

Precision Agriculture Market Forecasts to 2032 – Global Analysis By Component (Hardware, Software, Services and Other Components), Farm Size (Small Farms, Medium Farms and Large Farms), Technology, Application, End User and By Geography

<https://marketpublishers.com/r/P9937C8CA113EN.html>

Date: September 2025

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: P9937C8CA113EN

Abstracts

According to Statistics MRC, the Global Precision Agriculture Market is accounted for \$27.1 billion in 2025 and is expected to reach \$53.5 billion by 2032 growing at a CAGR of 10.2% during the forecast period. Precision agriculture is a modern farming approach that utilizes advanced technologies such as GPS, sensors, and data analytics to optimize crop production and resource management. By monitoring field variability and tailoring inputs like water, fertilizers, and pesticides to specific zones, it enhances efficiency, reduces waste, and improves yields. This data-driven method supports sustainable practices, minimizes environmental impact, and enables informed decision-making. Precision agriculture transforms traditional farming into a more controlled, responsive, and productive system through real-time insights and automation.

Market Dynamics:

Driver:

Increased profitability and yield optimization

Farmers are increasingly adopting data-driven tools that enable accurate decision-making, leading to better resource allocation and higher crop yields. Technologies such as GPS-guided equipment, soil sensors, and predictive analytics are helping reduce input costs while improving output quality. Enhanced visibility into field conditions allows for timely interventions, minimizing waste and boosting operational efficiency. As global

food demand rises, precision farming offers a scalable solution to meet production goals sustainably.

Restraint:

Limited technical expertise

Operating advanced systems like drone-based imaging or AI-powered analytics requires specialized training, which is not always accessible. Many agricultural workers struggle with integrating digital platforms into traditional farming practices, leading to underutilization of available tools. Additionally, the complexity of interpreting data from multiple sources can overwhelm users, slowing down implementation. Bridging this skill gap remains a critical challenge for market expansion.

Opportunity:

Growth in farm management software and remote sensing tools

The surge in demand for intelligent farm management platforms and remote sensing technologies presents a significant growth opportunity. These tools enable real-time monitoring of crop health, soil conditions, and weather patterns, allowing farmers to make informed decisions quickly. Software solutions are evolving to offer cloud-based dashboards, mobile accessibility, and integration with IoT devices, enhancing usability. Remote sensing, through satellite imagery and drones, provides granular insights into field variability, supporting precision interventions.

Threat:

Climate change and unpredictable weather patterns

Sudden shifts in temperature, rainfall, and storm frequency can disrupt data models and reduce the accuracy of predictive tools. Crop cycles are becoming harder to forecast, complicating planning and resource allocation. Moreover, extreme weather events can damage infrastructure and delay field activities, undermining the benefits of precision systems. The need for adaptive technologies that can respond to environmental uncertainty is becoming increasingly urgent.

Covid-19 Impact:

The COVID-19 pandemic had a dual effect on the precision agriculture market. On one hand, supply chain disruptions and labor shortages slowed down equipment deployment and maintenance. On the other, the crisis accelerated the shift toward automation and remote monitoring, as farmers sought to minimize physical contact and maintain productivity. Digital platforms for farm management gained traction, enabling remote collaboration and data sharing. The pandemic also highlighted the importance of resilient food systems, prompting governments and agribusinesses to invest more heavily in smart farming technologies.

The software segment is expected to be the largest during the forecast period

The software segment is expected to account for the largest market share during the forecast period due to its central role in data analysis and decision support. These platforms facilitate crop planning, yield forecasting, and inventory management, making them indispensable for modern farming. The rise of user-friendly interfaces and mobile applications has broadened accessibility, even for small-scale farmers. Integration with cloud services and AI algorithms further enhances functionality, allowing for real-time insights and automation.

The remote sensing technology segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the remote sensing technology segment is predicted to witness the highest growth rate driven by its ability to deliver high-resolution, real-time data on crop and soil conditions. Innovations in satellite imaging, drone surveillance, and multispectral sensors are enabling precise monitoring of field variability. These tools support early detection of pests, nutrient deficiencies, and irrigation needs, allowing for targeted interventions. The increasing affordability and scalability of remote sensing systems are making them accessible to a wider range of users. As climate resilience becomes a priority, this segment is poised for rapid expansion.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share supported by its advanced farming infrastructure and strong technological ecosystem. The region benefits from widespread adoption of GPS-guided machinery, robust internet connectivity, and favorable government policies promoting smart agriculture. Major players headquartered in the U.S. and Canada are continuously investing in R&D, driving innovation across the value chain. Additionally, the presence

of large-scale farms and high awareness of sustainable practices contribute to the region's dominance.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR fueled by rising food demand, expanding agricultural investments, and increasing digital penetration. Countries like India, China, and Indonesia are witnessing a surge in precision farming adoption, supported by government subsidies and private sector initiatives. The region's diverse climatic zones and fragmented landholdings create a strong need for customized solutions, driving innovation in remote sensing and farm management software. As rural connectivity improves, Asia Pacific is set to become a major hub for smart agriculture technologies.

Key players in the market

Some of the key players in Precision Agriculture Market include Deere & Company, Trimble Inc., AGCO Corporation, Topcon Corporation, Raven Industries, The Climate Corporation, Ag Leader Technology, Farmers Edge Inc., TeeJet Technologies, Lindsay Corporation, Kubota Corporation, CNH Industrial N.V., CropX, DICKEY-john Corporation, AgJunction Inc., Precision Planting LLC, Grownetics, Inc., Proagrica, AgEagle Aerial Systems Inc. and Valmont Industries.

Key Developments:

In September 2025, CropX acquired Acclym to expand its enterprise-grade sustainability and supply chain analytics. The deal brings clients like Nestlé and General Mills into CropX's ecosystem.

In April 2025, Kubota launched hydrogen and HVO-compatible engines, including the 3.8L hydrogen engine and V3307 at Bauma. These innovations support carbon-neutral goals and diverse powertrain options.

In March 2025, Climate FieldView partnered with Rantizo to enable drone operators to share application maps directly with Bayer's platform. This integration streamlines data flow and improves precision spraying.

Components Covered:

Hardware

Software

Services

Other Components

Farm Sizes Covered:

Small Farms

Medium Farms

Large Farms

Technologies Covered:

Guidance Technology

Remote Sensing Technology

Variable Rate Technology

Other Technologies

Applications Covered:

Soil Monitoring

Variable Rate Application (VRA)

Field Mapping Telematics

Yield Monitoring

Crop Scouting

Inventory Management

Weather Tracking & Forecasting

Farm Labor Management

Irrigation Management

Financial Management

Other Applications

End Users Covered:

Agricultural Service Providers

Custom Operators

Government & Research Institutions

Cooperatives & Agribusinesses

Other End Users

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as

per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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