

# AI Precision Agriculture Market Forecasts to 2034– Global Analysis By Component (Hardware, Software and Services), Technology, Application, End User and By Geography

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## Abstracts

According to Statistics MRC, the Global AI Precision Agriculture Market is accounted for \$2.98 billion in 2026 and is expected to reach \$14.45 billion by 2034 growing at a CAGR of 21.8% during the forecast period. AI Precision Agriculture refers to the application of artificial intelligence technologies to optimize farming practices by enabling data-driven decision-making. It integrates machine learning, computer vision, IoT sensors, and predictive analytics to monitor crop health, soil conditions, weather patterns, and resource usage in real time. These systems enhance productivity by delivering precise inputs such as water, fertilizers, and pesticides, reducing waste and environmental impact. By improving yield quality, operational efficiency, and sustainability, AI precision agriculture supports modern farming in meeting the rising global food demand.

### Market Dynamics:

#### Driver:

Surge in AI and data centers

The rapid expansion of artificial intelligence capabilities and data center infrastructure is significantly driving the market. Advanced computing power enables real-time processing of vast agricultural datasets, including satellite imagery, weather patterns, and soil analytics. Cloud-based AI platforms support scalable farm management solutions, allowing farmers to adopt predictive insights with ease. This technological

backbone enhances automation, optimizes resource utilization, and accelerates decision-making, ultimately improving crop productivity and operational efficiency across modern agricultural ecosystems.

**Restraint:**

High purification and infrastructure costs

High initial investment and infrastructure costs remain a key restraint for the market. Deployment of AI systems requires advanced sensors, drones, data storage solutions, and reliable connectivity, which can be expensive for small and medium-scale farmers. Additionally, maintaining and upgrading these systems demands technical expertise and continuous financial input. Limited access to capital and inadequate rural infrastructure in developing regions further restrict widespread adoption, slowing down the integration of AI-driven agricultural practices.

**Opportunity:**

Advanced gas recycling and reclamation

Emerging opportunities lie in the integration of advanced gas recycling and reclamation technologies within precision agriculture systems. These innovations can support sustainable farming by optimizing greenhouse gas management, particularly in controlled environments such as greenhouses and vertical farms. AI-driven monitoring enables efficient utilization and recycling of gases like carbon dioxide, enhancing crop growth while minimizing environmental impact. This approach aligns with global sustainability goals and opens new avenues for eco-friendly agricultural practices and resource optimization.

**Threat:**

Raw material shortages

Raw material shortages pose a significant threat to the market, particularly affecting the production of sensors, semiconductors, and electronic components. Disruptions in global supply chains can lead to increased costs and delayed deployment of essential technologies. Dependence on critical materials such as rare earth elements further intensifies vulnerability. These challenges can hinder technological advancement and scalability, limiting the ability of agricultural stakeholders to fully leverage AI driven

solutions in a timely manner.

### **Covid-19 Impact:**

The COVID-19 pandemic had a mixed impact on the AI precision agriculture market. While initial disruptions in supply chains and labor availability slowed technology deployment, the crisis accelerated the adoption of automation and digital farming solutions. Farmers increasingly turned to AI-driven tools to manage operations remotely and ensure productivity amid restrictions. The pandemic highlighted the importance of resilient food systems, encouraging investments in smart agriculture technologies and fostering long-term growth in AI-enabled precision farming.

The yield prediction segment is expected to be the largest during the forecast period

The yield prediction segment is expected to account for the largest market share during the forecast period, due to its critical role in enhancing agricultural planning and productivity. AI-powered models analyze historical data, weather conditions, and crop health indicators to provide accurate yield forecasts. These insights enable farmers to make informed decisions regarding harvesting, storage, and distribution. The growing need to maximize output while minimizing risks and uncertainties is driving the widespread adoption of yield prediction solutions across both developed and emerging agricultural markets.

The agritech companies segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the agritech companies segment is predicted to witness the highest growth rate, due to increasing innovation and investment in digital farming technologies. These companies are at the forefront of developing AI-powered tools, including smart sensors, autonomous machinery, and advanced analytics platforms. Strategic collaborations, venture funding, and government support are further accelerating their expansion. Their ability to offer scalable, cost-effective solutions is attracting a broad customer base, fueling rapid market growth.

### **Region with largest share:**

During the forecast period, the North America region is expected to hold the largest market share, due to strong technological infrastructure and high adoption of advanced farming practices. The region benefits from the presence of leading agritech firms,

robust research and development activities, and favorable government initiatives promoting smart agriculture. Farmers in this region are early adopters of AI-driven solutions, leveraging data analytics and automation to enhance productivity, reduce costs, and ensure sustainable agricultural operations.

### **Region with highest CAGR:**

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, owing to increasing population pressure and the rising need for food security. Governments across the region are actively promoting digital agriculture through subsidies and policy support. Rapid advancements in connectivity, growing awareness of precision farming benefits, and expanding agritech ecosystems are accelerating adoption. Additionally, the presence of large agricultural economies provides significant growth opportunities for AI-driven farming solutions.

### **Key players in the market**

Some of the key players in AI Precision Agriculture Market include Microsoft Corporation, IBM Corporation, Deere & Company (John Deere), Bayer AG, SAP SE, Intel Corporation, Yara International ASA, PrecisionHawk Inc., Prospera Technologies Ltd., Taranis Visual Ltd., Agworld Inc., FarmWise Labs Inc., Granular Inc., AGCO Corporation and Trimble Inc.

### **Key Developments:**

In February 2026, IBM introduced the next-generation autonomous storage portfolio featuring IBM Flash System 5600, 7600, and 9600, powered by agentic AI. The systems automate storage management, improve cyber-resilience, and optimize enterprise data operations, helping organizations manage AI workloads more efficiently. This launch strengthens IBM's hybrid cloud and AI infrastructure ecosystem by reducing manual IT operations and enabling autonomous data storage environments.

In January 2026, IBM partnered with telecom group e& to deploy enterprise-grade agentic AI solutions for governance and regulatory compliance. The collaboration focuses on implementing advanced AI agents capable of automating compliance monitoring, operational decision-making, and enterprise analytics. Announced at the World Economic Forum in Davos, the initiative demonstrates IBM's growing focus on enterprise AI ecosystems.

### Components Covered:

Hardware

Software

Services

### Technologies Covered:

Machine Learning

Computer Vision

Robotics & Automation

Predictive Analytics

Drones & UAVs

IoT Sensors

### Applications Covered:

Crop Monitoring & Management

Soil & Nutrient Management

Irrigation Management

Pest & Disease Detection

Yield Prediction

Farm Equipment Automation

## End Users Covered:

Farmers

Agritech Companies

Research & Academic Institutes

Government & Regulatory Bodies

## Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

#### Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

#### South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of 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 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

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

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