

Vertical Farms Are Sprouting up in Cities Worldwide



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▲ Putting available space to work

Pick any decent-size city in the United States and you may well find a vertical farm, its crops stacked in racks inside LED-lit warehouses or multistory buildings.

Vertical farming is a method of agriculture that holds tremendous longterm promise because it could disrupt and transform agribusiness much the way the internet has upended the retail industry.

Someday, vertical farming, along with other alternative agriculture techniques, could go a long way toward helping to end world hunger. Seriously.

How? Vertical farming delivers extended or continuous growing seasons, more harvests and higher yields. Crops are grown closer to end markets, significantly reducing the supply chain and shipping costs.

Much less water is used and less, or no, soil or fertilizer is needed. The chances of drought and freezes are eliminated and pest infestations are substantially reduced.

Vertical farms, which were pioneered in such places as Japan and the Netherlands, have sprouted up globally and can be found in cities throughout North America, Europe and Asia. (Japan, in particular, remains a leader with its "plant factories.")

Venture capital and early-stage investors-including investment arms of strategic players-have been the most frequent investors in the space, with a few later-stage private equity firms entering the field so far. Still, the sector has yet to attract

significant sophisticated institutional capital in volume.

Scalability is by far the largest challenge. A vertical farm must produce enough crops at a cost structure that enables a profitable sale price to large grocery chains and not just to highend restaurants and premium neighborhood markets.

So far, a handful of substantial capital raises have been completed. Most notably, perhaps, is AeroFarms, a Newark, New Jersey-based grower operating a 69,000-square-foot warehouse facility. It raised \$30 million from Goldman Sachs, RBH Group and Prudential Financial a year and a half ago in a partnership that also included the City of Newark.

Late last year, TruLeaf Sustainable Agriculture in Bedford, Nova Scotia, closed an \$8.5 million equity financing round for an indoor multilevel farm. The Canadian company also develops sustainable farming systems that can be built anywhere and grow nutrient-dense, pesticide-free crops all year.

Infarm, a Berlin-based startup that has partnered with large German grocery corporation EDEKA, recently raised 4 million euros from Cherry Ventures, Quadia, LocalGlobe, Atlantic Food Labs, Ideo and Demand Analytics.

These numbers may seem seedsmall at present. But keep in mind that this is a rapidly growing industry with the potential to address numerous global issues and for which, literally, the sky is the limit. //