

# **Urban Agriculture & Vertical Farming Market Forecasts to 2032 – Global Analysis By Growing Mechanism (Hydroponics, Aeroponics, Aquaponics, and Soil-Based), Structure (Building-Based Vertical Farms, Container-Based Vertical Farms, and Other Structures), Offering, Crop Type and By Geography**

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## **Abstracts**

According to Statistics MRC, the Global Urban Agriculture & Vertical Farming Market is accounted for \$180.6 billion in 2025 and is expected to reach \$315.7 billion by 2032 growing at a CAGR of 8.3% during the forecast period. Urban agriculture and vertical farming involve growing crops in controlled indoor environments or urban spaces using hydroponics, aeroponics, and LED technology. The market addresses food security, reduced transportation, and sustainable agriculture. Growth is driven by urbanization, land scarcity, and demand for fresh, locally sourced produce. Key players focus on yield optimization, resource efficiency, and technological innovation. The market serves urban consumers, commercial farms, and retailers seeking high-quality, pesticide-free produce while minimizing environmental impact and enhancing sustainability in food production within city ecosystems.

Market Dynamics:

Driver:

Rapid urbanization & shrinking available arable land

Rapid urbanization and the steady decline of arable land are driving the growth of urban agriculture and vertical farming. With increasing populations concentrating in cities, the

pressure on traditional farming systems has intensified, while urban consumers demand fresh, sustainable, and locally grown food. Vertical farming offers a solution by utilizing controlled-environment agriculture to maximize yields in limited spaces. Furthermore, the growing emphasis on food security and reduced supply chain dependency is encouraging investments in vertical farming technologies, strengthening its market presence globally.

#### Restraint:

##### Energy consumption and high cost of electricity

One of the primary restraints facing the vertical farming industry is its high energy demand, particularly related to artificial lighting, climate control, and water systems. Electricity costs significantly impact operational expenses, making scalability challenging, especially for small and medium-sized farms. Additionally, reliance on non-renewable energy sources may offset some sustainability benefits. Although renewable energy integration is being explored, current adoption remains limited. Moreover, profitability for many players is constrained by these energy-related expenses, slowing down widespread adoption despite the technological promise of vertical farming.

#### Opportunity:

##### Integration with smart city infrastructure

The integration of vertical farming into smart city projects presents a strong growth opportunity for the market. As cities adopt digital ecosystems, vertical farming can align with smart grids, IoT-based monitoring, and sustainable infrastructure. This synergy enables efficient energy use, real-time crop monitoring, and seamless food distribution networks. Additionally, government initiatives promoting green architecture and sustainable urban living further encourage this integration. Moreover, partnerships between technology providers and urban planners are expected to accelerate large-scale deployment of vertical farms, fostering long-term growth in line with urban development goals.

#### Threat:

##### Competition from conventional agriculture

Despite its advantages, vertical farming continues to face competition from conventional

agriculture, which remains cost-effective and well-established. Traditional farms can produce larger crop volumes at lower operational costs, particularly in regions with favorable climates and abundant land. Furthermore, consumer price sensitivity often leads buyers to prefer cheaper produce, posing a challenge for vertical farms that typically offer premium-priced products. Additionally, entrenched supply chains and subsidies supporting conventional farming hinder the scalability of vertical farming, requiring continuous innovation and differentiation to remain competitive in the global market.

#### Covid-19 Impact:

The Covid-19 pandemic highlighted vulnerabilities in global food supply chains, which in turn increased interest in urban agriculture and vertical farming. Movement restrictions and import disruptions underscored the need for localized, resilient food production systems. Additionally, the pandemic accelerated consumer preference for fresh and safe produce, often sourced closer to urban centers. While initial disruptions in labor and equipment availability were noted, the crisis ultimately created momentum for investments in indoor farming technologies, strengthening long-term adoption and market resilience post-pandemic.

The hardware segment is expected to be the largest during the forecast period

The hardware segment is expected to account for the largest market share during the forecast period, driven by the need for essential equipment such as lighting systems, climate control technologies, and hydroponic structures. These components form the backbone of vertical farming, ensuring optimal growing conditions and consistent yields. Furthermore, ongoing advancements in LED lighting and automated climate systems are reducing operational inefficiencies. Additionally, as large-scale vertical farms continue to expand globally, investments in robust hardware infrastructure are expected to remain strong, solidifying this segment's dominance.

The herbs & microgreens segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the herbs & microgreens segment is predicted to witness the highest growth rate, fueled by rising consumer demand for nutritious, fresh, and flavor-rich produce. These crops require shorter growth cycles, making them ideal for vertical farming models focused on rapid turnover and profitability. Moreover, the increasing adoption of healthy eating habits and the popularity of functional foods are boosting

demand. Additionally, restaurants and retailers are prioritizing microgreens and herbs due to their premium value, further accelerating their strong growth prospects in the market.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share driven by strong technological adoption, supportive government initiatives, and the presence of key vertical farming companies. Furthermore, consumer demand for sustainable and locally grown food remains high in the region, creating a favorable environment for growth. Additionally, increasing investments in indoor farming startups and advanced agricultural technologies are further reinforcing the region's leadership. Moreover, the region's well-established distribution channels and emphasis on food innovation strengthen its dominance in the global market.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR supported by rapid urbanization, growing food demand, and limited arable land. Countries such as Japan, Singapore, and China are investing heavily in vertical farming solutions to ensure food security. Additionally, government-backed initiatives promoting sustainable agriculture and technological innovation are boosting adoption. Moreover, rising awareness among consumers about healthy and pesticide-free food is creating strong demand. This combination of factors positions Asia Pacific as the fastest-growing regional market globally.

Key players in the market

Some of the key players in Urban Agriculture & Vertical Farming Market include AeroFarms, Bowery Farming Inc., Plenty, Eden Green Technology, Freight Farms, Vertical Harvest, Sky Greens, Spread, Valoya, Osram, Heliospectra AB, Signify, Everlight Electronics, Intelligent Growth Solutions (IGS), 80 Acres Farms, and Oishii.

Key Developments:

In August 2025, AeroFarms raised equity financing and refinanced its debt to expand its Danville, Virginia farm and fund pre-construction activities for a second farm. It has proven vertical farming can be sustainable and profitable at scale. AeroFarms sells microgreens in over 2,000 retail locations across the US, including Whole Foods Market

(Aug 2025). It also emerged fully funded from Chapter 11 in April 2025, accelerating its path to profitability at the Danville farm.

In August 2022, Spread raised \$30 million in Series A funding to accelerate its automated vertical farming operations including mass production of pesticide-free crops and strawberries, expanding new product lines and marketing under the 'Global Food Infrastructure' concept with a strong presence in Japan.

#### Growing Mechanisms Covered:

Hydroponics

Aeroponics

Aquaponics

Soil-Based

#### Structures:

Building-Based Vertical Farms

Container-Based Vertical Farms

Other Structures

#### Offerings Covered:

Sensors

Probes and Analyzers

Software and Services

#### Offerings Covered:

Hardware

Software

Services

#### Crop Types Covered:

Leafy Greens & Lettuces

Herbs & Microgreens

Fruits & Vegetables

Other Crop Types

#### Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

## Rest of Middle East & 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 2024, 2025, 2026, 2028, and 2032
- 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

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