

ANMD-MRS29-282 · Smart Farming & Precision Agriculture

Soil Sensor Networks

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

Soil sensor networks deploy in-field probes and wireless nodes to monitor moisture, nutrients and soil health in real time, turning the soil into a continuous data source. This decision-grade study sizes the global market three ways — value, volume and monitored hectares — across the report’s segmentation axes, 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. Beyond productivity, soil sensor networks deliver measurable input savings, resource efficiency and lower environmental footprint, while data-driven precision strengthens the natural-capital story.

Mapped Sustainable Development Goals:

SDG 2 Zero Hunger	SDG 6 Clean Water	SDG 7 Affordable & Clean Energy	SDG 13 Climate Action	SDG 15 Life on Land
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Measurable sustainability outcomes assessed:

- Water savings through moisture-driven irrigation control
- Optimised fertiliser use and reduced nutrient run-off
- Improved soil health and yield stability
- Sensor electronics embodied carbon and end-of-life 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

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

REPORT COVERAGE

Geographic scope: North America, Europe, Asia Pacific, Latin America, Africa, Middle East and Rest of World — with named country intelligence. North America commercial leader ; Europe scaling on regulation ; Asia Pacific scale engine.

MARKET OVERVIEW

From periodic sampling to continuous soil intelligence — where every field reports its own condition.

Soil sensing is moving from research plots to operational, networked field management. Demand is driven by the convergence of water-scarcity pressure, fertiliser-cost inflation and soil-carbon programmes, supported by maturing IoT and connectivity across North America, Europe and Asia Pacific. The market is read three ways — value, sensor nodes deployed and monitored hectares — and forecast under conservative, base, accelerated and disruption scenarios, with every projection resolved to the 2025 base year and each region reported separately rather than folded into Rest of World.

- North America leads early commercialisation, anchored by the United States and Canada, where irrigation-scheduling, large acreage and agronomy-service networks are most advanced.
- Europe is scaling on regulation, with Germany, the Netherlands and France combining nitrate-reduction rules with strong precision-irrigation adoption.
- Asia Pacific is accelerating, supported by China, India, Australia and Japan, where water scarcity and food-security drivers are strongest.
- System type and application segment the value, across moisture, nutrient and multi-parameter sensors, and across irrigation, agronomy and research use cases, each with distinct economics.
- Water and input savings are the differentiator, reduced irrigation and fertiliser plus higher yields — and increasingly soil-carbon tracking — underpin returns that calendar-based management cannot match.

REGIONAL OUTLOOK

Across the seven reporting regions, the report separates early commercialisation leaders from high-growth and emerging markets, profiling named country sub-markets, policy regimes and project pipelines in each. North America and Europe anchor near-term adoption; Asia Pacific scales on food security and labour drivers; while Latin America, Africa and the Middle East are assessed on their own merits — for productivity, water security and rural development — rather than aggregated away.

Region	Stage	Lead Markets & Drivers
North America	Commercial leader	United States, Canada — large acreage, precision-ag adoption, dealer & agronomy networks
Europe	Scaling on regulation	Germany, France, Netherlands — input-reduction rules, CAP linkage, equipment supply
Asia Pacific	Scale engine	China, India, Japan, Australia — food security, labour decline, broadacre & drone adoption
Latin America	Emerging	Brazil, Argentina — large-scale row crops, agribusiness integration
Africa	Frontier	South Africa, Kenya, Morocco — food security, smallholder digitisation, blended finance
Middle East	Frontier	Saudi Arabia, UAE, Israel — water security, controlled-environment & agtech investment

KEY MARKET DRIVERS & RESTRAINTS

Drivers	Restraints
<ul style="list-style-type: none"> • Water-scarcity & irrigation-efficiency pressure • Fertiliser-cost & nutrient-loss reduction • Soil-carbon & regenerative-agriculture programmes • Nitrate & water-quality regulation • Low-power IoT, LPWAN & sensor-cost advances 	<ul style="list-style-type: none"> • Sensor calibration, drift & accuracy in soil • Connectivity & battery life in remote fields • Data-integration & agronomy-translation gaps • ROI-attribution & adoption inertia • Installation, maintenance & support cost

SEGMENTATION SNAPSHOT

By System Type	Moisture sensors · nutrient (NPK) sensors · multi-parameter probes · wireless networks · carbon / health sensors
By Component	Probes · capacitance / TDR sensors · dataloggers · LPWAN radios · gateways
By Application	Farms & growers · agronomists · irrigation managers · research institutions
By End User	Farms & growers · agronomists · irrigation managers · research institutions
By Business Model	Equipment purchase · SaaS · lease · managed-service
By Deployment	Row crops · horticulture · orchard · vineyard · greenhouse

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.

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- › Chapter 4. Strategic Findings, Materiality and Investment Verdict Preview

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- › Chapter 7. Global Market Size and Forecast, 2020–2032
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COMPETITIVE & INVESTMENT SNAPSHOT

The competitive field spans soil-sensing specialists, established instrument manufacturers, and irrigation-tech innovators. Profiled players include CropX, Sentek, Teralytic, METER Group and Netafim. Deal activity — partnerships, technology licensing and demonstration programmes — signals a market consolidating around bankable, repeatable designs.

Representative players profiled in the full report:

CropX Inc. · Sentek Pty Ltd · Teralytic, Inc. · METER Group, Inc. · Netafim Ltd. · and 20+ further profiled players across the value chain.

Investment intelligence: venture, growth, infrastructure, development, climate and blended finance, green bonds and sustainability-linked instruments — culminating in a bankability assessment and a Go / No-Go / Conditional-Go investment verdict.

KEY QUESTIONS THIS REPORT ANSWERS

- ? How large is the global soil sensor networks market, and how fast will it grow to 2032?
- ? Which regions, countries and segments offer the strongest risk-adjusted opportunity?
- ? How do precision-agriculture economics change returns versus conventional methods?
- ? Who leads, and where is the competitive and patent white space?
- ? Is the investment case bankable — and under what conditions?
- ? How does the technology align with the SDGs and emerging disclosure regulation?

WHY ANMD — THE DIFFERENCE

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 verdict in a single architecture.

- **Triangulated sizing** — every market read three ways so value, volume and area 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 Go / No-Go / Conditional-Go investment verdict.

WHO SHOULD BUY THIS REPORT

Investors, manufacturers, growers, agronomists, cooperatives, policymakers, lenders, and corporate strategy and ESG teams — alongside 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 · 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. The full detailed table of contents will be sent directly to your registered company email address.