Dubai's vertical farming to help quench thirst for own supply chain

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Crop One and Emirates Flight Catering (EKFC) have launched a $40 million joint venture to build the world's largest vertical farming facility in Dubai, United Arab Emirates.

The vertical farm facility will cover 130,000 square feet—with a production output equivalent to 900 acres of farmland.

The facility will go under construction near the Al Maktoum International Airport.

Locating it near the airport is an example of one of the advantages of vertical farms, in that they can be built anywhere in any climate, and here the proximity of the farm to point of consumption means less carbon emissions from transportation. Emirates Flight Catering's customers include 105 airlines and 25 airport lounges.

The construction gets under way in November, and the facility will take about a year to complete.

Dubai as a chosen venue for vertical farming is not surprising as the facility aligns with the UAE's push for more agricultural self-sufficiency and also aligns with Dubai's efforts to promote itself as an innovation hub.

As per the press release, the head of Emirates Airline and Group His Highness Sheikh Ahmed bin Saeed Al Maktoum said that "introducing the latest technology to our operations, we secure our own supply chain of high quality and locally-sourced fresh vegetables, while significantly reducing our environmental footprint."

The vertical farm's key player is this Crop One. In a video Sonia Lo, Chief Executive Officer of Crop One Holdings, presents a detailed picture of what the farm will accomplish and why vertical farming has distinct advantages as the way humans can fulfill the need to grow food in the sustainable future.

Lo appeared fully convinced that "vertical farming is really the future of agriculture."

Fundamentally, she and vertical farming champions elsewhere want to

utilize plant science to make more sense out of how to grow and get food.

Back in 2015, this site took a look at the concept and tried to pin down a description of the term. Vertical farming was about cultivating plant life in a "skyscraper" greenhouse or just on vertically inclined surfaces.

Temperature, humidity, light, water and plant nutrients are in a controlled environment and can be located anywhere. Lo said, "We are bringing online 5.3 tons a day of additional capacity this year. That makes us by an order of magnitude the largest operator and developer of vertical farms in the world."

Crop One are modular growers. They utilize sealed boxes. Their clean environment has no pesticide. No algaecide. "Any cides," she said, none. In the video Lo mentioned more farms coming on line this year.

"By the end of this year," she said, "we will be at 6 tons per day." She pointed out that their water use is far less than that required in normal farming.

They use 18,000 gallons of water a year in one of these units while one would need 46 million gallons of water in the field to grow the same amount of food in that same year.

In a 1-acre farm they grow about 400 acres worth of food.

Meanwhile, a website focused on sustainable agriculture and the food system called *Civil Eats* has delivered perspective on vertical farming that examines if it is really the magic bullet to our food futures. The headline says it clearly. "Can Vertical Farms Reap Their Harvest? It's Anyone's Bet." The industry is relatively new and more peer-reviewed research into its viability will be able to assess the big picture—carbon

footprint, profitability and scalability considerations included.

Growing crops in controlled environments – in greenhouses, plant factories and in vertical farms – provides alternatives to conventional farming," said a news item in *Cornell Chronicle*, in October, but "there is little concrete evidence to show how so-called controlled-environment agriculture (CEA) compares to conventional field agriculture in terms of energy, carbon and water footprints, profitability, workforce development and scalability." The report said Cornell would lead a project to answer those questions, with a three-year grant from the National Science Foundation.

More information: emiratesflightcatering.com/abo … g-facility-in-dubai/