



Mini Technical Assistance Panel Summary | JUNE 9, 2021

CONTROLLED ENVIRONMENT AGRICULTURE CITY ADAPTATION

Background

Climate change, labor shortages, growing population, cost, mobility and transport, carbon emissions, and land scarcity are impacting how we gain access to nutritious foods. Recently, Controlled Environment Agriculture (CEA) has arisen as a new method of local food production that has the potential to provide a range of benefits in urban areas. CEA is an innovative approach to growing fruits and vegetables in greenhouses or vertical farms, where growing environments can be optimized to increase crop productivity and quality and consumers benefit from year-round locally grown produce. The potential benefits from an active and dynamic CEA industry in the New York Metropolitan area—and other urban centers—include decreased reliance on transportation over long distances, year-round provision of fresh produce, job creation and economic development, and an ability to enhance food security through co-location of CEA's within or adjacent to communities that are at risk.

The Assignment

ULI New York convened a Mini Technical Assistance Panel (mTAP) in June 2021 that brought together leading national and international developers of CEAs, academic leaders in the industry, and a cross representation of ULI members with experience in development, finance, engineering, community planning, urban planning and design, and environmental services. Faculty in Cornell University's College of Agriculture and Life Sciences served as the project sponsor. ULI New York worked with Professor Neil Mattson, Director of the Cornell CEA Program, to develop a series of questions and topics for the mTAP. The four-hour mTAP provided a unique opportunity for agricultural experts to hear practical and useful insight about developing and implementing CEA projects in an urban environment.

The mTAP included breakout sections that allowed participants to focus on three key areas: (1) Community and Workforce (2) Site & Facility, Land Use Policy, & Infrastructure; and (3) Economics (Market, Operation, and Product). A brief summary of discussion topics, opportunities, and issues that emerged from the mTAP discussion include:

- **COMMITMENT TO COMMUNITY ENGAGEMENT:** CEA operations should not be planned and implemented from the top-down but need to be built on relationships and compatibility with the community and the local consumers, current food producers, distributors, and resale and wholesalers. It is important to ensure that new operations do not take limited funding away from existing urban agriculture and are complementary to the current food access projects that are in each community

- **ECONOMIC OPPORTUNITY:** CEA can be an economic development opportunity for cities. Developers, investors, and providers typically seek industrial sites and require certainty of access to markets and viable distribution centers. These sites are often in economically disadvantaged communities.
- **FOCUS ON PRODUCT NUTRITION:** CEA should not be developed in communities under the guise of solving food insecurity and end up only producing high-priced produce destined for restaurants and markets and not serving the host communities. For CEA to be of higher value to communities they need to work toward a more diverse product offering (i.e., higher caloric and protein content) and have a mechanism to ensure localized market delivery.
- **WORKFORCE POTENTIAL:** CEA operations have the potential to be good employment generators and workforce training opportunities. However, inherent tension between workforce opportunities and increasing automation may limit job opportunities in the future. In practice, CEAs provide a wide spectrum of work opportunities including entry level and more advanced technology applications, and that is not likely to change even with increasing automation. Teaming and coordination with local workforce development and community colleges can enhance the value of CEA in the community.
- **IMPORTANCE OF OPERATIONS AND STANDARDIZATION:** CEA developments need clearly defined and predictable land use and development processes. CEA providers should develop a better understanding of operating characteristics that will be important to communities and the decision-makers approving CEA projects in the future.
- **LEVERAGING THE OPPORTUNITY:** CEA represents great opportunities for co-location with other production industries. In particular, taking advantage of the Carbon capture sequestration opportunities of CEAs that require CO2 for plant production. There may be opportunities to capture waste heat from co-locating industries in winter months and to capture biosolids from waste treatment facilities for energy and compost.

This CEA mTAP represents ULI New York's first probe into the topic and should be considered a starting point for continued engagement of the CEA industry with planning, economic development, community leader, investor, and elected constituents necessary for successful urban application.

Sponsor Organization

Controlled Environment Agriculture program, Cornell University College of Agriculture and Life Sciences

ULI New York TAPs Steering Committee Champions

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Technical Panelists

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