

# Precision Spray AI Controllers

ANMD-MRS11-109 · AI & Digital Agriculture Technologies

A Global Sustainability Due Diligence & Market Research Study

History 2020–2024 · Base Year 2025 · Forecast 2025–2032 · Outlooks 2035 / 2040 / 2050 · Currency US\$

## WHY THIS REPORT

Precision spray AI controllers are the brains that make every nozzle count — the see-and-spray, variable-rate, drift-reduction and nozzle-level control systems that apply crop-protection products precisely where and when they are needed. This decision-grade study sizes the global market three ways — value, hectares/acres treated and units/subscriptions — across controller type, integration model and application, across seven regions and four scenarios to 2032, with outlooks to 2050.

## SUSTAINABILITY & SDG IMPACT — THE ANMD LENS

Sustainability is this report's backbone, not an afterthought. Spray controllers' core contribution is reduced chemical use, lower drift and water contamination, and support for resistance management and compliance.

Mapped Sustainable Development Goals:

<p><b>SDG 2</b> Zero Hunger</p>	<p><b>SDG 8</b> Decent Work &amp; Economic Growth</p>	<p><b>SDG 12</b> Responsible Consumption</p>	<p><b>SDG 13</b> Climate Action</p>	<p><b>SDG 15</b> Life on Land</p>
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Measurable sustainability outcomes assessed:

- Reduced chemical use and lower drift
- Lower water contamination
- Support for resistance management and compliance
- Device e-waste, data ownership and access for smaller operations as material risks

**Framework alignment:** Double materiality mapped to GRI, SASB, ISSB, TCFD, TNFD, CSRD and the EU Taxonomy, with greenwashing and SDG-washing screens applied throughout.

## WHAT'S INSIDE AT A GLANCE

<p><b>53</b> Chapters</p>	<p><b>9</b> Report Parts</p>	<p><b>7</b> Regions Covered</p>	<p><b>40+</b> Country Markets</p>
<p><b>2025–32</b> Forecast Horizon</p>	<p><b>4</b> Forward Scenarios</p>	<p><b>25+</b> Companies Profiled</p>	<p><b>5</b> SDGs Mapped</p>

## REPORT COVERAGE

**Geographic scope:** North America, Europe, Asia Pacific, Latin America, Africa, Middle East and Rest of World — with named country intelligence. North America leads controller adoption; Europe drives spot-spray and drift control; specialists and retrofit broaden reach; other regions assessed on their own merits.

## MARKET OVERVIEW

### From boom-section to nozzle-level — where vision-led actuation maximises savings and minimises drift.

Precision spray control is central to input-reduction and compliance. Demand is driven by chemical-cost pressure, drift and buffer-zone regulation, and resistance management — with see-and-spray and nozzle-level control shifting value to intelligent controllers and retrofit kits. The market is read three ways — value, hectares/acres treated and units/subscriptions — and forecast under four scenarios, each region reported separately.

- **North America leads controller adoption** — United States, across broadacre spraying
- **Europe drives spot-spray and drift control** — Germany, Switzerland and the Netherlands, on spot-spray and drift platforms
- **Specialists and retrofit broaden reach** — across OEM and retrofit channels
- **Nozzle-level control is the differentiator** — individual-nozzle and pulse-width-modulation actuation maximises savings and minimises drift

## REGIONAL OUTLOOK

Across seven reporting regions, the report separates leading markets from high-growth and emerging ones — each profiled in full rather than aggregated into Rest of World.

Region	Stage	Lead Markets & Drivers
North America	Controller leader	United States — broadacre spray control
Europe	Spot-spray & drift	Germany, Switzerland, Netherlands — spot-spray, drift
Asia Pacific	Emerging	Australia, China — broadacre spray control
Latin America	Emerging	Brazil, Argentina — input-reduction adoption
Africa	Frontier	South Africa — precision-spray pilots
Middle East	Emerging	Israel — spray-AI innovation

## KEY MARKET DRIVERS & RESTRAINTS

Drivers	Restraints
<ul style="list-style-type: none"> <li>• Chemical-cost &amp; input-reduction pressure</li> <li>• Drift &amp; buffer-zone regulation</li> <li>• Resistance management</li> <li>• See-and-spray &amp; nozzle-control maturity</li> <li>• Retrofit access to existing sprayers</li> </ul>	<ul style="list-style-type: none"> <li>• Real-time control speed &amp; accuracy</li> <li>• System cost &amp; ROI proof</li> <li>• Retrofit &amp; machine compatibility</li> <li>• Calibration &amp; maintenance</li> <li>• Connectivity &amp; data integration</li> </ul>

## SEGMENTATION SNAPSHOT

<b>By Controller Type</b>	See-and-spray · variable-rate · drift-reduction AI · nozzle-level control · retrofit spray-AI kits
<b>By Integration Model</b>	OEM-integrated · retrofit · drone / robot
<b>By Application</b>	Row crops · specialty / horticulture · livestock
<b>By End User</b>	Farmers · agribusiness · co-operatives · agronomists
<b>By Control Level</b>	Boom-section · nozzle-level · pulse-width-modulated
<b>By Business Model</b>	Hardware sales · SaaS subscription · services

## TABLE OF CONTENTS — PARTS & CHAPTERS

The full report is organised into nine parts across 53 chapters, listed below. Detailed sub-headings, country tables and directories are provided in the full report.

### Part I — Report Foundation, Discovery and Strategic Intelligence

- > Chapter 1. Scope, Methodology and Report Architecture
- > Chapter 2. Industry Discovery Summary — Precision Spray AI Controllers
- > Chapter 3. Executive Intelligence and Decision Dashboard
- > Chapter 4. Strategic Findings, Materiality and Investment Verdict Preview

### Part II — Market Intelligence, Sizing, Forecasting and Segmentation

- > Chapter 5. Industry Overview and Market Evolution
- > Chapter 6. Market Dynamics
- > Chapter 7. Global Market Size and Forecast, 2020–2032
- > Chapter 8. Market Segmentation Analysis
- > Chapter 9. End-User and Demand-Side Intelligence
- > Chapter 10. Pricing, Cost and Commercial Model Intelligence

### Part III — Regional and Country Intelligence

- > Chapter 11. Global Regional Intelligence Framework
- > Chapter 12. North America Market Intelligence
- > Chapter 13. Europe Market Intelligence
- > Chapter 14. Asia Pacific Market Intelligence
- > Chapter 15. Latin America Market Intelligence
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- > Chapter 18. Rest of World Market Intelligence

### Part IV — Technology, Innovation and Category-Specific Intelligence

- > Chapter 19. Technology Landscape and Architecture
- > Chapter 20. Emerging and Next-Generation Technology Intelligence
- > Chapter 21. Category-Specific Intelligence Module
- > Chapter 22. Research, Innovation and Funding Landscape

## Part V — Company, Competition, Patent and Project Intelligence

- › Chapter 23. Competitive Landscape
- › Chapter 24. Company Profiles
- › Chapter 25. Mergers, Acquisitions, Partnerships and Ecosystem Intelligence
- › Chapter 26. Patent Landscape and Intellectual Property Intelligence
- › Chapter 27. Project, Deployment and Case-Study Intelligence

## Part VI — Sustainability, ESG, SDG, Climate and Natural-Capital Intelligence

- › Chapter 28. Sustainability Intelligence Suite
- › Chapter 29. ESG Intelligence and Double Materiality
- › Chapter 30. ESG and Sustainability Framework Alignment
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- › Chapter 32. Carbon, Net-Zero and Climate-Mitigation Intelligence
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- › Chapter 34. Circular Economy and Resource-Security Intelligence
- › Chapter 35. Social Impact, Human Capital and Community Intelligence
- › Chapter 36. Climate Risk, Adaptation and Resilience Intelligence

## Part VII — Supply Chain, Policy, Legal, Economics and Finance

- › Chapter 37. Value Chain, Supply Chain and Geopolitical Intelligence
- › Chapter 38. Policy, Regulation and Incentive Intelligence
- › Chapter 39. Legal, Contracting and Risk-Allocation Intelligence
- › Chapter 40. Unit Economics, CAPEX, OPEX and Return Analysis
- › Chapter 41. Investment, Sustainable Finance and Bankability Intelligence

## Part VIII — Scenario, Future Intelligence and Final Due Diligence Verdict

- › Chapter 42. Scenario Analysis and Future Intelligence
- › Chapter 43. Sustainability Due Diligence Framework and Data-Room Index
- › Chapter 44. Risk Register, RAG Rating and Anti-Greenwashing Screen
- › Chapter 45. Bottom-Line Verdict and Strategic Recommendations
- › Chapter 46. Implementation Roadmap and Stakeholder Playbooks

## Part IX — Annexes, Directories and Reference Material

- › Chapter 47. Methodology Annex
- › Chapter 48. Corporate Directory and Company Intelligence Annex
- › Chapter 49. Patent Directory and Patent Intelligence Annex
- › Chapter 50. Project Intelligence Annex
- › Chapter 51. Forecast Annex
- › Chapter 52. Sustainability KPI Annex
- › Chapter 53. Reference Annexes

## COMPETITIVE & INVESTMENT SNAPSHOT

The competitive field spans spray-OEM controllers, see-and-spray vision firms and retrofit specialists. Deal activity — vision-and-control integration, OEM partnerships and retrofit deals — signals a market consolidating around nozzle-precise, vision-led spray control.

### Representative players profiled in the full report:

Deere & Company (Blue River Technology) · Robert Bosch GmbH / BASF SE (One Smart Spray) · Greeneye Technology · Trimble Inc. · Raven Industries (CNH Industrial) · Capstan Ag Systems, Inc. · Spraying Systems Co. (TeeJet) · and further profiled players across spray-OEM controllers and vision firms.

**Investment intelligence:** venture, infrastructure, development, climate and blended finance, green bonds and sustainability-linked loans — culminating in a bankability assessment and a conditional investment view.

## KEY QUESTIONS THIS REPORT ANSWERS

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- How large is the global precision-spray controller market, and how fast will it grow to 2032?
- Which regions, countries and segments offer the strongest risk-adjusted opportunity?
- How does nozzle-level control change value versus boom-section control?
- Who leads, and where is the competitive and patent white space?
- Is the investment case bankable — and under what conditions?
- How does the category align with the SDGs, input reduction and farmer-equity expectations?

## WHY ANMD — THE DIFFERENCE

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*Most market studies stop at units and revenue. This report is built as a sustainability due diligence instrument — fusing market sizing with ESG, SDG, climate, water and natural-capital intelligence and a decision-ready bankability view in a single architecture.*

- **Triangulated sizing** — every market read three ways so value, volume and the physical-unit views reconcile rather than conflict.
- **Region-honest forecasting** — Latin America, Africa and the Middle East reported in full, never hidden inside Rest of World, every forecast resolved to the 2025 base year.
- **Integrated evidence base** — company, patent and project databases linked to the analysis, with published-filing patents and FTO treated as an indicator, not a legal conclusion.
- **No-fabrication discipline** — every estimate carries a data-confidence rating and disclosed sources; gaps are flagged for further diligence, never filled with invented numbers.
- **Anti-greenwashing rigour** — SDG-washing and greenwashing screens plus claim-substantiation checks built into the ESG and project analysis.
- **Decision-first structure** — 9 Parts and 53 Chapters culminating in stakeholder playbooks and a clear, conditional investment view.

## WHO SHOULD BUY THIS REPORT

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Investors, growers, agribusiness, co-operatives, OEMs, retailers, lenders and policymakers, and strategic corporate planners and decision-makers.

### Access the Full Report

The complete report delivers all 53 chapters in full, with every sub-heading, country table, company and patent directory, forecast model and due diligence checklist.

Purchase at [www.anewmarketdynamics.com](http://www.anewmarketdynamics.com) · Standard & Premium licences · Single-Site (SSL) and Global-Site (GSL) options at checkout.

### Want the Complete Detailed Table of Contents?

This prospectus lists the nine parts and 53 chapters. The complete detailed table of contents — every sub-heading, country table, exhibit, company and patent directory and annex — is available on request to registered users. To receive it, register with your official company email at [www.anewmarketdynamics.com](http://www.anewmarketdynamics.com). The full detailed table of contents will be sent directly to your registered company email address.