

Smart Agriculture Market Report by Agriculture Type (Precision Farming, Livestock Monitoring, Smart Greenhouse, and Others), Offering (Hardware, Software, Service), Farm Size (Small, Medium, Large), and Region 2024-2032

<https://marketpublishers.com/r/S33762072504EN.html>

Date: July 2024

Pages: 137

Price: US\$ 3,899.00 (Single User License)

ID: S33762072504EN

Abstracts

The global smart agriculture market size reached US\$ 17.3 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 35.7 Billion by 2032, exhibiting a growth rate (CAGR) of 8.2% during 2024-2032. The rapid population growth and food security, rising need for increased productivity, escalating resource scarcity, elevating erratic weather patterns, significant technological advancements and favorable government initiatives, are some of the major factors propelling the smart agriculture market growth.

Smart Agriculture Market Trends:

Major Market Drivers: The growing awareness among farmers about the benefits of employing smart agriculture equipment and practices, along with the escalating demand for quality food across the globe, is primarily driving the growth of the market.

Key Market Trends: The integration of technologically advanced agricultural robotics in farming, such as autonomous tractors and flying drones that help farmers produce food at low costs, is one of the significant key trends for the market.

Geographical Landscape: According to the report, North America accounted for the largest market share. The growth in the region can be attributed to the advanced infrastructure, robust technological innovation, and a strong focus on optimizing agricultural processes. Moreover, North America has a highly developed ecosystem of technology, and the presence of key market players in the region is creating a positive outlook for the market.

Competitive Landscape: Some of the leading smart agriculture market companies are

AG Leader Technology, AGCO Corporation, AgJunction Inc. (Kubota Corporation), CLAAS KGaA mbH, CropMetrics LLC (CropX Inc.), Deere & Company, DICKEY-john, Farmers Edge Inc., Gamaya, Granular Inc. (Corteva Inc.), Raven Industries Inc. (CNH Industrial N.V.), and Trimble Inc., among many others.

Challenges and Opportunities: The smart agriculture market faces challenges related to high initial investment costs, limited awareness and adoption among farmers, and the complexity of integrating various technologies. However, there are significant opportunities driven by the need to increase food production sustainably, optimize resource use, and mitigate the impact of climate change on agriculture.

Smart Agriculture Market Trends:

Rapid Population Growth and Rising Food Security Concerns

The growing population, inflating disposable incomes, and elevating standards of living have resulted in the increasing food demand. As a result, farmers are using smart agriculture techniques like variable rate seeding and precision fertilization, which help them optimize yields and minimize wastage. According to a data report, in order to meet the global food demand in 2050, agricultural production has to increase by 48.6 percent worldwide. Besides this, declining per hectare area of arable land and low availability of skilled labor are also augmenting the need for smart agriculture practices. Moreover, the elevating level of urbanization is enticing rural households to migrate to urban areas, as these areas offer a plethora of job opportunities. This shift has resulted in a shortage of farm labor in various regions. For instance, according to a survey by the Centre for Monitoring the Indian Economy (CMIE), India witnessed a drop in the number of people employed in agriculture from 158.2 million in 2022 to 147.9 million in 2023. Looking ahead, the Indian Council of Food and Agriculture anticipates a 25.7% decline in the percentage of agriculture workers in India by 2050. By adopting smart agriculture practices, farmers can optimize resource utilization, mitigate resource scarcity, and contribute to sustainable agricultural practices. This, in turn, is anticipated to propel the smart agriculture market demand in the coming years.

Technological Advancements

Various key market players are introducing technologically advanced sensors to enable efficient monitoring and facilitate timely decisions. Moreover, numerous farmers are increasingly adopting precision farming since it focuses on the observation, measurement, and response to crop variability between fields. Additionally, precision farming, which will overtake other advances in agriculture by the end of 2030, is predicted to propel the smart agriculture market revenue in the coming years.

Furthermore, according to ETNO, the number of IoT active connections in agriculture was expected to increase in the European Union through the years 2022-2025. It was recorded at 46.92 million connections in 2022 and is expected to reach 70.26 million by 2025. Besides this, various technology providers are forming partnerships to offer more advance precision farming tools and devices to farmers. For instance, in October 2023, Deere & Co partnered with 2 Sweden-based Delaval on the Milk Sustainability Center and Norway-based Yara on digital precision agriculture tools for sustainability. This partnership aims to help farmers track livestock and fertilizer data so they can make smarter business decisions that are better for the environment as well.

Implementation of Favorable Government Initiatives

Government initiatives aimed at maximizing productivity, especially in developing countries, are encouraging the use of modern farming technologies. For instance, in India, the Maharashtra government introduced a policy following the Center's clearance of the use of drones to spray pesticides in October 2022. In addition to this, the introduction of several policies, subsidies, tax incentives, and grants to incentivize agricultural activities and alleviate financial burdens on farmers is augmenting the smart agriculture market share. For example, the Canadian government introduced the 'Canadian Agricultural Loans Act,' which offers farmers a loan of up to US\$ 500,000 while purchasing land or a tractor. In line with this, concerned regulatory authorities are also focusing on training programs for machinery operators. Similarly, India's Ministry of Agriculture & Farmers' Welfare has undertaken several initiatives, including the National e-Governance Plan in Agriculture (NeGPA). Under this scheme, funds are provided to facilitate the use of modern technologies such as Artificial Intelligence (AI), Machine Learning (ML), robotics, drones, data analytics, and blockchain to encourage digital agriculture in the country.

Smart Agriculture Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global market report, along with the smart agriculture market forecast at the global, regional, and country levels for 2024-2032. Our report has categorized the market based on agriculture type, offering, and farm size.

Breakup by Agriculture Type:

- Precision Farming
- Livestock Monitoring
- Smart Greenhouse

Others

Precision farming dominates the market

The report has provided a detailed breakup and analysis of the market based on the agriculture type. This includes precision farming, livestock monitoring, smart greenhouse, and others. According to the report, precision farming represented the largest segment.

Precision farming leverages cutting-edge technologies such as GPS, remote sensing, and data analytics to provide farmers with detailed insights into their fields' conditions. This helps farmers to make informed decisions in real-time. As a result, the demand for precision farming techniques and devices is growing, which is bolstering the smart agriculture market recent price. Various farm owners are collaborating with technology providers to deploy precision farming practices. For instance, in October 2023, Zuari FarmHub, a leading agritech company in India, announced its partnership with CropX Technologies, a global agri-tech company specializing in digital agronomic solutions. The collaboration aims to revolutionize farming practices by introducing real-time monitoring technology that empowers farmers with data-driven insights for enhanced productivity and sustainability.

Breakup by Offering:

Hardware

Software

Service

Hardware holds the largest share in the market

A detailed breakup and analysis of the market based on the offering has also been provided in the report. This includes hardware, software and service. According to the report, hardware accounted for the largest market share.

Smart agriculture market statistics by IMARC indicate that the hardware components such as sensors, drones, GPS devices, and automated machinery serve as the foundation for gathering critical data and executing precision-based tasks. Farmers heavily rely on hardware to acquire accurate and real-time information about various parameters like soil moisture, temperature, crop health, and weather conditions. Consequently, various market leaders are providing technologically advanced devices

to farmers to derive meaningful insights and make informed decisions regarding agricultural practices. For instance, Bhu-Vision was officially launched in August 2023 at AICRP (ICAR-IIRR), Hyderabad. It is a revolutionary IoT-based automated soil testing and agronomy advisory platform. This system seamlessly conducts 12 key soil parameter tests in just 30 minutes, providing quick, accurate results directly to farmers and stakeholders through a soil health card on their mobile devices. Such innovations are projected to positively impact the smart agriculture market outlook in the coming years.

Breakup by Farm Size:

Small
Medium
Large

Medium size farm account for the majority of the market share

The report has provided a detailed breakup and analysis of the market based on the farm size. This includes small, medium, and large. According to the report, medium represented the largest segment.

Medium-sized farms occupy a unique position, balancing scale and resources to harness the benefits of both efficiency and adaptability. Medium-sized farms often possess the resources and infrastructure necessary to adopt modern smart agriculture technologies without the complexities associated with larger operations. They can invest in precision farming equipment, such as sensors, drones, and data analytics systems, enabling them to optimize crop management and resource utilization effectively. Furthermore, medium-sized farms are well-positioned to implement technological advancements while maintaining a level of personal oversight that might be challenging for larger operations. This adaptability allows them to respond to changing conditions swiftly and make informed decisions based on real-time data.

Breakup by Region:

North America
United States
Canada
Asia-Pacific
China

Japan
India
South Korea
Australia
Indonesia
Others
Europe
Germany
France
United Kingdom
Italy
Spain
Russia
Others
Latin America
Brazil
Mexico
Others
Middle East and Africa

North America exhibits a clear dominance in the market

The market research report has also provided a comprehensive analysis of all the major regional markets, which include North America (the United States and Canada); Europe (Germany, France, the United Kingdom, Italy, Spain, Russia, and others); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and others); Latin America (Brazil, Mexico, and others); and the Middle East and Africa. According to the report, North America accounted for the largest market share.

The smart agriculture market overview indicates that the growth in the region can be attributed to the advanced infrastructure, robust technological innovation, and a strong focus on optimizing agricultural processes. Moreover, North America has a highly developed ecosystem of technology, and the presence of key market players in the region is creating a positive outlook for the market. Various farming technology providers are entering collaborations and partnerships to offer advanced to the farmers. For instance, Trimble Agriculture, based in Westminster, Colorado, US, and xFarm Technologies announced a partnership in November 2022. Trimble, the global player in precision farming technology, provides farmers with more valuable and efficient solutions through integration with the xFarm app developed by tech company xFarm

Technologies, which uses its digital platform to support and simplify the work of 120,000 farms spread across 1.7 million hectares in over 100 countries. Moreover, farmers in North America recognize the potential of technology to mitigate these challenges and enhance their competitiveness in a global market.

Competitive Landscape:

The market research report has provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major companies have also been provided. Some of the key players in the market include:

AG Leader Technology
AGCO Corporation
AgJunction Inc. (Kubota Corporation)
CLAAS KGaA mbH
CropMetrics LLC (CropX Inc.)
Deere & Company
DICKEY-john
Farmers Edge Inc.
Gamaya
Granular Inc. (Corteva Inc.)
Raven Industries Inc. (CNH Industrial N.V.)
Trimble Inc.

(Please note that this is only a partial list of the key players, and the complete list is provided in the report.)

Smart Agriculture Market Recent Developments:

January 2024: Precision Planting unveiled its newest product, a fully custom, factory-built planting system called CornerStone. The CornerStone Planting System comes fully built with everything but the planter bar and is integrated with Precision Planting's technology.

November 2023: Hungarian-based ABZ Innovation launched a new crop spraying drone that can carry 30 liters of pesticides each flight. Powered by a 25000mAh battery, the L30 is designed for farms around 80 to 100 hectares in size and can spray up to 21 hectares per hour.

October 2023: Zuari FarmHub, a leading agritech company in India, announced its partnership with CropX Technologies, a global agri-tech company specializing in digital agronomic solutions. The collaboration aims to revolutionize farming practices by introducing real-time monitoring technology that empowers farmers with data-driven

insights for enhanced productivity and sustainability.

Key Questions Answered in This Report

1. What was the size of the global smart agriculture market in 2023?
2. What is the expected growth rate of the global smart agriculture market during 2024-2032?
3. What are the key factors driving the global smart agriculture market?
4. What has been the impact of COVID-19 on the global smart agriculture market?
5. What is the breakup of the global smart agriculture market based on the agriculture type?
6. What is the breakup of the global smart agriculture market based on the offering?
7. What is the breakup of the global smart agriculture market based on farm size?
8. What are the key regions in the global smart agriculture market?
9. Who are the key players/companies in the global smart agriculture market?

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