

Growing Up: Revolutionizing Agriculture with Vertical Farming | Says Evolve Business Intelligence

The Vertical Farming Market, valued at USD 5.05 billion in 2023, is expected to grow at a compound annual growth rate (CAGR) of 24.61% from 2023 to 2033

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/EINPresswire.com/ -- The [vertical farming market](#) represents an

innovative segment of modern agriculture, where crops are cultivated in vertically stacked layers or structures within controlled environments, often indoors. This unique approach to farming leverages advanced techniques, including hydroponics, aeroponics, and aquaponics, to facilitate crop growth without relying on traditional soil-based farming

methods. Vertical farming is especially valuable in urban areas where land availability is limited, enabling efficient land use while placing food production closer to consumers. By minimizing the need for expansive farmland, vertical farming helps address logistical challenges and environmental concerns associated with traditional agriculture, reducing the carbon footprint linked to food transport and offering fresher, locally grown produce. The vertical farming market includes a diverse range of stakeholders, such as technology providers who supply advanced lighting, climate control systems, and monitoring software, as well as equipment manufacturers specializing in the infrastructure that supports stacked crop growth. Urban planners are increasingly interested in integrating vertical farming systems into city landscapes, while agricultural entrepreneurs and investors recognize the sector's potential to meet rising demand for food in densely populated areas. The market is driven by factors such as rapid urbanization, population growth, and a rising demand for locally sourced, sustainably produced food. Technological advancements, such as AI-driven crop monitoring, automation, and precision farming, are also propelling the market forward, enabling efficient resource management and improved yields. Additionally, vertical farming aligns with growing concerns about food security



and environmental sustainability, providing a promising solution to challenges like land scarcity, water conservation, and resilience against climate change impacts.

For More Information: <https://evolvebi.com/report/global-vertical-farming-market-analysis/>

The Secrets to Success

Global urbanization is accelerating rapidly, with more people now living in cities than ever before. This urban shift presents a challenge for traditional horizontal farming, which requires significant land area that urban settings often lack. Vertical farming addresses this issue by harnessing vertical space within urban environments, enabling efficient food production closer to consumers. This localized approach reduces the need for extensive transport, shortens supply chains, and provides urban dwellers with fresher produce. As climate change intensifies, extreme weather events such as droughts, floods, and heat waves are becoming more frequent, creating substantial risks for traditional agriculture, which depends on stable outdoor conditions. Vertical farming, however, offers a climate-resilient alternative. By cultivating crops in controlled indoor environments, vertical farming is shielded from the unpredictability of external weather, ensuring consistent crop yields throughout the year, regardless of climate disruptions. Water scarcity further exacerbates the challenges faced by conventional agriculture, especially in regions grappling with droughts and limited freshwater resources. Vertical farming's reliance on hydroponic and aeroponic systems, which use nutrient-rich water solutions to nourish plants instead of soil, requires significantly less water. This method not only conserves water but also allows for precision watering, reducing waste and making vertical farming an attractive option for agriculture in water-stressed areas.

The future of Vertical Farming Market

As urbanization continues to surge globally, the demand for sustainable, city-based food production solutions is intensifying. Vertical farming presents an innovative approach by transforming underutilized urban spaces—such as rooftops, abandoned buildings, and indoor environments—into productive sites for cultivating fresh produce. This method not only allows for food production closer to consumers but also helps reduce transportation costs and food miles, contributing to a lower carbon footprint in the food supply chain. Modern consumers are increasingly drawn to locally grown, fresh produce due to concerns over food safety, quality, and sustainability. Vertical farming aligns with these preferences by offering year-round production of high-quality fruits, vegetables, and herbs in carefully controlled indoor environments. This approach meets the demand for locally sourced food, reducing reliance on long-distance supply chains that are often vulnerable to disruptions. By producing food directly within urban centers, vertical farming enhances food security and improves access to fresh produce in metropolitan areas. Advanced technologies, including artificial intelligence, machine learning, robotics, and IoT sensors, are transforming the operational efficiency and economic viability of vertical farming. These technologies enable precise control over key variables such as light, humidity, and nutrient levels, allowing crops to thrive with minimal resource waste. Automation of tasks like planting, harvesting, and crop health monitoring reduces labor costs, boosts productivity, and enhances scalability. AI and machine learning algorithms can analyze vast datasets from IoT sensors to

predict crop growth patterns, optimize resource use, and reduce the need for human intervention.

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Strategic Market Segments

"The hydroponics segment is expected to grow faster throughout the forecast period.

By Growth Mechanism, the market is segmented into Hydroponics, Aeroponics, and Aquaponics. Among these, the hydroponics segment leads due to its cost-effective installation and operational simplicity. This method involves cultivating plants without soil, using a nutrient-rich solution to nourish plant roots directly. Hydroponics minimizes the risk of soil-borne diseases, making it a popular choice. Additionally, growing awareness among consumers about the health risks of pesticides has spurred demand for pesticide-free produce, further driving the preference for hydroponics."

"The climate control segment is expected to grow faster throughout the forecast period.

Vertical farming relies on various components, segmented into Lighting, Sensors, Climate Control, Building Materials, Irrigation Components, and Others. The climate control segment holds a dominant position as it enables a stable, controlled environment essential for year-round crop production. Climate-controlled vertical farming ensures precise management of key factors—such as lighting, CO₂, water, humidity, pH, and nutrient levels—enhancing crop quality and yield. The adoption of hydroponic components also reduces structural weight load, allowing for more flexible and efficient infrastructure setups."

"The tomato till segment is expected to grow faster throughout the forecast period.

In terms of crops, the market is divided into Tomatoes, Broccoli, Lettuce, Strawberries, Spinach, and Others. The tomato segment has shown significant growth, with vertical tomato farming in greenhouses enabling high yields within limited spaces. This method is especially suitable for urban settings, where vertical tomato farming produces fresher, more nutritious tomatoes with reduced transport needs and minimal use of chemicals, aligning well with consumer preferences for locally sourced produce."

"The Container-Type Vertical Farms segment is expected to grow faster throughout the forecast period.

The structure type segmentation includes Building-Type Vertical Farms and Container-Type Vertical Farms. Container-based vertical farms currently dominate this segment due to their portability and adaptability across various geographic regions. Container farms offer a mobile, flexible setup that requires neither a large land plot nor a dedicated building, making them accessible and cost-effective. The competitive landscape has also lowered the cost of shipping containers, as repurposed containers are readily available, allowing new entrants to adopt container farming and contribute to market growth."

Industry Leaders

AeroFarms LLC, Sky Greens, Agrilution, American Hydroponics, Urban Crops, Vertical Farm Systems, Everlight Electronics Co. Ltd., Hort Americas, 4D Bios Inc. and Signify.

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North America to main its dominance by 2033

North America is a key player in the vertical farming market, with the United States and Canada leading the region's growth. This dominance is largely due to North America's commitment to sustainability, innovation, and rapid adoption of advanced technologies. Urban centers such as New York City, Chicago, and Toronto have witnessed substantial investment in vertical farming projects, aiming to supply fresh, locally grown produce to dense urban populations. These cities are supporting a growing ecosystem of vertical farming startups and companies, catalyzed by consumer demand for sustainable and pesticide-free food, shorter supply chains, and fresh, nutritious produce. The region's success in vertical farming is also bolstered by favorable government policies, research initiatives, and collaboration between technology providers and agricultural entrepreneurs. These factors are accelerating the adoption of automated climate control systems, IoT sensors, and AI-powered crop management solutions within vertical farms. Consequently, North America's strong infrastructure for research and technology, combined with its focus on sustainable food systems, has established it as a leading market for vertical farming.

Key Matrix for Latest Report Update

- Base Year: 2023
- Estimated Year: 2024
- CAGR: 2024 to 2034

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Evolve Business Intelligence is built on account of technology advancement providing highly accurate data through our in-house AI-modelled data analysis and forecast tool – EvolveBI. This tool tracks real-time data including, quarter performance, annual performance, and recent developments from fortune's global 2000 companies.

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