

Precision Agriculture Market to Reach USD 18 Bn by 2031, Driven by Tech Adoption and Sustainable Farming Demand

Advancing with GIS, drones, and data analytics, precision agriculture enables higher yields, resource efficiency, and sustainable food production worldwide.

AUSTIN, TX, UNITED STATES,
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EINPresswire.com/ -- The global [precision agriculture market](#), also known as smart farming, harnesses advanced technologies such as GPS, Geographic Information Systems (GIS), remote sensing, drones, sensors, and data analytics to optimize agricultural productivity, efficiency, and

sustainability. By enabling farmers to make precise, data-driven decisions ranging from crop cultivation and fertilization to irrigation and pest management precision agriculture improves resource use and crop yields while minimizing environmental impact. With evolving global pressures to meet food demand amid limited arable land and climate challenges, precision

agriculture represents a critical shift in modern farming practices.

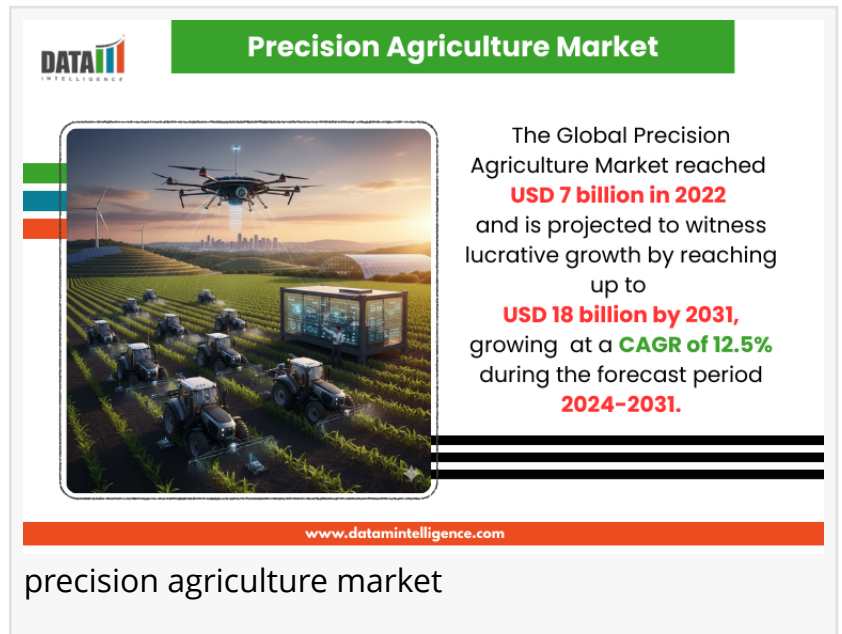
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Precision agriculture is no longer the future it is the present pathway to resilient, efficient, and sustainable farming. Its growth reflects our collective need to feed the world responsibly.”

DataM Intelligence

According to DataM Intelligence, the precision agriculture market achieved a valuation of approximately USD 7 billion in 2022 and is projected to grow to around USD 18 billion by 2031, reflecting a compound annual growth rate (CAGR) of 12.5% between 2024 and 2031. This robust growth is primarily driven by the global need for enhanced crop yields, resource efficiency, and sustainable farming methods. North America currently dominates the market,

largely due to technological advancements and high agricultural productivity, while Asia-Pacific is identified as the fastest-growing region given rising adoption of smart farming practices.



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<https://www.datamintelligence.com/download-sample/precision-agriculture-market>

Key Highlights from the Report

- The global precision agriculture market was valued at USD 7 billion in 2022 and is projected to reach USD 18 billion by 2031.
- The market is expected to grow at a CAGR of 12.5% during the forecast period from 2024 to 2031.
- North America holds the largest market share due to advanced technology adoption and high agricultural output.
- Asia-Pacific is the fastest-growing region driven by increasing awareness and adoption of smart farming technologies.
- Remote sensing technology is a leading segment, revolutionizing data collection for crop monitoring and management.
- Variable Rate Technology (VRT) adoption is currently low due to implementation complexity and high costs, restraining market growth.

Market Segmentation

The precision agriculture market is segmented by offering, application, technology, and region, providing a comprehensive view of market dynamics and opportunities.

By offering, the market includes software solutions, hardware products, and services. Software platforms encompass tools for data analytics, farm management, and decision support systems. Hardware includes GPS devices, sensors, drones, and automated machinery used in the field. Service offerings cover consulting, maintenance, and training for seamless technology integration.

In terms of applications, key uses include crop scouting, field mapping, precision irrigation and irrigation management, weather tracking and forecasting, and yield monitoring. These applications allow farmers to monitor crop health, optimize water and nutrient use, manage pests efficiently, and improve harvest forecasting.

Technologically, the market is divided into remote sensing, guidance systems, and Variable Rate Technology (VRT). Remote sensing—utilizing satellite imagery and aerial drones—serves as a core enabler by capturing vital crop data such as nutrient status and moisture levels, facilitating precise interventions. Guidance systems support automated steering and machinery control, increasing operational efficiency. Although VRT promises optimal resource allocation by varying inputs in real-time, its adoption remains limited due to costs and complexity.

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Regional Insights

The precision agriculture market displays varied regional trends driven by differing economic, technological, and agronomic factors.

North America leads the global market, benefiting from advanced agricultural technologies, well-established infrastructure, and a strong focus on maximizing productivity sustainably. The region emphasizes yield monitoring systems and automated steering to reduce waste and environmental footprints while enhancing profitability. The U.S. and Canada are particularly active, supported by robust research and investment in AgTech innovations.

In Asia-Pacific, rapid urbanization, rising population, and governmental support for smart agriculture drive market expansion. Countries like China and India are increasing adoption of precision farming tools to address food security challenges and enhance productivity on fragmented farmlands. The region's growing farmer awareness and infrastructure development position it as the fastest-growing market.

Europe maintains steady growth with a focus on sustainable agricultural practices driven by stringent environmental policies and governmental subsidies encouraging precision technologies. Western European countries are early adopters of remote sensing and data-driven farming techniques.

South America, especially Brazil and Argentina, leverages precision agriculture to improve yield efficiency in large-scale farming operations, while the Middle East and Africa are emerging markets where technology uptake is gradually increasing due to growing recognition of resource constraints and climate vulnerabilities.

Market Dynamics

Market Drivers

The integration of Geographic Information Systems (GIS), Global Navigation Satellite Systems (GNSS), and remote sensing technologies fuels market growth by enabling farmers to obtain highly accurate spatial and crop data. This capability supports data-driven decisions that boost yields, reduce input costs, and mitigate environmental impact. Additionally, increasing demand for sustainable agriculture, supported by government policies and consumer expectations, propels adoption. Technological advancements that enable real-time monitoring and automation also enhance farming efficiency and resilience.

Market Restraints

Despite its potential, the precision agriculture market faces challenges. The adoption of Variable

Rate Technology (VRT) remains low due to high initial costs, operational complexity, and the need for precise data collection and interpretation. The lack of standardized protocols and interoperability issues between technology platforms hinder seamless integration. These factors restrict smaller farms and less technologically adept farmers from reaping full benefits, slowing broader market penetration.

Market Opportunities

Emerging opportunities include expanding service offerings such as agronomic consulting and data analytics platforms that simplify technology use. Increasing smartphone penetration and IoT adoption in rural areas facilitate technology accessibility. Moreover, integrating AI and machine learning for predictive analytics advances precision farming capabilities. Rising investments and mergers among AgTech companies create synergies to develop innovative, affordable solutions that could accelerate adoption in underpenetrated regions.

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Reasons to Buy the Report

- Gain comprehensive insights into market segmentation by offering, application, technology, and region.
- Understand competitive landscape and key players with detailed company profiles.
- Identify growth trends, market drivers, opportunities, and challenges impacting the industry.
- Access actionable data through Excel sheets covering extensive metrics and segment details.
- Leverage insights from qualitative interviews and in-depth analysis for strategic decision-making.

Frequently Asked Questions (FAQs)

- How big is the precision agriculture market in terms of value?
- What are the key applications driving the precision agriculture market?
- What is the projected CAGR of the global precision agriculture market from 2024 to 2031?
- Which region is estimated to dominate the precision agriculture market through the forecast period?
- Who are the key players in the global precision agriculture market?

Company Insights

Key global players driving the precision agriculture market include:

- AGCO Corporation
- Agribotix LLC
- Agjunction Inc.

- CropMetrics LLC
- Deere and Company
- Farmers Edge Inc.
- Grownetics, Inc.
- Granular, Inc
- Raven Industries
- Trimble, Inc.

Recent developments highlight ongoing consolidation and technological enhancement:

- In August 2025, John Deere announced a \$20 billion investment plan over the next decade focused on next-gen precision farming tools, advanced manufacturing capacity, and upgraded facilities to scale operations and innovation.
- In July 2025, startup Bonsai Robotics raised \$15 million in Series A funding to develop autonomous orchard machines for tree crops (e.g. almonds, walnuts), targeting improved productivity with less labor dependency.

Conclusion

The precision agriculture market stands at the forefront of revolutionizing modern farming by integrating cutting-edge technologies to enhance agricultural productivity, efficiency, and sustainability. Fueled by rapid technological advancements and growing global demand for sustainable food production, the market offers promising growth, especially in North America and Asia-Pacific. While challenges like the slow adoption of Variable Rate Technology exist, the expanding ecosystem of software, hardware, and services, coupled with increasing investments and innovations, signals a vibrant future for precision agriculture. Stakeholders across the value chain farmers, technology providers, and investors are poised to benefit as the sector continues to evolve and mature.

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