

Soil Carbon Analytics Market Forecasts to 2034 – Global Analysis By Component (Hardware, Software Platforms, Data Analytics Services, and Remote Sensing Solutions), Deployment, Data Source, Technology, Application, End User, and By Geography

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Abstracts

According to Statistics MRC, the Global Soil Carbon Analytics Market is accounted for \$1.8 billion in 2026 and is expected to reach \$5.6 billion by 2034 growing at a CAGR of 15.2% during the forecast period. Soil carbon analytics refers to hardware sensing systems, software platforms, data analytics services, and remote sensing solutions that measure, monitor, model, and verify soil organic carbon stocks and flux rates across agricultural land, rangeland, and forestry ecosystems using ground-level soil sampling instruments, satellite and aerial remote sensing, machine learning prediction models, and carbon accounting frameworks to support voluntary carbon credit issuance, regenerative agriculture program monitoring, and land management optimization for climate change mitigation objectives.

Market Dynamics:

Driver:

Voluntary Carbon Market Expansion

Rapidly expanding voluntary carbon market demand for high-quality soil carbon removal credits verified through rigorous measurement, reporting, and verification frameworks is driving substantial investment in soil carbon analytics infrastructure enabling credible

carbon credit quantification at farm and landscape scales. Corporate net-zero commitments requiring nature-based carbon removal solutions are generating demand for verified soil carbon sequestration credits that can only be issued with reliable soil carbon measurement and monitoring analytics supporting MRV compliance.

Restraint:

Measurement Uncertainty Limitations

Soil carbon measurement uncertainty from natural spatial and temporal variability in soil organic carbon distribution creates verification challenges for carbon credit issuance that require extensive and costly sampling programs to achieve statistical confidence levels demanded by premium carbon market registries, limiting the economic viability of soil carbon analytics program development in diverse soil type landscapes where measurement uncertainty costs may exceed carbon credit revenue generation potential at current market prices.

Opportunity:

Satellite Remote Sensing Integration

Satellite-based soil carbon mapping integration with ground-level sampling analytics represents a transformative opportunity to dramatically reduce soil carbon monitoring costs by substituting expensive field sampling with satellite spectral reflectance analysis calibrated against limited ground truth measurements, enabling scalable monitoring of millions of hectares at costs that make soil carbon credit program participation economically viable for smallholder farmers and large-scale agricultural land managers alike.

Threat:

Carbon Market Integrity Scrutiny

Intensive media and regulatory scrutiny of voluntary carbon market offset quality including investigations of inadequate monitoring and permanence failures in nature-based carbon projects creates reputational and regulatory risk for the entire soil carbon credit market that may suppress corporate buyer confidence in soil carbon offset investments, constraining market growth even as analytical technology capabilities improve, if high-profile verification failures undermine buyer willingness to pay premium

prices for soil carbon credits.

Covid-19 Impact:

COVID-19 accelerated corporate sustainability commitment announcements as stakeholder pressure for ESG performance intensified during the pandemic, generating substantial growth in voluntary carbon market participation that elevated demand for verified soil carbon credits supporting agricultural landowner carbon revenue programs. Post-pandemic soil carbon analytics market development has been further supported by government agriculture carbon payment programs in the United States, European Union, and Australia creating institutional procurement of soil monitoring analytics for program verification.

The remote sensing solutions segment is expected to be the largest during the forecast period

The remote sensing solutions segment is expected to account for the largest market share during the forecast period, due to cost efficiency advantages of satellite and drone-based soil carbon estimation relative to field sampling that enable economically viable monitoring coverage at the landscape scales required for meaningful carbon credit program verification, combined with rapidly improving accuracy of machine learning models predicting soil organic carbon from multispectral and hyperspectral satellite imagery calibrated against ground reference data.

The cloud-based platforms segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the cloud-based platforms segment is predicted to witness the highest growth rate, driven by agricultural carbon program operators and government agencies requiring cloud-delivered soil carbon analytics platforms that aggregate multi-source satellite, sensor, and laboratory data across large geographic areas into unified carbon accounting dashboards supporting automated carbon credit verification workflows and farmer payment program administration at regional and national scales.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to the United States hosting the world's most developed voluntary carbon market infrastructure with leading soil carbon analytics companies including

Indigo Ag, Regrow Ag, and Nori generating substantial domestic revenue from farmer carbon enrollment programs, combined with USDA climate-smart agriculture investment programs creating institutional demand for soil carbon monitoring across large-scale conservation practice implementation.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, due to Australia implementing a national soil carbon measurement methodology for domestic carbon credit issuance driving substantial analytics market development, India and China implementing agricultural carbon sequestration programs requiring monitoring infrastructure, and rapidly growing regional agtech investment creating soil carbon analytics startup ecosystems serving Asia Pacific agricultural land management markets.

Key players in the market

Some of the key players in Soil Carbon Analytics Market include Indigo Ag, Pachama, Nori, Corteva Agriscience, Bayer AG, Syngenta Group, Trimble Inc., John Deere, IBM Corporation, Microsoft Corporation, Descartes Labs, Regrow Ag, Soil Capital, Planet Labs, Agreeana, Perennial, and Terramera.

Key Developments:

In March 2026, Indigo Ag launched an expanded soil carbon monitoring platform integrating satellite remote sensing with farmer-collected soil samples enabling cost-effective carbon credit verification at farm scale for regenerative agriculture programs.

In February 2026, Regrow Ag secured a major agricultural carbon program contract providing soil carbon MRV analytics for a large-scale government climate-smart agriculture program covering millions of acres of U.S. cropland.

In January 2026, Planet Labs introduced a new agricultural soil health monitoring product combining satellite imagery with machine learning soil carbon prediction models enabling continuous farm-scale carbon stock change detection.

Components Covered:

Hardware

Software Platforms

Data Analytics Services

Remote Sensing Solutions

Deployments Covered:

Cloud-Based Platforms

On-Premise Systems

Data Sources Covered:

Field Sampling

Satellite Data

Historical Databases

Technologies Covered:

Satellite Imaging

Spectral Analysis

AI & Machine Learning Models

IoT Soil Sensors

Geospatial Mapping

Applications Covered:

Carbon Credit Verification

Soil Health Monitoring

Precision Agriculture

Sustainability Reporting

Land Use Optimization

End Users Covered:

Farmers

Agritech Companies

Governments

Carbon Credit Organizations

Research Institutions

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

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL SOIL CARBON ANALYTICS MARKET, BY COMPONENT

- 5.1 Hardware
- 5.2 Software Platforms
- 5.3 Data Analytics Services
- 5.4 Remote Sensing Solutions

6 GLOBAL SOIL CARBON ANALYTICS MARKET, BY DEPLOYMENT

- 6.1 Cloud-Based Platforms
- 6.2 On-Premise Systems

7 GLOBAL SOIL CARBON ANALYTICS MARKET, BY DATA SOURCE

- 7.1 Field Sampling
- 7.2 Satellite Data
- 7.3 Historical Databases

8 GLOBAL SOIL CARBON ANALYTICS MARKET, BY TECHNOLOGY

- 8.1 Satellite Imaging
- 8.2 Spectral Analysis
- 8.3 AI & Machine Learning Models
- 8.4 IoT Soil Sensors
- 8.5 Geospatial Mapping

9 GLOBAL SOIL CARBON ANALYTICS MARKET, BY APPLICATION

- 9.1 Carbon Credit Verification
- 9.2 Soil Health Monitoring
- 9.3 Precision Agriculture
- 9.4 Sustainability Reporting
- 9.5 Land Use Optimization

10 GLOBAL SOIL CARBON ANALYTICS MARKET, BY END USER

- 10.1 Farmers
- 10.2 Agritech Companies
- 10.3 Governments
- 10.4 Carbon Credit Organizations
- 10.5 Research Institutions

11 GLOBAL SOIL CARBON ANALYTICS MARKET, BY GEOGRAPHY

- 11.1 North America
 - 11.1.1 United States
 - 11.1.2 Canada
 - 11.1.3 Mexico
- 11.2 Europe
 - 11.2.1 United Kingdom
 - 11.2.2 Germany
 - 11.2.3 France
 - 11.2.4 Italy
 - 11.2.5 Spain
 - 11.2.6 Netherlands
 - 11.2.7 Belgium
 - 11.2.8 Sweden
 - 11.2.9 Switzerland
 - 11.2.10 Poland
 - 11.2.11 Rest of Europe
- 11.3 Asia Pacific
 - 11.3.1 China
 - 11.3.2 Japan
 - 11.3.3 India
 - 11.3.4 South Korea
 - 11.3.5 Australia
 - 11.3.6 Indonesia
 - 11.3.7 Thailand
 - 11.3.8 Malaysia
 - 11.3.9 Singapore
 - 11.3.10 Vietnam
 - 11.3.11 Rest of Asia Pacific
- 11.4 South America
 - 11.4.1 Brazil

- 11.4.2 Argentina
- 11.4.3 Colombia
- 11.4.4 Chile
- 11.4.5 Peru
- 11.4.6 Rest of South America
- 11.5 Rest of the World (RoW)
 - 11.5.1 Middle East
 - 11.5.1.1 Saudi Arabia
 - 11.5.1.2 United Arab Emirates
 - 11.5.1.3 Qatar
 - 11.5.1.4 Israel
 - 11.5.1.5 Rest of Middle East
 - 11.5.2 Africa
 - 11.5.2.1 South Africa
 - 11.5.2.2 Egypt
 - 11.5.2.3 Morocco
 - 11.5.2.4 Rest of Africa

12 STRATEGIC MARKET INTELLIGENCE

- 12.1 Industry Value Network and Supply Chain Assessment
- 12.2 White-Space and Opportunity Mapping
- 12.3 Product Evolution and Market Life Cycle Analysis
- 12.4 Channel, Distributor, and Go-to-Market Assessment

13 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

- 13.1 Mergers and Acquisitions
- 13.2 Partnerships, Alliances, and Joint Ventures
- 13.3 New Product Launches and Certifications
- 13.4 Capacity Expansion and Investments
- 13.5 Other Strategic Initiatives

14 COMPANY PROFILES

- 14.1 Indigo Ag
- 14.2 Pachama
- 14.3 Nori
- 14.4 Corteva Agriscience

- 14.5 Bayer AG
- 14.6 Syngenta Group
- 14.7 Trimble Inc.
- 14.8 John Deere
- 14.9 IBM Corporation
- 14.10 Microsoft Corporation
- 14.11 Descartes Labs
- 14.12 Regrow Ag
- 14.13 Soil Capital
- 14.14 Planet Labs
- 14.15 Agreeena
- 14.16 Perennial
- 14.17 Terramera

List Of Tables

LIST OF TABLES

Table 1 Global Soil Carbon Analytics Market Outlook, By Region (2023-2034) (\$MN)

Table 2 Global Soil Carbon Analytics Market Outlook, By Component (2023-2034) (\$MN)

Table 3 Global Soil Carbon Analytics Market Outlook, By Hardware (2023-2034) (\$MN)

Table 4 Global Soil Carbon Analytics Market Outlook, By Software Platforms (2023-2034) (\$MN)

Table 5 Global Soil Carbon Analytics Market Outlook, By Data Analytics Services (2023-2034) (\$MN)

Table 6 Global Soil Carbon Analytics Market Outlook, By Remote Sensing Solutions (2023-2034) (\$MN)

Table 7 Global Soil Carbon Analytics Market Outlook, By Deployment (2023-2034) (\$MN)

Table 8 Global Soil Carbon Analytics Market Outlook, By Cloud-Based Platforms (2023-2034) (\$MN)

Table 9 Global Soil Carbon Analytics Market Outlook, By On-Premise Systems (2023-2034) (\$MN)

Table 10 Global Soil Carbon Analytics Market Outlook, By Data Source (2023-2034) (\$MN)

Table 11 Global Soil Carbon Analytics Market Outlook, By Field Sampling (2023-2034) (\$MN)

Table 12 Global Soil Carbon Analytics Market Outlook, By Satellite Data (2023-2034) (\$MN)

Table 13 Global Soil Carbon Analytics Market Outlook, By Historical Databases (2023-2034) (\$MN)

Table 14 Global Soil Carbon Analytics Market Outlook, By Technology (2023-2034) (\$MN)

Table 15 Global Soil Carbon Analytics Market Outlook, By Satellite Imaging (2023-2034) (\$MN)

Table 16 Global Soil Carbon Analytics Market Outlook, By Spectral Analysis (2023-2034) (\$MN)

Table 17 Global Soil Carbon Analytics Market Outlook, By AI & Machine Learning Models (2023-2034) (\$MN)

Table 18 Global Soil Carbon Analytics Market Outlook, By IoT Soil Sensors (2023-2034) (\$MN)

Table 19 Global Soil Carbon Analytics Market Outlook, By Geospatial Mapping

(2023-2034) (\$MN)

Table 20 Global Soil Carbon Analytics Market Outlook, By Application (2023-2034) (\$MN)

Table 21 Global Soil Carbon Analytics Market Outlook, By Carbon Credit Verification (2023-2034) (\$MN)

Table 22 Global Soil Carbon Analytics Market Outlook, By Soil Health Monitoring (2023-2034) (\$MN)

Table 23 Global Soil Carbon Analytics Market Outlook, By Precision Agriculture (2023-2034) (\$MN)

Table 24 Global Soil Carbon Analytics Market Outlook, By Sustainability Reporting (2023-2034) (\$MN)

Table 25 Global Soil Carbon Analytics Market Outlook, By Land Use Optimization (2023-2034) (\$MN)

Table 26 Global Soil Carbon Analytics Market Outlook, By End User (2023-2034) (\$MN)

Table 27 Global Soil Carbon Analytics Market Outlook, By Farmers (2023-2034) (\$MN)

Table 28 Global Soil Carbon Analytics Market Outlook, By Agritech Companies (2023-2034) (\$MN)

Table 29 Global Soil Carbon Analytics Market Outlook, By Governments (2023-2034) (\$MN)

Table 30 Global Soil Carbon Analytics Market Outlook, By Carbon Credit Organizations (2023-2034) (\$MN)

Table 31 Global Soil Carbon Analytics Market Outlook, By Research Institutions (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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