

Global Vertical Farming Market: Market Segments: By Hardware Type (Lighting, Hydroponics Components, Climate Control and Sensors); By Structure (Building-Based Vertical Farming and Shipping Container Vertical Farming); By Mechanism (Aeroponics, Hydroponics and Aquaponics); By Crop Type (Lettuce, Pepper, Broccoli, Cucumber, Spinach and Tomato); and Region – Analysis of Market Size, Share & Trends for 2014 – 2019 and Forecasts to 2030

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Abstracts

Product Overview

Vertical farming is a way of growing different kinds of products in vertically organized layers, in unused vertical warehouse spaces, in skyscrapers, in containers, etc. Vertical farming is a groundbreaking approach used in vertically stacked layers such as a skyscraper, used factory, or shipping container for the cultivation of food and medicinal plants. For several organizations, this method allows profitability to fulfill their corporate social responsibility (CSR) through sustainable agricultural practices. The other advantages of vertical farming technology include the use of technology for controlled-environmental farming and techniques for indoor farming, where all environmental factors can be controlled for crop production. Three modes or technologies are used to conduct vertical farming: aeroponics, hydroponics, and aquaponics. Different devices, fruits, vegetables, herbs, and aquatic species are used in each process. This technique of cultivation finds wide usage in several indoor and outdoor applications.

Market Highlights

Global Vertical Farming Market is expected to project a notable CAGR of 24.1% in

2030.

Global Vertical Farming Market to surpass USD 12.71 billion by 2030 from USD 2.5 billion in 2018 at a CAGR of 24.1% throughout the forecast period, i.e., 2019-30. Due to the growing popularity of organic foods, demand for the vertical farming industry is expected to grow rapidly during the forecast period. Also, these farms' vertically stacked arrangement decreases the need for additional construction activity and land. In addition, it reduces the intervention needed by machines during traditional farming. Thus, efficient use of vertical space and balanced use of resources contribute to the growth of the vertical farming industry. Furthermore, these facilities artificially require several technologies for plant development. Technologies used in this farming allow plant growth and harvesting to be controlled, which further drives the market growth.

Global Vertical Farming Market: Segments

Lighting Segment to grow with the highest CAGR during 2019-30

Global Vertical Farming Market is segmented by hardware component as lighting, hydroponics components, climate control, and sensors. The greater market share in 2018 was accounted for by the lighting segment and is also expected to witness high growth during the forecast period. Vertical farming, however, relies heavily on artificial lights. Artificial light acts as a sunlight replacement and is necessary to provide sufficient intensity of the light to allow crop growth. The primary factors considered when providing lighting for plants are the volume and length of the light. Lights either have a spectrum of light like that of the sun or a spectrum that suits the plants' needs. With different colors, temperatures, and spectral outputs from the rising lights, as well as varying the intensity output of the lamps, outdoor lighting conditions can be established. Specific spectrum ranges, luminous effectiveness, and color temperature are used for specific plants and for different time periods, depending on the type of plant being cultivated, the stage of cultivation, and the photoperiod needed.

Aquaponics mechanism segment to grow with the highest CAGR during 2019-30

Global Vertical Farming Market is segmented by mechanism into aeroponics, hydroponics, and aquaponics. The greater market share in 2018 was accounted for by the hydroponics segment and is expected to remain dominant over the forecast period. Hydroponic farming is a soil-free method of growing plants where the soil is substituted with a mineral solution inserted around the roots of the plant. In the hydroponic mechanism, plants can live for a long time in the event of a power failure, as the increasing medium continues to provide water and nutrients, unlike aeroponics, where plants can die in just a few hours due to mist spraying nozzles failing or malfunctioning. During the forecast period, the market is expected to see the fastest growth in aquaponics, as it combines both hydroponics and fish farming or aquaculture to create

an efficient closed-loop system that helps to produce various types of crops effectively.

Building-based structure Segment to grow with the highest CAGR of 24.6% during 2019-30

Global Vertical Farming Market is segmented by structure into the building based and shipping container structures. The greater market share in 2018 was accounted for by the shipping container segment and is expected to remain dominant over the forecast period. This growth is due to the structure's ability to help grow crops regardless of the geographic location. Moreover, with increased competition, the price of shipping containers falls as the cost of purchasing used containers is comparatively smaller, which allows other businesses the ability to enter the marketplace. The building-based structure is expected to rise during the forecast period at the highest CAGR. This form of farming offers almost eight times more growing areas than single-level farmland and helps to minimize the cost of farming, thus ensuring long-term food security for a city.

Global Vertical Farming Market: Market Dynamics

Drivers

Increase in popularity of organic foods

Today, people around the world have become increasingly conscious of the source of food they eat on a regular basis and have moved from foods that are processed using chemicals and pesticides to organic foods. With the rising population, the migration from rural to urban areas is also growing. The growth of the global vertical farming market is driven by evolving lifestyles, growing per capita income, and increasing health awareness among consumers. Furthermore, the increasing emphasis on reliable crop production, regardless of climatic conditions, is pushing farmers' emphasis on the environmentally friendly production of fresh fruits and vegetables. Governments of different countries are now encouraging sustainable food production through the use of organic pesticides. These factors are expected to increase the growth of modern agriculture and thus drive the growth of vertical agriculture.

High investment in vertical farming

The development of the vertical farming industry is adversely affected by the high price of farm scrapers. Most of the hardware used in the industry, due to its advanced features such as activated lights and temperature control, is very expensive. The cost of organic pesticides, which is influenced by the overall cost of investment, is also rising. The high hardware costs make it difficult for small and medium-sized companies to introduce them, which is hampering the growth of the demand for vertical farming.

Restrain

Lack of skilled workforce and technical knowledge

The use of advanced solutions, such as cameras, sensors, automated systems, artificial intelligence, and hydroponic, aquaponic, or aeroponic systems, is also used in vertical farming. Knowledgeable and professional staff are required to operate these advanced systems. Maintenance of machines and computers also includes people who are technically well-trained and equipped with all the know-how to update. The shortage of skilled labor has impacted numerous industries worldwide, and vertical farming is no exception. Most farmers are also entering this market with their systems, which are not productive and expensive in terms of construction. Vertical farms need to be up-to-date in various aspects of agriculture to maintain and stay competitive in the market.

Global Vertical Farming Market: Regions

Global Vertical Farming Market is segmented based on regional analysis into five major regions. These include North America, Latin America, Europe, APAC, and MENA.

Global Vertical Farming Market in the Asia Pacific held the largest market share of XX.X% in the year 2018 owing to the rising population of fertile agricultural land in the Asia-Pacific region is decreasing, creating an incentive for urban farming. China and India are the most populous countries and, with growing urbanization and population, the available agricultural land in these countries is declining at a rapid rate. In the coming years, rising disposable and per capita incomes across APAC are expected to drive urban farming demand. Due to the increasing expansion of genetically modified crop technology, Europe is expected to see substantial growth over the forecast period. In addition, the rising adoption of nanotechnology and robotics for agriculture increases regional market demand. The use of nanotechnology helps to enhance food packaging and enhance the control of diseases and pests.

Competitive Landscape:

The Global Vertical Farming market, which is highly competitive, consists of several major players such as AeroFarms (U.S.); Illumitex, Inc. (U.S.); and American Hydroponics (U.S.) hold a substantial market share in the Global Vertical Farming market. Other players analyzed in this report are Koninklijke Philips N.V., AeroFarms LLC, Sky Greens Pte. Ltd, Illumitex Inc, Everlight Electronics Co. Ltd, Hort Americas, Agrilution GmbH, American Hydroponics Systems Inc., Urban Crop Solutions Inc., and Vertical Farm Systems among others.

Key players are adopting inorganic growth strategies such as product launches in the global nutritional supplement market. For instance, in In In In January 2020, Osram

launched the new generation of the Oslon Square Hyper Red with a wavelength of 660 nm, which is the flagship product in Osram Opto Semiconductors' comprehensive horticulture portfolio.

Global Vertical Farming Market is further segmented by region into:

North America Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – United States and Canada

Latin America Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – Mexico, Argentina, Brazil and Rest of Latin America

Europe Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – United Kingdom, France, Germany, Italy, Spain, Belgium, Hungary, Luxembourg, Netherlands, Poland, NORDIC, Russia, Turkey and Rest of Europe

APAC Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – India, China, South Korea, Japan, Malaysia, Indonesia, New Zealand, Australia, and Rest of APAC

MENA Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – North Africa, Israel, GCC, South Africa and Rest of MENA

Global Vertical Farming Market: Key Players
Signify Holding (PHILIPS)

Company Overview

Business Strategy

Key Product Offerings

Financial Performance

Key Performance Indicators

Risk Analysis

Recent Development

Regional Presence

SWOT Analysis

Aerofarms LLC

Sky Greens

Illumitex Inc.

Everlight Electronics Co., Ltd.

Green Sense Farms Holdings. Inc

Agrilution GmbH

American Hydroponics

Urban Crops Solutions

Vertical Farm System

Gronska

V-Farm

Growup Farms Ltd.

Vertical Future Ltd.

SweGreen

Jones Food Company

InFarm

Agricool

Future crops

Global Vertical Farming Market report also contains analysis on:

Global Vertical Farming Market Segments:

By Component:

Hardware

Lighting

Grow Lights

Grow Light Reflectors

Grow Light Ballasts

Hydroponic Components

Pumps and Irrigation

Meters and Solutions

Water Filters

Others (includes Timer and Delivery System)

Climate Control

Ventilation Fans

Air Purification/ Control

Others (includes Condenser and HVAC System)

Sensors

Temperature Sensors

CO2 Sensors

Nutrient Sensors

PH Sensors

Crop Sensors

Others (Biosensors and Electronics Nose)

Software

By Structure:

Building Based

Shipping Container Based

By Mechanism:

Hydroponics
Aeroponics
Aquaponics
By Crop Type:
Lettuce
Spinach
Broccoli
Cucumber
Pepper
Tomato
Others
Global Vertical Farming Market Dynamics
Global Vertical Farming Market Size
Supply & Demand
Current Trends/Issues/Challenges
Competition & Companies Involved in the Market
Value Chain of the Market
Market Drivers and Restraints

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33. AGRILUTION GMBH

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35. URBAN CROPS SOLUTIONS

36. VERTICAL FARM SYSTEM

37. GRONSKA

38. V-FARM

39. GROWUP FARMS LTD.

40. VERTICAL FUTURE LTD.

Consultant Recommendation

****The above-given segmentation and companies could be subjected to further modification based on in-depth feasibility studies conducted for the final deliverable.**

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