

Urban Farming & Vertical Gardens Market Forecasts to 2032 – Global Analysis By Type (Hydroponics, Aeroponics, Aquaponics, Soil-Based and Hybrid Systems), Component, Crop Type, Structure, Distribution Channel, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Urban Farming & Vertical Gardens Market is accounted for \$5.6 billion in 2025 and is expected to reach \$9.2 billion by 2032 growing at a CAGR of 7.4% during the forecast period. Urban farming and vertical gardens refer to innovative agricultural practices that integrate food production into city environments by utilizing limited space efficiently. Urban farming involves cultivating crops, raising livestock, or producing food within metropolitan areas, often using rooftops, community plots, or indoor facilities. Vertical gardens, a subset of urban farming, grow plants on vertically stacked layers or wall-mounted structures, maximizing productivity in small spaces. These systems often employ hydroponics, aeroponics, or soil-based methods, supported by smart technologies for irrigation and monitoring. Together, they promote sustainability, reduce food miles, improve air quality, and provide fresh, local produce to urban populations.

Market Dynamics:

Driver:

Rising urbanization and food security concerns

The rapid pace of urbanization has heightened concerns about food security and sustainability, driving the adoption of urban farming and vertical gardens. As cities expand and arable land declines, integrating food production into urban spaces

becomes essential. These systems provide fresh, locally grown produce while reducing transportation costs and carbon emissions. Moreover, they empower communities to achieve greater food independence, supporting local economies and promoting greener, self-sustaining urban environments aligned with future smart city initiatives.

Restraint:

High initial investment

The implementation of urban farming and vertical garden systems requires substantial upfront capital for infrastructure, including hydroponic setups, LED lighting, irrigation systems, and climate control technologies. These costs can be prohibitive for small businesses and community projects. Additionally, maintenance and energy expenses further strain operational budgets. Despite long-term benefits in yield and sustainability, the heavy initial investment often limits large-scale adoption, particularly in developing regions.

Opportunity:

Advancements in technology

Continuous advancements in smart agriculture technologies such as IoT-based monitoring, automated irrigation, energy-efficient LEDs, and AI-driven growth analytics are unlocking vast opportunities in urban farming gardens. These innovations enhance resource efficiency, optimize yields, and reduce labor dependency. Integration with renewable energy sources further improves sustainability. As digital agriculture evolves, technological breakthroughs make urban food production more scalable and environmentally responsible, attracting investors and policymakers focused on sustainable urban development and food resilience.

Threat:

Scalability issues

While urban farming and vertical gardening show immense potential, scalability remains a major challenge. High operational costs, limited space availability and complex logistics hinder expansion beyond pilot projects. Moreover, inconsistent yields due to environmental variations or energy constraints can affect profitability. Integrating these

systems into existing urban infrastructures also poses regulatory and architectural barriers. Overcoming scalability issues requires strategic policy support and efficient collaboration between technology providers and local authorities.

Covid-19 Impact:

The COVID-19 pandemic significantly influenced the urban farming and vertical gardens market by highlighting the vulnerabilities of global food supply chains. Lockdowns spurred local food production initiatives and home gardening trends, increasing demand for sustainable urban agriculture. Consumers began prioritizing fresh, locally grown produce for health and safety reasons. The crisis accelerated investments in controlled-environment agriculture and smart farming technologies, fostering long-term resilience and greater self-sufficiency within cities worldwide.

The rooftop gardens segment is expected to be the largest during the forecast period

The rooftop gardens segment is expected to account for the largest market share during the forecast period, due to its efficient use of underutilized urban spaces and minimal structural modification requirements. Rooftop gardens help mitigate urban heat islands, improve air quality, and support sustainable food production in dense cityscapes. Governments and real estate developers are increasingly incorporating rooftop farms into green building designs. Their dual role in enhancing aesthetics and promoting environmental sustainability strengthens their adoption across residential and commercial sectors.

The lighting systems segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the lighting systems segment is predicted to witness the highest growth rate, due to growing integration of energy-efficient LED and smart lighting technologies. These systems enable precise control over photosynthesis cycles, improving plant health and yield in indoor or shaded environments. Technological advances by key players like Signify Holding and Intelligent Growth Solutions (IGS) have made adaptive lighting solutions more cost-efficient. The trend toward controlled-environment agriculture will continue fueling demand for innovative lighting systems.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market

share, due to dense urban populations, limited arable land, and government initiatives promoting urban sustainability. Countries such as Japan, Singapore, and China are leading in implementing large-scale vertical farming projects. Increasing consumer demand for fresh, pesticide-free produce and a growing emphasis on food security further propel regional adoption. Rapid technological adoption and urban infrastructure investments continue to strengthen Asia Pacific's dominance in this evolving market.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, owing to strong technological innovation and growing environmental awareness. The region hosts several key players pioneering vertical farming solutions, including AeroFarms, Plenty Unlimited, and Bowery Farming. Rising health consciousness, the farm-to-table movement, and supportive government incentives are fueling market expansion. Additionally, investments in smart agriculture and renewable energy integration enhance operational efficiency, making North America a leader in urban farming transformation.

Key players in the market

Some of the key players in Urban Farming & Vertical Gardens Market include AeroFarms, Spread Co., Ltd., Plenty Unlimited Inc., Eden Green Technology, Signify Holding B.V., Growspec, InFarm, Argus Control Systems Limited, 80 Acres Farms, Vertical Field, Freight Farms, Inc., Urban Crop Solutions, Bowery Farming Inc., CubicFarm Systems Corp., and Intelligent Growth Solutions (IGS).

Key Developments:

In June 2025, Solas Capital AG and Signify Holding B.V. have entered a framework agreement to roll out LED and connected lighting retrofit projects across Europe under a "Light as a Service" model. The deal removes upfront costs for clients and targets significant energy%- %and carbon-savings through large-scale building upgrades.

In March 2025, Signify and Dixon Technologies have announced the intent to form a 50:50 joint venture in India, focused on manufacturing lighting products and accessories such as LED bulbs, down-lights, spots, battens, ropes and strips — aligning with the Indian government's "Make in India" initiative.

Types Covered:

Hydroponics

Aeroponics

Aquaponics

Soil-Based

Hybrid Systems

Components Covered:

Lighting Systems

Irrigation Systems

Sensors and Monitoring Devices

Climate Control Systems

Growth Media

Nutrient Solutions

Other Components

Crop Types Covered:

Fruits & Vegetables

Herbs & Microgreens

Flowers & Ornamentals

Grains & Cereals

Other Crop Types

Structures Covered:

Building-Based

Container-Based

Rooftop Gardens

Indoor Vertical Farms

Distribution Channels Covered:

Direct Sales

Online Retail

Specialty Stores

Distributors

End Users Covered:

Residential

Commercial

Industrial

Institutional

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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