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# Carbon Farming Market - A Global and Regional Analysis: Focus on Application, Product, Carbon Credit and Debit, Opportunities for Agricultural Stake Holders and Country - Analysis and Forecast, 2024-2034

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## Abstracts

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This report will be delivered in 7-10 working days.Carbon Farming Market Overview

The carbon farming market is projected to reach $2,341.2 million by 2034 from $531.8 million in 2024, growing at a CAGR of 15.98% during the forecast period 2024-2034. Carbon farming has been gaining momentum as a key approach to addressing climate change while supporting sustainable agricultural practices. This growth is fueled by the increasing demand for carbon credits, heightened awareness of climate-friendly farming methods, and advancements in soil health monitoring technologies. Key drivers include rising government support through subsidies and incentives, growing corporate commitments to net-zero emissions, and adopting regenerative farming techniques such as cover cropping, agroforestry, and reduced tillage. The market strongly focuses on innovation and partnerships, emphasizing the dual benefits of improving farm productivity and sequestering atmospheric carbon to combat global warming.

Introduction to the Carbon Farming Market

The carbon farming market has been growing rapidly, driven by increasing global efforts to combat climate change and achieve sustainability goals. Governments and organizations have been implementing policies and offering incentives to encourage

farmers to adopt carbon sequestration practices, such as cover cropping, no-till farming, and agroforestry. The rising demand for carbon credits, fueled by corporate net-zero commitments and consumer pressure for sustainable products, has been creating new revenue opportunities for farmers. Advancements in technology, including satellite monitoring and soil analysis tools, have been enhancing the accuracy of carbon measurement and verification, making carbon farming more accessible and reliable. Additionally, partnerships among agricultural companies, technology providers, and environmental groups have been accelerating innovation and scaling adoption. These factors, combined with the need to improve soil health and agricultural resilience, underscore the rapid growth potential of the carbon farming market.

## Market Introduction

Carbon farming is an emerging market that combines sustainable agricultural practices with climate action by capturing and storing carbon dioxide in soils and vegetation. The market has been gaining momentum due to growing corporate net-zero commitments, increasing demand for carbon credits, and supportive government policies offering incentives for carbon sequestration. Technological advancements in monitoring and verifying carbon storage, such as satellite imaging and soil sensors, are boosting market credibility and adoption. As farmers seek to improve soil health, enhance productivity, and access new revenue streams through carbon trading, the carbon farming market has been positioned for significant growth, reflecting a shift toward sustainable agriculture.

## Industrial Impact

Carbon farming has emerged as a transformative solution with significant industrial impacts, particularly in sectors aiming to reduce carbon footprints. By enabling the capture and storage of atmospheric carbon in soils and vegetation, carbon farming supports industries such as food and beverage, textiles, and bioenergy in meeting sustainability targets. The European Parliament’s approval of the first-ever EU-wide carbon removal certification scheme in April 2024 provides a strong regulatory foundation for scaling carbon farming initiatives. This framework certifies various carbon removal methods, including soil management and forest restoration, ensuring adherence to robust monitoring, quantification, and sustainability standards. The initiative incentivizes large-scale carbon removal projects, aligning with the EU’s climate objectives under the Paris Agreement. Such developments enhance agricultural supply chain resilience, improve industry reputations, and align businesses with evolving consumer preferences for eco-friendly products, solidifying carbon farming as a

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key driver of sustainable industrial practices.

Market Segmentation

Segmentation 1: by Application

Agriculture

Forestry and Land Use

Agriculture to Lead the Market (by Application)

Agriculture is the leading application segment in the carbon farming market, driven by its vast potential to sequester carbon through practices such as no-till farming, cover cropping, crop rotation, and optimized fertilizer use. With a large portion of global arable land suitable for these methods, agriculture offers a scalable and impactful solution for carbon removal. In September 2022, the U.S. Department of Agriculture (USDA) expanded its Climate-Smart Commodities program, allocating $2.8 billion to support farmers adopting climate-friendly practices, including carbon sequestration methods. Farmers have been increasingly adopting carbon farming techniques to reduce greenhouse gas emissions, improve soil health, and boost crop yields. This dual benefit, combined with growing incentives such as carbon credit programs and government subsidies, positions agriculture as the dominant contributor to the market. Moreover, the integration of advanced technologies such as satellite monitoring and precision farming tools further enhances the effectiveness and adoption of carbon farming in the agricultural sector.

Segmentation 2: by Product

Carbon Management Software

Carbon Measurement and Monitoring Tools

Carbon Management Software to Lead the Market (by Product Type)

Carbon management software is the leading product segment in the carbon farming market, driving its growth with advanced capabilities that streamline carbon tracking,

reporting, and trading. This software enables farmers and businesses to monitor carbon sequestration efforts, calculate emissions reductions, and manage carbon credits with precision. Its integration with other digital tools, such as satellite imagery and IoT sensors, enhances accuracy and decision-making. The demand for carbon management software is further fueled by increasing corporate commitments to net-zero goals and the need for transparent reporting to meet regulatory and market standards. As more organizations adopt carbon farming practices, the software's role in optimizing processes and ensuring compliance positions it as a critical enabler of sustainability and profitability in the industry.

Segmentation 3: by Region

North America

Europe

Asia-Pacific

Rest-of-the-World

North America Region to Lead the Market (by Region)

North America is the leading region in the carbon farming market, driven by strong government support, innovative farming practices, and a well-established carbon credit trading ecosystem. The U.S. and Canada have introduced several policies and incentive programs to promote sustainable agriculture, including grants and subsidies for soil carbon sequestration projects. Additionally, the region benefits from advanced technologies, such as precision agriculture tools and satellite-based carbon measurement systems, which enhance the efficiency and credibility of carbon farming practices. A growing demand for carbon offsets from industries aiming to achieve net-zero emissions further boosts market growth. With an increasing focus on sustainable supply chains and environmental responsibility, North America sets the benchmark for carbon farming adoption, paving the way for other regions to follow.

Recent developments in the carbon farming market:

In September 2024, Bayer launched its ForwardFarm initiative in India, introducing carbon farming practices such as soil carbon capture and

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vermicompost application to enhance soil health and combat climate change. This effort, tailored for smallholder farmers, integrates innovative technologies to promote sustainable and climate-resilient agriculture.

In September 2024, Soil Capital raised $16.2M in Series B funding, led by Trill Impact Ventures, to scale its regenerative agriculture initiatives and expand its reach to new regions. The funding supports the enhancement of sustainability indicators such as GHG emissions, soil health, and biodiversity while enabling over 1,600 farmers in Europe to adopt carbon farming practices.

In May 2023, GrowUp Farms became the first vertical farm to partner with the Wilder Carbon Standard for Nature and Climate as an Approved Buyer. The partnership supports the Kent Heather Corrie Vale wilding project, contributing to carbon removal and biodiversity enhancement on a former golf course.

## Demand – Drivers, Challenges, and Opportunities

### Market Drivers

The growing focus on climate change mitigation is a key driver for the carbon farming market, as agriculture accounts for 11% of global greenhouse gas emissions (as of 2023). Ambitious climate goals, such as the EU's target to cut emissions by 55% by 2030 and achieve net zero by 2050, encourage cover cropping, no-till farming, and agroforestry practices. Similar commitments from countries such as the U.S., China, and Canada, combined with government incentives and carbon credit opportunities, have been driving the adoption of carbon farming while providing both environmental and economic benefits to farmers.

### Market Restraints

The carbon farming market faces significant challenges due to inconsistent and highly variable carbon credit prices, which complicate farmers' ability to adopt sustainable practices. Prices can range dramatically based on factors such as the region, type of project, carbon standards, and whether the market is voluntary or regulated, creating uncertainty around the return on investment for farmers. Without stable and predictable carbon pricing, many farmers are hesitant to transition to carbon farming, highlighting the need for standardized pricing structures and stronger regulatory frameworks to encourage widespread adoption.

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Market Opportunities

Carbon farming presents a significant market opportunity for research institutes to drive innovation in sustainable agriculture. Developing advanced tools such as soil sensors, AI-based analytics, and remote sensing can help farmers monitor carbon levels, optimize inputs, and earn carbon credits. Additionally, advancing regenerative practices such as agroforestry, cover cropping, and biochar application can improve carbon sequestration, soil health, and biodiversity, while partnerships with governments and agribusinesses can ensure practical, cost-effective solutions and reliable carbon measurement standards.

How can this report add value to an organization?

Product/Innovation Strategy: This report provides a comprehensive product and innovation strategy for the carbon farming market, highlighting opportunities for market entry, technological advancements, and sustainable practices. It offers actionable insights that enable organizations to meet carbon reduction goals, enhance soil health, and capitalize on the increasing demand for carbon credits across various sectors.

Growth/Marketing Strategy: This report outlines a robust growth and marketing strategy tailored to the carbon farming market. It emphasizes a targeted approach to identifying niche market segments, establishing competitive advantages, and implementing innovative marketing initiatives to optimize market share and financial performance. By leveraging these strategic recommendations, organizations can strengthen their market presence, exploit emerging opportunities, and drive revenue growth effectively.

Competitive Strategy: This report formulates a strong competitive strategy designed for the carbon farming market. It assesses key market players, suggests differentiation tactics, and provides guidance for maintaining a competitive edge. By following these strategic directives, companies can effectively position themselves against competitors, ensuring long-term success and profitability in a rapidly evolving market.

Research Methodology

The section exhibits the standard assumptions and limitations followed throughout the research study named Carbon Farming Market:

The scope of this report has been focused on applications and types of

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products.

The base currency considered for the market analysis is US$. Currencies other than the US$ has been converted to US$ for all statistical calculations, considering the average conversion rate for that particular year.

The currency conversion rate has been taken from the historical exchange rate of the Oanda website.

All the recent developments from January 2020 to December 2023 have been considered in this research study.

The information rendered in the report is a result of in-depth primary interviews, surveys, and secondary analysis.

Where relevant information was not available, proxy indicators and extrapolation were employed.

Any economic downturn in the future has not been taken into consideration for the market estimation and forecast.

Technologies currently used are expected to persist through the forecast with no major technological breakthroughs.

Market Estimation and Forecast

This research study employs extensive secondary sources, including certified publications, articles from recognized experts, white papers, annual reports from relevant companies, industry directories, and major databases, to gather valuable and actionable information for a comprehensive, technical, and market-oriented analysis of the carbon farming market.

The market engineering process encompasses calculating market statistics, estimating market size, forecasting trends, and conducting data triangulation (the methodology for these quantitative data processes is detailed in subsequent sections). Primary research has been conducted to collect information and validate market figures related to segmentation types and industry trends among key players in the carbon farming sector.

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## Primary Research

The primary sources involve industry experts from the carbon farming market and various stakeholders in the ecosystem. Respondents such as CEOs, vice presidents, marketing directors, and technology and innovation directors have been interviewed to obtain and verify both qualitative and quantitative aspects of this research study.

The key data points taken from primary sources include:

- validation and triangulation of all the numbers and graphs
- validation of reports segmentation and key qualitative findings
- understanding the competitive landscape
- validation of the numbers of various markets for market type
- percentage split of individual markets for geographical analysis

## Secondary Research

This research study of the carbon farming market involves extensive secondary research, directories, company websites, and annual reports. It also makes use of databases, such as ITU, Hoovers, Bloomberg, Businessweek, and Factiva, to collect useful and effective information for an extensive, technical, market-oriented, and commercial study of the global market.

Secondary research was done to obtain crucial information about the industry’s value chain, revenue models, the market’s monetary chain, the total pool of key players, and the current and potential use cases and applications.

The key data points taken from secondary research include:

- segmentations and percentage shares
- data for market value

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key industry trends of the top players of the market

qualitative insights into various aspects of the market, key trends, and emerging areas of innovation

quantitative data for mathematical and statistical calculations

Key Market Players and Competition Synopsis

The companies that are profiled in the carbon farming market have been selected based on input gathered from primary experts and analyzing company coverage, project portfolio, and market penetration.

Some of the prominent names in this market are:

Nori, Inc.

Soil Capital Ltd.

Terramera Inc.

AgriWebb

Regrow

LI-COR, Inc.

SourceTrace

Boomitra

Cultyvate

AgroCares

CarbonFarm

SpaceNus Technologies GmbH

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Agreena

Kheti Buddy

AgriProve Pty Ltd

Companies not part of the pool have been well represented across different sections of the report (wherever applicable).

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