developing relations with other countries and innovative development of the national economy. At the same time, the country is experiencing the growing impact of globalization processes on all spheres of its life.

Globalization is one of the most important reasons for today's rapid economic growth, but it also leads to new problems and threats to the economic development of countries. Experts warn of the following types of threats to national sovereignty in the context of globalization:

1. The threat of polarization. The integration of national economies into the global system has not diminished inequality.

2. The threat of increasing uneven development.

3. Threat to national producers. Accelerated integration with global markets poses the dangers associated with unusually global competition for domestic producers.

4. Threat to national sovereignty. The high degree of dependence of national economies on global processes limits the capabilities of the state and reduces the effectiveness of measures to regulate them.

5. Threat to national security.