Urban farming projects attracting greater interest, investments

By The Washington Times Special Sections Department - *Wednesday, October 10, 2018*

International interest in sustainable urban ecosystems — especially vertical farming — is exploding, according to numerous market forecasts.

Valued around $2 billion in 2015, the global vertical farming market is projected to reach anywhere from $6 billion in 2022 to $10 billion by 2025, according to forecasting firms such as Research and Markets and Grand View Research.

The impetus to scale up vertical farming worldwide stems from two U.N. projections on population and urbanization: The world's population is expected to grow to 9.6 billion people by 2050, and most of these people — 68 percent, according to the U.N.'s revised 2018 urbanization report — will live in cities.

Governments, urban planners and architects, researchers, investors and the entire world of agriculture are now exploring ways to make sure there will be abundant, high-quality, nutritious foods to feed such a growing population — while also conserving energy and

water and reducing environmental damage.

To many observers, the future is bright, thanks to advances in greenhouse technologies such as hydroponics, aeroponics and aquaponics.

“These high-tech systems represent a paradigm shift in farming and food products and offer suitable and efficient methods for city farming,” Dr. Kheir Al-Kodmany, an urban planning scholar, wrote in the Buildings journal in February 2018.

Dr. Al-Kodmany and his colleagues at the University of Illinois at Chicago reviewed more than 100 sources about vertical farming research since 2010 and examined 15 vertical farming projects worldwide — including two rooftop farms in New York; four “low rise” farms in Michigan, Illinois and Tennessee; and six proposed “high rise” farms in Sweden, France, Canada and the Philippines.

“[H]ypothetically, if vertical farms were integrated in the city, they will be able to supply food for the entire population,” Dr. Al-Kodmany concluded. However, there are many challenges to address, including finding funding to build and sustain such projects; finding less costly ways to power facilities; and quickly assembling interdisciplinary research and collaborations on urban agriculture, he wrote in the Buildings article.

In the U.S., the U.S. Department of Agriculture is already supporting research funding on vertical farming through its National Institute for Food and Agriculture.

Also, on June 27-28, the USDA and the Department of Energy co-hosted a stakeholder workshop on vertical agriculture and sustainable urban ecosystems. A report on the two-day event, which was open to the public, will be issued later this year, a USDA spokesman said.

In its workshop, several USDA officials spoke, including Dr. Dionne Toombs, director of the USDA Office of the Chief Scientist; Dr. Chavonda Jacobs-Young, acting USDA chief scientist and acting deputy under secretary for research, education and economics; Dr. David Babson, senior advisor in the USDA Office of the Chief Scientist; Dr. John Hartung, research plant pathologist at the USDA’s Agricultural Research Center in Beltsville, Maryland; and Dr. Sarah Federman, AAAS Science and Technology Policy Fellow in the USDA Office of the Chief Scientist.

Additional featured speakers at the workshop included:

— Dr. Sabine O’Hara, dean of the College of Agriculture, Urban Sustainability and Environmental Sciences at the University of the District of Columbia, on envisioning ways to incentivize sustainable urban ecosystems.

— Dr. Dickson Despommier, microbiology and public health professor emeritus at Columbia University and author of the 2010 book, “The Vertical Farm: Feeding the World in the 21st Century,” on envisioning vertical agriculture.

— Dr. Nate Storey, co-founder and chief science officer at Plenty, Inc., a San Francisco-based indoor farming startup, on vertical agriculture in practice.

— Dr. Raymond Wheeler, NASA plant physiologist, on expanding applications for controlled agriculture.

— Nick Starling, U.S. Army Ranger and founder of Skyscraper Farm, LLC, on the economics and scalability of vertical farms.

— Dr. Weslynne Ashton, associated professor of environmental management and sustainability at Stuart School of Business at Illinois Institute of Technology, on industrial ecology for sustainable urban ecosystems.

The two-day workshop featured breakout sessions on pest and pathogen management, plant selection and breeding, systems engineering, community services, ecosystems services and economics.

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