AI In Agriculture - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-07-01 | 100 pages | Mordor Intelligence

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Report description:

AI Market Analysis

The AI Market In Agriculture Industry is expected to grow from USD 2.55 billion in 2025 to USD 7.05 billion by 2030, at a CAGR of 22.55% during the forecast period (2025-2030).

Momentum stems from the convergence of precision-farming practices, national digital-farming mandates, and the growing availability of cloud-based AI tools that lower entry barriers for farms of all sizes. Pressure to raise food output for a global population on track to touch 10 billion by 2050 is intensifying adoption, while falling costs for sensors, connectivity, and AI-as-a-Service subscriptions position the AI in agriculture market for accelerated scale-up. Strategic alliances between technology leaders and agricultural equipment manufacturers are expanding end-to-end platforms that combine hardware, software, and advisory services in one ecosystem. At the same time, semiconductor supply chain volatility and fragmented data standards remain adoption headwinds, particularly for the 80% of the world's farms that are smaller than two hectares.

Global AI Market Trends and Insights

Rapid Adoption of Precision Agriculture Platforms

Precision platforms integrate IoT sensors, GPS, and AI analytics to deliver site-specific insights that cut fertilizer, water, and agrochemical use. John Deere invested USD 20 billion in 2024, channeling significant funds into AI-enabled machinery that trims

input waste by up to 25%. Retrofit kits such as Trimble's Bilberry Smart Spraying System reduce herbicide use by 90%. Uptake is strongest where labor costs and environmental regulations push growers toward data-driven decision making, cementing the AI in agriculture market as a core enabler of sustainable intensification.

Expansion of High-Resolution Drone and Satellite Imagery Services

Multispectral sensors paired with AI image analytics flag plant stress weeks before symptoms are visible. EOS Data Analytics users in Africa doubled maize yields to 2 tons per acre against national averages. Real-time data streaming over 5G networks cuts scouting costs and allows larger field coverage, broadening the AI in agriculture market as connectivity infrastructure reaches rural zones.

Fragmented Agronomic Data Standards

Proprietary data silos impede interoperability between equipment, sensors, and analytics platforms. Bayer and Microsoft are collaborating on open data models that knit disparate datasets into a unified framework. Standardization could boost AI effectiveness by 30-40%, yet consensus among vendors remains elusive, restraining the growth trajectory of the AI in agriculture market in regions where multiple suppliers compete without a common protocol.

Other drivers and restraints analyzed in the detailed report include:

Government Digital-Farming Subsidies and Mandates / Affordable Cloud-Based AI-as-a-Service Offerings / High Upfront Costs for Sensors and Robotics /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Precision farming secured 46% AI in the agriculture market share in 2024, positioning it as the sector's anchor application. Integrated weed-targeting and variable-rate nutrition modules allow farms to translate data into measurable savings and yield gains, validating the AI in the agriculture market for investors and policymakers. Drone analytics, advancing at a 25.8% CAGR, benefits from falling UAV prices and regulatory easing around beyond-visual-line-of-sight flights.

The next wave centers on livestock monitoring, smart greenhouses, and post-harvest supply-chain optimization. AI vision systems achieve 95% accuracy in cattle behavior detection, aiding early disease identification. Greenhouse operators report 32% resource-efficiency improvements after embedding AI-controlled climate systems. These adjacent use cases expand the AI in agriculture market by layering new revenue streams onto existing data infrastructure.

Machine learning owned 41.3% of the technology slice of the AI in agriculture market in 2024, underpinned by its ability to crunch large, multi-variable datasets for yield forecasts and pest alerts. Yet computer vision is climbing at 23.6% CAGR as high-resolution imagery becomes ubiquitous in fields, orchards, and greenhouses.

Visual analytics tied to autonomous drones can scan hundreds of acres per hour, spotting diseases invisible to the naked eye. Controlled-environment pilots at Penn State demonstrated continuous AI vision monitoring that automates nutrient tweaks for specialty crops. Predictive analytics and NLP are supplementing dashboards with conversational agents; Bayer's E.L.Y. generative model improved agronomic Q&A accuracy by 40%. The result is a richer, more interactive AI in the agriculture market where farmers engage with complex models through natural language rather than technical code.

AI Market in Agriculture Report is Segmented by Application (Precision Farming, Livestock Monitoring, Drone Analytics, Smart Greenhouse Management, and Supply-Chain and Post-Harvest Optimization), Technology (Machine Learning, Computer Vision, Predictive Analytics, and Natural-Language Processing [NLP]), Component (Hardware, Software, and Services), Deployment Mode (Cloud, On-Premise, and Hybrid), and Geography.

Geography Analysis

North America commanded 34.7% AI in the agriculture market share in 2024, buoyed by large field sizes, high technology budgets, and supportive policies. John Deere's factories are rolling out private 5G networks to connect 80% of equipment within five years, illustrating how infrastructure investments underpin digital agronomy. USDA programs channel USD 7.7 billion into climate-smart practices that frequently bundle AI carbon-sequestration tools, sustaining premium demand for advanced analytics.

Asia Pacific is forecast to clock the fastest 24.4% CAGR, powered by China's 14th Five-Year Plan and India's INR 6,000 crore digital agriculture push. Provincial projects such as Gujarat's Centres of Excellence and Maharashtra's state-led AI pilots widen grassroots exposure, funneling millions of smallholders into the AI in agriculture market. Satellite-based advisory services led by regional startups use multilingual chatbots to bridge knowledge gaps, proving that a cloud-first strategy can overcome limited extension services.

Europe aligns AI rollouts with sustainability targets under the Green Deal. The EUR 30 million AgrifoodTEF initiative is building 5G hubs that test robotic sprayers aimed at halving pesticide volumes. Vodafone's 5G greenhouse campus in Germany, co-developed with Bayer, demonstrates the continent's preference for high-spec connectivity that safeguards data privacy. Meanwhile, pilots in Uzbekistan and parts of sub-Saharan Africa highlight emerging-market potential, exemplified by 6th Grain's USD 5.5 million contract to digitize crop monitoring.

List of Companies Covered in this Report:

Microsoft Corporation / IBM Corporation / Deere and Company / Trimble Inc. / Bayer Crop Science - Climate FieldView / Granular Inc. / Prospera Technologies Ltd. / Gamaya SA / aWhere Inc. / CropX Technologies / Taranis / Raven Industries / PrecisionHawk Inc. / AgEagle Aerial Systems / Aerobotics / Syngenta / Topcon Agriculture / Tule Technologies Inc. / Intelligent Growth Solutions (IGS) / Blue River Technology /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
3 months of analyst support /

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