

Smart Farming Market to Reach \$22.45B by 2031, Fueled by AI, IoT, Robotics and Precision Agriculture | DataM Intelligence

Smart farming market to reach \$22.45B by 2031, driven by AI, IoT, and robotics, enabling higher yields, lower costs, and sustainable agriculture.

AUSTIN, TX, UNITED STATES, August 8, 2025 /EINPresswire.com/ -- The [Smart Farming Market](#) reached US\$ 11.12 billion in 2022 and is projected to climb to US\$ 22.45 billion by 2031, expanding at a CAGR of 9.1% during 2024–2031.

Smart farming, also known as precision agriculture, represents a modern farming approach that integrates advanced technologies such as IoT

sensors, AI algorithms, robotics, drones, satellite imagery, and data analytics. These innovations are used to optimize agricultural operations, boost productivity, reduce resource waste (including water, fertilizers, and electricity), lower production costs, and promote long-term environmental sustainability.

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The Smart Farming Market is set to reach US\$ 22.45 B by 2031 at 9.1% CAGR, driven by AI, IoT, robotics, and blockchain for sustainable, efficient agriculture worldwide.”

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Latest News:

1. A UK-based startup launched an IoT and AI-powered pest detection system capable of identifying pests like the red palm weevil up to three months earlier than conventional methods, significantly reducing pesticide

use.

2. In the U.S., AgTech funding saw a slowdown in the first quarter of 2025, with venture deals declining nearly 25%. However, precision farming, especially robotics and smart field equipment, continues to attract strong investor interest with billions in deal value over the past year.

3. In India, Maharashtra state unveiled the Rs 500 crore “MahaAgri-AI Policy 2025–2029,” introducing AI, IoT, drones, and blockchain to modernize farming operations, train farmers, and improve product traceability for exports.

Market Dynamics:

Drivers:

1. Rapid adoption of intelligent sensor networks and autonomous machinery is cutting production costs and reducing the consumption of water, fertilizers, and fuel.

2. Growing demand for food security, climate resilience, and resource-efficient farming fuels market expansion.

3. Government incentives, such as India's Production Linked Incentive schemes for agricultural drones, are accelerating technology uptake.

Restraints:

1. High initial product costs make smart technology inaccessible for smaller farms, especially in developing regions.

2. Supply chain disruptions and regulatory bureaucracy continue to pose challenges.

Opportunities:

1. Expansion in Asia-Pacific-now the fastest-growing region.

2. Continuous innovation is opening new segments like vertical farming and digital livestock monitoring.

Recent Developments:

1. Deployment of AI-powered pest detection systems to improve yield and reduce chemical dependency.

2. Continued capital flow into robotics and precision systems in agriculture, even amid overall investment slowdowns.

3. State-level policies in emerging economies to integrate AI, drones, and blockchain in farming operations, backed by significant public funding.

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Technological Innovations:

1. AI and IoT pest control: Integrating pheromone traps with AI-enabled image recognition to detect pests early and automate alerts for farmers.
2. Autonomous machinery: Development of self-driving tractors, robotic harvesters, and drone-based spraying systems to optimize efficiency and reduce labor needs.
3. Hybrid connectivity solutions: Combining low-power wide-area networks (LPWAN) with 5G to improve reliability and reduce costs in remote farming regions.
4. Blockchain-based traceability: Ensuring transparent, tamper-proof tracking of produce from farm to fork.

Investment Analysis:

While total global AgTech funding dipped slightly in early 2025, precision farming remains one of the most attractive segments for investors. Robotics and smart equipment have seen nearly 50% growth in deal activity year-over-year. Startups focused on autonomous harvesting, AI-powered yield prediction, and precision irrigation systems are receiving multi-million-dollar funding rounds, signaling investor confidence in scalable, ROI-driven technologies.

Market Key Players:

Prominent players in the smart farming space include:

XAG

Ag Leader Technology, Inc.

AgJunction Inc.

Deere & Company

Afimilk Agricultural Cooperative Ltd.

DeLaval

AKVA Group

Aquabyte Inc.

BouMatic LLC

InnovaSea Systems, Inc.

In AI-enabled agriculture, notable companies also include Microsoft, IBM, Granular Inc., AgEagle Aerial Systems Inc., Google LLC, Cropin, Bayer AG, KissanAI, and Niqo Robotics.

Market Segmentation:

By Agriculture Type: Precision Farming, Livestock Monitoring, Fish Farming, Smart Greenhouse, Others.

By Offering: Hardware, Monitors, Controllers, Sensors, Software, Web Based, Cloud Based, Service, System Integration and Consulting, Support and Maintenance, Connectivity Services, Managed Services, Professional Services.

By Solution: Network Management, Agriculture Asset Management, Smart Water Management, Logistics and Supply Chain Management, Others.

By Farm Size: Small Farms, Medium Farms, Large Farms.

By Distribution Channel: Company Stores, E-Commerce, Specialty Stores, Others.

By Application: Yield Monitoring, Field Mapping, Crop Scouting, Weather Tracking and Forecasting, Irrigation Management, Feeding Management, Milk Harvesting, Fish Tracking, Others.

By End-User: Livestock, Agriculture, Aquaculture.

By Region: North America, South America, Europe, Asia Pacific, Middle East, and Africa.

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Regional Share

North America: Leading adoption of precision agriculture technologies, supported by strong infrastructure and capital availability.

Europe: Focus on sustainable agriculture and vertical farming innovations, backed by strict environmental regulations.

Asia-Pacific: Rapid growth driven by government initiatives, technology integration, and increasing food demand.

Australia: Strong AgTech ecosystem with advancements in robotics, automation, and microbial crop technologies.

Latest News – USA:

1. Despite a slowdown in broader AgTech investment, robotics and precision equipment segments have seen strong growth, with billions in deal value over the past year.
2. A U.S.-based robotics company secured significant funding to commercialize autonomous nut harvesters, aimed at addressing labor shortages in the agricultural sector.
3. Industry leaders have called for increased investment in rural connectivity infrastructure, such as 5G and open network technologies, to support nationwide adoption of precision farming.

Latest News – Japan:

1. Japanese research institutions and agricultural cooperatives are expanding trials of AI-powered greenhouse automation systems to optimize crop yields and reduce labor requirements.
2. Several prefectures have introduced pilot programs for integrating drones and IoT sensors in rice farming, targeting water conservation and pest management.
3. Partnerships between Japanese universities and global AgTech firms are emerging to develop climate-resilient crop varieties supported by precision farming tools.

Conclusion

The Smart Farming Market is set for strong expansion, expected to nearly double in size by 2031. The integration of AI, IoT, robotics, and blockchain is transforming traditional farming into a data-driven, sustainable, and highly efficient system. Although macroeconomic conditions have slowed some investment flows, precision farming remains a priority area due to its clear benefits in yield improvement, cost reduction, and sustainability.

Key growth drivers include the affordability of new technologies, supportive government policies, and improved connectivity infrastructure. Regions that combine these elements with targeted training and financing for farmers will lead the next wave of smart farming adoption. As the world faces mounting food security challenges, smart farming is no longer optional-it is becoming the cornerstone of the agricultural future.

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