| SECTION 3 | ECONOMICS OF AGRICULTURE AND AGRO-INDUSTRIAL COMPLEX |

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DIGITIZATION IS A KEY FACTOR IN ENSURING THE COMPETITIVENESS AND SUSTAINABILITY OF AGRICULTURAL PRODUCTION

The transition to new technologies has always been driven by the desire to utilize production resources more efficiently, ensuring the resolution of tasks in a qualitative and swift manner. In agricultural production, this is manifested in increased productivity, reduced costs, enhanced process efficiency, and more.

Industry 4.0 and new technologies are transforming agriculture into a new realm of research - Agriculture 4.0. This implies the integration of innovative technologies in agricultural production, such as big data, cloud computing, advanced robotics, artificial intelligence, and more [2].

The realm of digital technologies in agriculture encompasses various technical solutions: from small mobile applications aiding decision-making processes to the use of remote sensing technologies for data collection, as well as drones and robots for automating diverse production processes [1].

Hence, two types of digital solutions can be identified: the first being individual technologies like drones, unmanned machinery, fuel

sensors, etc. The second type involves ERP systems that enable the integration of all business processes and unify financial and production aspects. Such a service allows agricultural producers to monitor the entire process, assess the effectiveness of applied technologies, and track potential issues at each stage of the business chain [3].

In agricultural production, there is a range of digital transformation technologies:

Farm Management Systems - integrated approaches to managing agricultural enterprises based on the use of satellite imagery, video analytics, sensor data, weather stations, and other sources.

Precision Farming - a combination of innovations, technical tools, and decision-making systems aimed at monitoring fertility parameters that impact plant growth.

Precision Livestock Farming - innovative devices that measure stomach acidity, hoof condition, readiness for mating, pregnancy progress, etc., enabling better tracking of animal health, development of individual treatment and feeding methods.

Digital Agrometeorological Service - electronic weather stations that allow real-time monitoring of various indicators: air and soil humidity, ambient air and soil temperature at different depths, wind speed, and more.

Agricultural Machinery Tracking - technology that facilitates the optimization of vehicle movement within the enterprise's territory.

Unmanned Aerial Vehicles (UAVs) - technology used for planning planting schedules, harvesting, creating field maps, and conducting land area inventories.

Big Data - technology that enables processing a significant volume of diverse information for further use in forecasting agricultural activities and making managerial decisions.

Robotics - the use of robots to automate routine, repetitive processes in agriculture.

Biotechnology and Genetic Engineering - methods for conserving natural resources, protecting the environment, and approaches to sustainable agricultural production, which are enhanced within this technology.

Marketplaces - electronic trading platforms that bring together sellers and buyers, facilitating their interaction.

Therefore, digitization plays a crucial role in ensuring the competitiveness and sustainability of agricultural production.

Through the utilization of modern technologies, including the Internet of Things, big data, cloud computing, and others, optimal resource utilization, increased productivity, reduced losses, and sustainable production can be achieved. Digital solutions enable more efficient tracking and analysis of processes, informed decision-making, and the enhancement of production chains. Thus, digitization becomes a necessary condition for the development of the contemporary agricultural sector, ensuring its stable functioning and competitiveness in the international market.

Literature

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ВИКОРИСТАННЯ ВІДХОДІВ СІЛЬСЬКОГО ГОСПОДАРСТВА ДЛЯ ВИРОБНИЦТВА ЕНЕРГІЇ: МОЖЛИВОСТІ ТА ПЕРСПЕКТИВИ

В умовах цілеспрямованого знищення агресором енергетичної інфраструктури необхідно максимально