Digital Agriculture - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 120 pages | Mordor Intelligence

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Report description:

The Digital Agriculture Market size is estimated at USD 20.01 billion in 2024, and is expected to reach USD 32.96 billion by 2029, growing at a CAGR of 10.5% during the forecast period (2024-2029).

The increasing awareness about the benefits of digital agriculture in optimizing agricultural production has resulted in a great boom in the agriculture market. With the growing food demand, owing to the increasing population, the adoption of digital agriculture tools is inevitable.

Growing concerns regarding food security and nutrition are anticipated to provide several opportunities for the industry to prosper. The United States is expected to invest a significant share in facilitating the ecosystem for future foods. As more consumer insights are developed in terms of 'fresh-from-farm-to-table,' the availability of freshly harvested vegetables across retail outlets is expected to increase in the United States. For instance, in June 2021, the National Science Foundation's Cyber-Physical Systems program and the USDA's National Institute of Food and Agriculture (NIFA) provided USD 7 million in grants to researchers led by engineers from the Iowa State University and the University of Illinois Urbana-Champaign on operations of farm managing, like sensing, modeling, and decision-making at the level of individual crops.

The United Kingdom government, in its industrial strategy, has put artificial intelligence (AI) aimed at escalating crop productivity. The country has committed to boosting R&D spending to 2.4% of the GDP by 2027. Furthermore, a new EUR 500 million project has been announced in Cambridge, which seeks to cement Britain's position as an innovator in the growing agri-tech industry. The development will accommodate up to 4,000 employees and will bring together agricultural and tech companies to spearhead a center of global agricultural innovation and productivity.

Strategic policymaking for precision farming by the countries is expected to encourage farmers to adopt the related technologies. Farm advisory services are bridging the gap between science and practice. These services help farmers in adopting new innovative technologies, which is the latest trend in the market. They are more efficient in utilizing the available resources, are cost-effective, and can help face challenges.

Technological advancements and innovations are among the major factors driving the digital agriculture market, helping farmers maximize their yield and minimize losses with efficient use of resources. Hence, the increased need to meet the demand of the growing population, along with the limited scarcity of natural resources, is anticipated to drive the market for digital farming globally during the forecast period.

Digital Agriculture Market Trends

Increasing Pressure for Higher Productivity and Improved Crop Health

There is constant pressure on the farmers to produce more food and animal feed with lesser amounts of chemicals. At the same time, it is essential to use less energy and labor while improving the management of environmental land and water. With the population growing rapidly, it is becoming very difficult to feed the increasing population, thereby creating high pressure to increase agricultural productivity. The use of software such as precision farming, along with the Internet of Things (IoT) tools, is a solution to all these requirements.

According to the FAO data, the yield for major cereal crops like rice, wheat, barley, corn, and other grains reduced considerably from 41,079 hg/ha in 2019 to 40,708 hg/ha in 2020 for wheat; a similar reduced trend for barley and other coarse grains was observed. Precision farming helps farmers know the seeds that have to be planted, the number of fertilizers that need to be applied, the best time to harvest the crops, and the expected output.

The adoption of technology in Europe and North America has increased crop productivity. For instance, in June 2022, Idele (Institut d'Elevage), France, developed a data-based online application called CAP'2ER, with thirty sets of activity data entered into the program to determine agro-ecological indicators. This application analyzes five sets of databases, such as livestock, manure management, fields, feed, and energy consumption, by analyzing total annual fuel consumption, animal productivity (fertility, growth, and marketing age), feed purchased, manure quantities and management, number of trees and thickets, shrubs, hedges, grass strips, stone piles and stone walls, and water bodies on the farm.

The Brazilian Precision Agriculture Research Network (Embrapa), established by Brazil Agricultural Research Corporation, has generated various tools for soybean, maize, wheat, rice, cotton, pasture, eucalyptus, pines, and other crops. The use of precision agriculture in Brazil has led to improvements in crop yields as well as environmental protection. For instance, in June 2022, a study was conducted by Embrapa instrumentation, Sao Carlos, in the winery Terras Altas (Ribeirao Preto, SP), in partnership with the Sao Paulo State University, to produce distinguished wines by precision farming by double pruning systems and other management practices.

Thus, the use of precision farming software, such as MapShots, AgDNA, AgroSense, and others, will help increase crop productivity, thereby improving soil health and driving the demand for digital agriculture in other regions of the world.

Asia-Pacific is the Fastest-growing Market

The Chinese agricultural sector has undergone a groundbreaking revolution with respect to the adoption of smart farming practices in recent years. Although the advent of sensor-based technologies, such as Internet of Things (IoT) cellular devices, gear tooth sensor-based irrigation and fertilization equipment, and valve position sensors, among others, is relatively new in the

domain, the country has been witnessing a new-found demand for sensors, primarily due to the increased rate of mechanization and smart agricultural practices adopted by the farmers.

China's contribution rate to its agricultural science and technology progress indicates the country's revitalization strategy in terms of agricultural modernization. In 2020, the Chinese central government launched a pilot project named ''digital village', promoting the use of information technology to stimulate domestic consumption, leading to a boom in the mobile internet-driven economy.

Similarly, the rising demand for digitization in Indian agriculture is well acknowledged, with efforts being made toward digitizing the prevailing value chain. In September 2021, the Union Minister of Agriculture & Farmers Welfare launched the initiation of the Digital Agriculture Mission 2021-2025 while signing five memoranda of understanding (MoUs) with CISCO, Ninjacart, Jio Platforms Limited, ITC Limited, and NCDEX e-Markets Limited (NeML), to forward digital agriculture through pilot projects. The Digital Agriculture Mission 2021-2025 aims to support and accelerate projects based on new technologies, like AI, blockchain, remote sensing, and GIS technology and the use of drones and robots.

In February 2020, the Jio Agri (JioKrishi) platform was launched by Reliance Group of Company to digitize the agricultural ecosystem along the entire value chain to empower farmers. The core function of the platform uses stand-alone application data to provide advisory services. The advanced functions use data from various sources, feed the data into artificial intelligence (AI)/machine learning (ML) algorithms, and provide accurate, personalized advice. The pilot project for this initiative will take place at Jalna and Nashik (Maharashtra). Thus, the rise in technology-driven agricultural equipment availability and an increase in government funding for the establishment of tech firms are driving the digital agriculture market in the Asia-Pacific region.

Digital Agriculture Industry Overview

The digital agriculture market is highly fragmented, with various small players competing against giant firms to occupy market share. Some of the major revenue-generating companies in the market include AGCO Corporation, HummingBird Technologies, IBM Corporation, Gamaya SA, Bayer Cropscience AG, Microsoft Corporation, and Trimble Inc.

The market is expected to be more consolidated in the future, with the major players expanding and investing in their businesses by adopting various strategies, such as mergers and acquisitions, expansions, partnerships, and product launches. The companies are likely to introduce new product lines and partner with other firms to diversify their digital agriculture businesses.

Additional Benefits:

  The market estimate (ME) sheet in Excel format
 3 months of analyst support

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