

# Soil Monitoring Market Outlook 2026-2034: Market Share, and Growth Analysis By Offering (Hardware, Software, Services), By System Type (Sensing and Imagery, Ground-based Sensing, Robotic and Telematics), By Application

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## Abstracts

The Soil Monitoring Market is valued at USD 183.3 million in 2025 and is projected to grow at a CAGR of 15.2% to reach USD 808.3 million by 2034.

### Soil Monitoring Market

The soil monitoring market encompasses hardware, software and service solutions designed to assess, track and manage soil conditions (moisture, nutrients, pH, salinity, temperature, compaction, organic content) across agricultural, environmental, forestry, construction and mining applications. Key offerings include in situ soil sensors and probes, remote sensing/imaging (satellite, drone, UAV based), telemetry/telematics systems for data transmission, analytical software platforms, and associated services (installation, calibration, analytics, advisory). Major applications are precision agriculture (optimising irrigation/fertilisation, improving yield and reducing waste), environmental/land use monitoring (soil health, carbon sequestration, contamination), forestry/land rehabilitation, and construction/mining where soil stability or quality matters. Important trends driving the market include growing adoption of precision agriculture techniques, proliferation of IoT/connected sensors and edge analytics, increasing regulatory and sustainability pressures around soil health and land degradation, and the rising role of remote/imagery based monitoring for large scale land management. Key drivers of growth are the need to enhance crop productivity to feed a growing global population, rising water scarcity and the need for efficient irrigation/fertiliser use, increasing awareness of soil degradation and carbon

sequestration potential, and technological maturation of low cost sensors and data analytics. From a competitive standpoint, the market features sensor/manufacturer firms, software/analytics providers, service/integration players, and agritech/land management firms. Success factors include sensor accuracy and durability in field conditions, connectivity and data transmission reliability, analytics and actionable insights (not just data), scalability across large fields or remote regions, and cost effectiveness for both large commercial operations and smaller farms. Other important dynamics: high upfront cost and variability of soil conditions (which complicates measurement and interpretation), fragmentation of end users (many small farms have limited budgets or technical know how), and regional variability in adoption (infrastructure, service network, regulatory incentives). Overall, the soil monitoring market is positioned for strong growth as agriculture, land use and sustainability concerns increasingly overlap and digital land management tools become more accessible.

### Soil Monitoring Market Key Insights

**Precision agriculture thrust:** The imperative to increase yields, optimise water/fertiliser input and reduce waste means soil monitoring tools become core to modern farming operations rather than niche additions.

**Sensor + IoT proliferation:** Low cost, connected soil moisture, nutrient and pH sensors plus telemetry and cloud based dashboards enable real time monitoring and decision making, expanding the market beyond large commercial farms.

**Remote sensing and imagery gaining ground:** Drone/UAV and satellite based imagery complement ground sensors to provide large area soil health mapping, especially useful for large farms, land management agencies and forestry.

**Sustainability and soil health regulation support growth:** Growing awareness of soil degradation, carbon sequestration potential in soils, land rehabilitation mandates, and regulatory pressure for efficient land use all drive adoption of soil monitoring.

**Service and analytics value add is differentiator:** End users increasingly demand not just data but actionable insights - software platforms with analytics, alerts, predictive models (soil moisture forecasts, nutrient stress) plus advisory services raise value and vendor differentiation.

Small farm adoption remains an untapped frontier: Much of the global farmland is small holder and cost sensitive - vendors offering affordable sensors, bundled services or leasing models have growth opportunity.

Regional growth diverges by farm size/infrastructure: Mature markets (North America, Europe) see retrofit and advanced tech adoption; emerging markets (Asia Pacific, Latin America) represent scale opportunities but require cost adaptation and service/infrastructure support.

Data interoperability and complexity challenge: Soil is highly variable (spatially and temporally) and integrating sensor data, remote imagery, weather/hydrology, and soil models is complex - vendors who simplify this and integrate into agronomy workflows gain advantage.

Hardware cost, durability and calibration matter: Sensors must endure field conditions (moisture, temperature, chemicals), require calibration, and anchor the total cost of ownership; vendors optimising life cycle cost and robustness earn trust.

Expansion beyond agriculture opens new segments: Soil monitoring is not solely for farmland - it also supports construction/engineering (soil stability/compaction), mining/rehabilitation, forestry and urban landscaping/green infrastructure, thereby broadening use cases.

## Soil Monitoring Market Regional Analysis

### North America

In North America the soil monitoring market is relatively mature, supported by commercial scale farms, high automation adoption, and a strong research/innovation ecosystem. Farmers and agritech firms use soil sensing plus data analytics as part of precision farming platforms; service providers and sensor manufacturers are well established. Growth is steady, with premium systems adoption and retrofit of older infrastructure. Key success factors: strong service/support networks, integration with farm management platforms, financing or leasing models for hardware.

### Europe

Europe features strong regulatory underlying themes around soil health, land rehabilitation, water use efficiency and sustainability which drive soil monitoring uptake. Sizes of farms vary, but precision agriculture concepts are well embedded in many areas. Growth is moderate, often driven by newer sensors/analytics rather than simply sensor roll out. Suppliers emphasise certification, traceability, data privacy and sustainable farming credentials.

## Asia Pacific

Asia Pacific is among the fastest growing regions for the soil monitoring market, driven by expansive agriculture (large and small farms), increasing digitisation of farms, governmental subsidy programmes, and rising awareness of yield optimisation and water scarcity. Cost sensitivity is higher, and service/support infrastructure is varied, so vendors who localise manufacturing, adapt offerings to smaller holder scale, offer bundled services or pay per use models perform well. Local partnerships and adaptation to local soils/conditions are important.

## Middle East & Africa

In Middle East & Africa, soil monitoring adoption is emerging - driven by arid and semi arid conditions where efficient water and soil management is critical, large agribusiness developments, land rehabilitation initiatives and government supported smart agriculture programmes. Challenges include lower farm automation maturity, higher upfront cost sensitivity and weaker service infrastructure. Opportunities lie in turnkey sensor + analytics packages, servicing large commercial farms or cooperatives, and coupling with irrigation/water management systems.

## South & Central America

In South & Central America the soil monitoring market is growing as agribusiness scales, precision farming concepts spread, and export oriented crops require tighter input control. However, farm sizes vary, budgets can be constrained, and distribution/service networks may lag. Vendors offering financing, local service, and simplified platforms (versus high end premium systems) tend to succeed.

## Soil Monitoring Market Segmentation

### By Offering

Hardware

Software

Services

### By System Type

Sensing and Imagery

Ground-based Sensing

Robotic and Telematics

### By Application

Agricultural

Non-agricultural

### Key Market players

Trimble, METER Group, Sentek Technologies, Campbell Scientific, Stevens Water, AquaSpy, CropX, Arable, John Deere, Yara (Ag solutions), Hortau, Soil Scout, PlantCare, Irrrometer Company, The Toro Company

### Soil Monitoring Market Analytics

The report employs rigorous tools, including Porter's Five Forces, value chain mapping, and scenario-based modelling, to assess supply–demand dynamics. Cross-sector influences from parent, derived, and substitute markets are evaluated to identify risks and opportunities. Trade and pricing analytics provide an up-to-date view of international flows, including leading exporters, importers, and regional price trends. Macroeconomic indicators, policy frameworks such as carbon pricing and energy security strategies, and evolving consumer behaviour are considered in forecasting scenarios. Recent deal flows, partnerships, and technology innovations are

incorporated to assess their impact on future market performance.

## Soil Monitoring Market Competitive Intelligence

The competitive landscape is mapped through OG Analysis' proprietary frameworks, profiling leading companies with details on business models, product portfolios, financial performance, and strategic initiatives. Key developments such as mergers & acquisitions, technology collaborations, investment inflows, and regional expansions are analyzed for their competitive impact. The report also identifies emerging players and innovative startups contributing to market disruption. Regional insights highlight the most promising investment destinations, regulatory landscapes, and evolving partnerships across energy and industrial corridors.

## Countries Covered

### North America — Soil Monitoring market data and outlook to 2034

United States

Canada

Mexico

### Europe — Soil Monitoring market data and outlook to 2034

Germany

United Kingdom

France

Italy

Spain

BeNeLux

Russia

Sweden

Asia-Pacific — Soil Monitoring market data and outlook to 2034

China

Japan

India

South Korea

Australia

Indonesia

Malaysia

Vietnam

Middle East and Africa — Soil Monitoring market data and outlook to 2034

Saudi Arabia

South Africa

Iran

UAE

Egypt

South and Central America — Soil Monitoring market data and outlook to 2034

Brazil

Argentina

Chile

## Peru

\* We can include data and analysis of additional countries on demand.

### Research Methodology

This study combines primary inputs from industry experts across the Soil Monitoring value chain with secondary data from associations, government publications, trade databases, and company disclosures. Proprietary modeling techniques, including data triangulation, statistical correlation, and scenario planning, are applied to deliver reliable market sizing and forecasting.

### Key Questions Addressed

What is the current and forecast market size of the Soil Monitoring industry at global, regional, and country levels?

Which types, applications, and technologies present the highest growth potential?

How are supply chains adapting to geopolitical and economic shocks?

What role do policy frameworks, trade flows, and sustainability targets play in shaping demand?

Who are the leading players, and how are their strategies evolving in the face of global uncertainty?

Which regional “hotspots” and customer segments will outpace the market, and what go-to-market and partnership models best support entry and expansion?

Where are the most investable opportunities—across technology roadmaps, sustainability-linked innovation, and M&A—and what is the best segment to invest over the next 3–5 years?

### Your Key Takeaways from the Soil Monitoring Market Report

Global Soil Monitoring market size and growth projections (CAGR), 2024-2034

Impact of Russia-Ukraine, Israel-Palestine, and Hamas conflicts on Soil Monitoring trade, costs, and supply chains

Soil Monitoring market size, share, and outlook across 5 regions and 27 countries, 2023-2034

Soil Monitoring market size, CAGR, and market share of key products, applications, and end-user verticals, 2023-2034

Short- and long-term Soil Monitoring market trends, drivers, restraints, and opportunities

Porter's Five Forces analysis, technological developments, and Soil Monitoring supply chain analysis

Soil Monitoring trade analysis, Soil Monitoring market price analysis, and Soil Monitoring supply/demand dynamics

Profiles of 5 leading companies—overview, key strategies, financials, and products

Latest Soil Monitoring market news and developments

## Additional Support

With the purchase of this report, you will receive

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Complimentary report update to incorporate the latest available data and the impact of recent market developments.

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## Contents

### 1. TABLE OF CONTENTS

- 1.1 List of Tables
- 1.2 List of Figures

### 2. GLOBAL SOIL MONITORING MARKET SUMMARY, 2025

- 2.1 Soil Monitoring Industry Overview
  - 2.1.1 Global Soil Monitoring Market Revenues (In US\$ billion)
- 2.2 Soil Monitoring Market Scope
- 2.3 Research Methodology

### 3. SOIL MONITORING MARKET INSIGHTS, 2024-2034

- 3.1 Soil Monitoring Market Drivers
- 3.2 Soil Monitoring Market Restraints
- 3.3 Soil Monitoring Market Opportunities
- 3.4 Soil Monitoring Market Challenges
- 3.5 Tariff Impact on Global Soil Monitoring Supply Chain Patterns

### 4. SOIL MONITORING MARKET ANALYTICS

- 4.1 Soil Monitoring Market Size and Share, Key Products, 2025 Vs 2034
- 4.2 Soil Monitoring Market Size and Share, Dominant Applications, 2025 Vs 2034
- 4.3 Soil Monitoring Market Size and Share, Leading End Uses, 2025 Vs 2034
- 4.4 Soil Monitoring Market Size and Share, High Growth Countries, 2025 Vs 2034
- 4.5 Five Forces Analysis for Global Soil Monitoring Market
  - 4.5.1 Soil Monitoring Industry Attractiveness Index, 2025
  - 4.5.2 Soil Monitoring Supplier Intelligence
  - 4.5.3 Soil Monitoring Buyer Intelligence
  - 4.5.4 Soil Monitoring Competition Intelligence
  - 4.5.5 Soil Monitoring Product Alternatives and Substitutes Intelligence
  - 4.5.6 Soil Monitoring Market Entry Intelligence

### 5. GLOBAL SOIL MONITORING MARKET STATISTICS – INDUSTRY REVENUE, MARKET SHARE, GROWTH TRENDS AND FORECAST BY SEGMENTS, TO 2034

5.1 World Soil Monitoring Market Size, Potential and Growth Outlook, 2024- 2034 (\$ billion)

5.1 Global Soil Monitoring Sales Outlook and CAGR Growth By Offering, 2024- 2034 (\$ billion)

5.2 Global Soil Monitoring Sales Outlook and CAGR Growth By System Type, 2024- 2034 (\$ billion)

5.3 Global Soil Monitoring Sales Outlook and CAGR Growth By Application, 2024- 2034 (\$ billion)

5.4 Global Soil Monitoring Market Sales Outlook and Growth by Region, 2024- 2034 (\$ billion)

## **6. ASIA PACIFIC SOIL MONITORING INDUSTRY STATISTICS – MARKET SIZE, SHARE, COMPETITION AND OUTLOOK**

6.1 Asia Pacific Soil Monitoring Market Insights, 2025

6.2 Asia Pacific Soil Monitoring Market Revenue Forecast By Offering, 2024- 2034 (USD billion)

6.3 Asia Pacific Soil Monitoring Market Revenue Forecast By System Type, 2024- 2034 (USD billion)

6.4 Asia Pacific Soil Monitoring Market Revenue Forecast By Application, 2024- 2034 (USD billion)

6.5 Asia Pacific Soil Monitoring Market Revenue Forecast by Country, 2024- 2034 (USD billion)

6.5.1 China Soil Monitoring Market Size, Opportunities, Growth 2024- 2034

6.5.2 India Soil Monitoring Market Size, Opportunities, Growth 2024- 2034

6.5.3 Japan Soil Monitoring Market Size, Opportunities, Growth 2024- 2034

6.5.4 Australia Soil Monitoring Market Size, Opportunities, Growth 2024- 2034

## **7. EUROPE SOIL MONITORING MARKET DATA, PENETRATION, AND BUSINESS PROSPECTS TO 2034**

7.1 Europe Soil Monitoring Market Key Findings, 2025

7.2 Europe Soil Monitoring Market Size and Percentage Breakdown By Offering, 2024- 2034 (USD billion)

7.3 Europe Soil Monitoring Market Size and Percentage Breakdown By System Type, 2024- 2034 (USD billion)

7.4 Europe Soil Monitoring Market Size and Percentage Breakdown By Application, 2024- 2034 (USD billion)

7.5 Europe Soil Monitoring Market Size and Percentage Breakdown by Country, 2024-

2034 (USD billion)

7.5.1 Germany Soil Monitoring Market Size, Trends, Growth Outlook to 2034

7.5.2 United Kingdom Soil Monitoring Market Size, Trends, Growth Outlook to 2034

7.5.2 France Soil Monitoring Market Size, Trends, Growth Outlook to 2034

7.5.2 Italy Soil Monitoring Market Size, Trends, Growth Outlook to 2034

7.5.2 Spain Soil Monitoring Market Size, Trends, Growth Outlook to 2034

## **8. NORTH AMERICA SOIL MONITORING MARKET SIZE, GROWTH TRENDS, AND FUTURE PROSPECTS TO 2034**

8.1 North America Snapshot, 2025

8.2 North America Soil Monitoring Market Analysis and Outlook By Offering, 2024- 2034 (\$ billion)

8.3 North America Soil Monitoring Market Analysis and Outlook By System Type, 2024-2034 (\$ billion)

8.4 North America Soil Monitoring Market Analysis and Outlook By Application, 2024-2034 (\$ billion)

8.5 North America Soil Monitoring Market Analysis and Outlook by Country, 2024- 2034 (\$ billion)

8.5.1 United States Soil Monitoring Market Size, Share, Growth Trends and Forecast, 2024- 2034

8.5.1 Canada Soil Monitoring Market Size, Share, Growth Trends and Forecast, 2024-2034

8.5.1 Mexico Soil Monitoring Market Size, Share, Growth Trends and Forecast, 2024-2034

## **9. SOUTH AND CENTRAL AMERICA SOIL MONITORING MARKET DRIVERS, CHALLENGES, AND FUTURE PROSPECTS**

9.1 Latin America Soil Monitoring Market Data, 2025

9.2 Latin America Soil Monitoring Market Future By Offering, 2024- 2034 (\$ billion)

9.3 Latin America Soil Monitoring Market Future By System Type, 2024- 2034 (\$ billion)

9.4 Latin America Soil Monitoring Market Future By Application, 2024- 2034 (\$ billion)

9.5 Latin America Soil Monitoring Market Future by Country, 2024- 2034 (\$ billion)

9.5.1 Brazil Soil Monitoring Market Size, Share and Opportunities to 2034

9.5.2 Argentina Soil Monitoring Market Size, Share and Opportunities to 2034

## **10. MIDDLE EAST AFRICA SOIL MONITORING MARKET OUTLOOK AND GROWTH PROSPECTS**

10.1 Middle East Africa Overview, 2025

10.2 Middle East Africa Soil Monitoring Market Statistics By Offering, 2024- 2034 (USD billion)

10.3 Middle East Africa Soil Monitoring Market Statistics By System Type, 2024- 2034 (USD billion)

10.4 Middle East Africa Soil Monitoring Market Statistics By Application, 2024- 2034 (USD billion)

10.5 Middle East Africa Soil Monitoring Market Statistics by Country, 2024- 2034 (USD billion)

10.5.1 Middle East Soil Monitoring Market Value, Trends, Growth Forecasts to 2034

10.5.2 Africa Soil Monitoring Market Value, Trends, Growth Forecasts to 2034

## **11. SOIL MONITORING MARKET STRUCTURE AND COMPETITIVE LANDSCAPE**

11.1 Key Companies in Soil Monitoring Industry

11.2 Soil Monitoring Business Overview

11.3 Soil Monitoring Product Portfolio Analysis

11.4 Financial Analysis

11.5 SWOT Analysis

## **12 APPENDIX**

12.1 Global Soil Monitoring Market Volume (Tons)

12.1 Global Soil Monitoring Trade and Price Analysis

12.2 Soil Monitoring Parent Market and Other Relevant Analysis

12.3 Publisher Expertise

12.2 Soil Monitoring Industry Report Sources and MethodologyOGAMV25R0484

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