



CEA Alliance Webinar



USDA Resources for CEA Growers

June 20, 2024

CEA ALLIANCE HOSTS:

Tom Stenzel

Executive Director

Colin O'Neil

Bowery Farming

Chair, CEA Alliance Public Policy Working Group

USDA PRESENTERS:

Sanah Baig

Deputy Under Secretary for USDA REE

Melissa Bailey, PhD

Associate Administrator, USDA AMS

Brian Guse

Director, OUAIP, USDA NRCS

1



CEA ALLIANCE



Sanah Baig

Deputy Under Secretary

USDA Research, Education, and Economics (REE)

2



Overview of USDA's Research, Education & Economics Mission Area (REE) Controlled Environment Agriculture Activities

Prepared for the Controlled Environment Agriculture Alliance Webinar

June 20, 2024

Sanah Baig
Deputy Under Secretary for REE

USDA Research, Education, and Economics
U.S. DEPARTMENT OF AGRICULTURE

3

Mission of REE

REE is dedicated to creating a safe, sustainable, competitive, and equitable U.S. food and fiber system. We support American farmers, ranchers, and foresters and help build stronger communities, families, and youth through sound integrated research, analysis, and education.



Agricultural Research Service



Economic Research Service



National Agricultural Statistics Service



National Institute of Food and Agriculture



Office of the Chief Scientist

USDA Research, Education, and Economics
U.S. DEPARTMENT OF AGRICULTURE

USDA Science
"Cultivating Scientific Innovation"

4



5

National Agricultural Statistics Service (NASS) CEA Data

2022 Census of Agriculture Reported...

Selected Characteristics of Farms by North American Industry Classification System: 2022

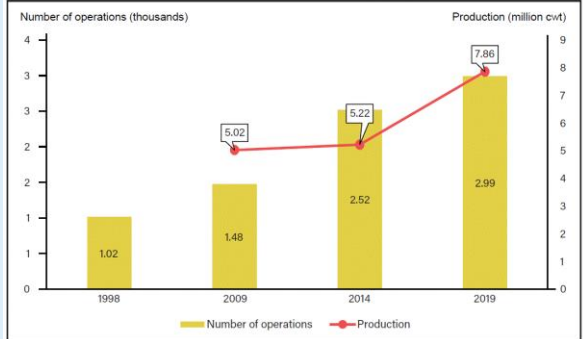
	Farms	Land in Farms (acres)	Harvested Cropland (acres)
Food crops grown under cover (11141)	4,199	174,637	17,951



6

Economic Research Service (ERS) on CEA Market Trends (1998–2019)

Figure 2
U.S. controlled environment agriculture operations and production, 1998, 2009, 2014, and 2019



cwt = hundredweight.

Note: Includes commercial controlled environment agriculture (CEA) operations that reported sales of \$10,000 or more by calendar year, except for a small number of operations that maintain their records on a fiscal year basis. CEA production statistics were not reported in 1998.

Source: USDA, Economic Research Service using data from the USDA, National Agricultural Statistics Service, *Census of Horticultural Specialties, 1998–2019*.

Steady growth in:

- Number of operations & quantity of production
- 60% of CEA-produced tomatoes, cucumbers & lettuce are grown hydroponically

Value of sales (real dollars)

- Increasing through 2014
- Slight decline in 2019

Primary CEA Crops:

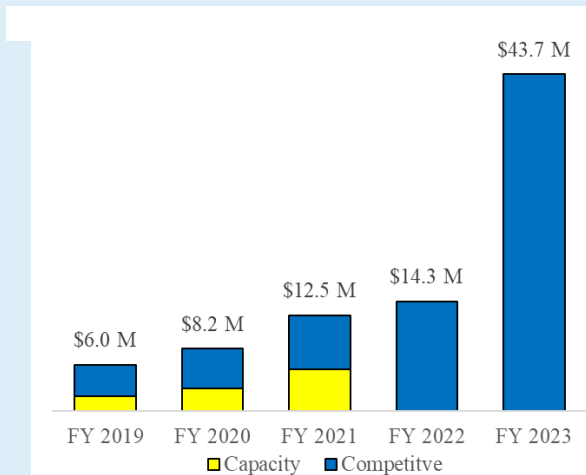
- Tomatoes, lettuce, cucumbers, herbs, strawberries, peppers

Agricultural Research Service (ARS) Grand Challenge Project on CEA

- First established in 2018
- >30 scientists in 15 locations nationwide
- 16 converted shipping containers for CEA research in Charleston, SC
- 2024 USDA-DOE-NASA joint CEA workshop to be held in Charleston, SC on July 8-11, 2024



National Institute of Food & Agriculture (NIFA) CEA Engagements



- NIFA has invested **\$84.7M** in controlled environment agriculture projects since 2019.
- Of those **147 awards**, **50** were capacity grants totaling **\$10.3M (yellow)** and **97** were competitive grants totaling **\$74.4M (blue)**.
- The significant jump in FY23 is due in part to:
 - \$20M** AFRI Sustainable Agricultural Systems grants
 - \$4.5M** NEXTGEN grant
 - \$4M** AFRI Regional Innovation for Climate Smart Agriculture and Forestry grant

Office of the Chief Scientist CEA Engagements

2018

Workshop focused on the potential of indoor agriculture, in the context of sustainable urban ecosystems



2019

Workshop with the University of Arizona on Controlled Environment Indoor & Vertical Food Production

2023

Organized & moderated two sessions on plant breeding for CEA & the economics of CEA at the ARS-University of Toledo CEA Workshop

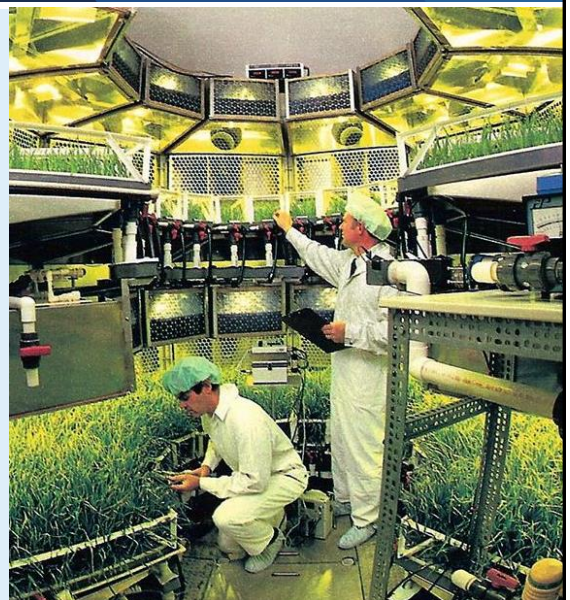


2023-present

Facilitated USDA & NASA collaborations to advance U.S. missions in space & agricultural productivity on Earth

2024

Co-organizing a workshop with ARS & Clemson University at Charleston, SC for July 2024





11



12

CEA Strategies in USDA's Science & Research Strategy



Priority I:

Accelerating
Innovative
Technologies
& Practices



1.2

Developing precision environmental management decision support tools that account for multiple factors.
(Objective 1.2)

1.5

Identifying and advancing opportunities to develop production systems for alternative environments such as zero-gravity, desert, controlled environment, high altitude, etc. **(Objective 1.5)**

1.5

Advancing scalable production systems to support small and mid-size producers to supplement large-scale commercial production (e.g., varieties that work well in small-scale conditions). **(Objective 1.5)**

13



THANK YOU!

Sanah Baig

Email: sanah.baig@usda.gov

Follow us:



@USDAScience



USDA Research, Education, and Economics
U.S. DEPARTMENT OF AGRICULTURE

14



CEA ALLIANCE

**Brian Guse**

Director, Office of Urban Agriculture and Innovative Production (OUAIP)
 USDA Natural Resources Conservation Service (NRCS)

15



U.S. DEPARTMENT OF AGRICULTURE

Office of Urban Agriculture and Innovative Production


usda.gov/urban


16

USDA
United States Department of Agriculture

Community Gardens and Farms

Rooftop farms, vertical production, green walls

Hydroponic, aeroponic, and aquaponics

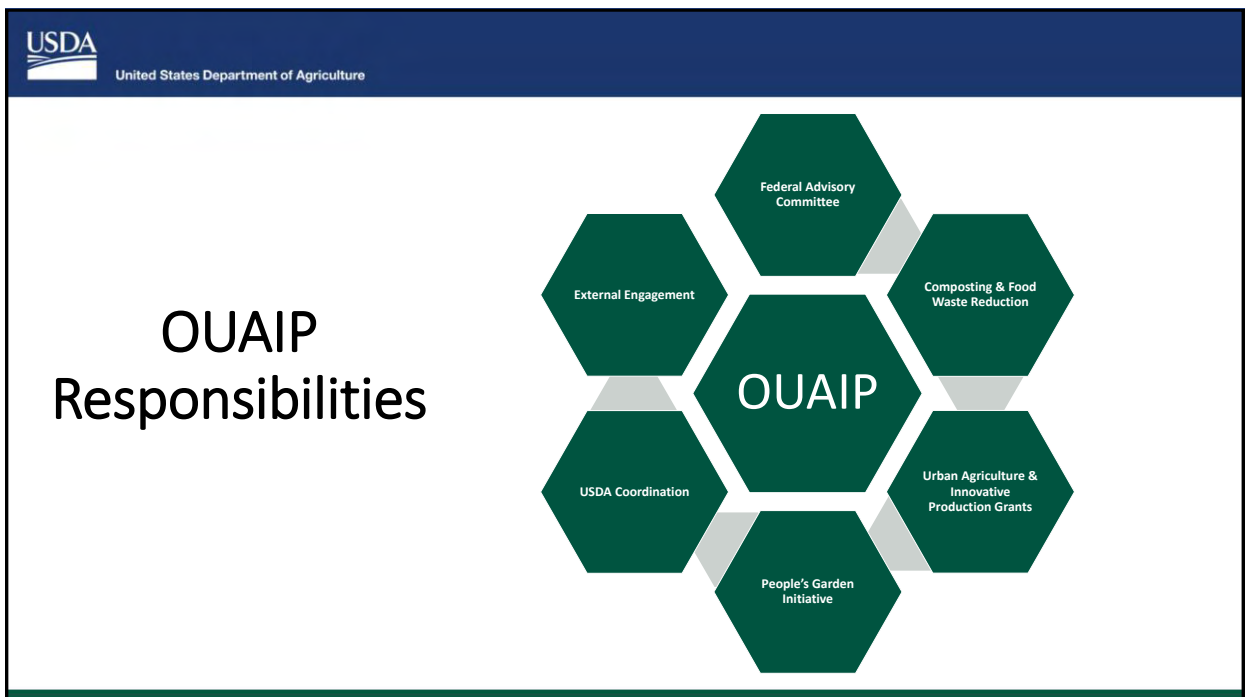
Indoor farms, greenhouses

Food waste reduction

Composting

OUAIP Mission

17



18



United States Department of Agriculture

Urban Agriculture and Innovative Production Advisory Committee

Overview: Twelve committee members advise the Secretary of Agriculture on the development of policies and outreach relating to urban, indoor, and other emerging agricultural production practices.



Duties:

- Develop recommendations on policies, initiatives, and outreach
- Evaluate and review ongoing research and extension activities
- Identify new and existing barriers

usda.gov/partnerships/federal-advisory-committee-urban-ag



19



United States Department of Agriculture

USDA Coordination

- USDA Internal Advisory Committee
- Cross marketing of USDA Programs
- Program policy feedback
- USDA-wide training

Crop Insurance for Innovative Producers and Urban Farmers



tinyurl.com/48wdnffw

Innovative Production

Innovative production is a diverse and dynamic area of agriculture, including indoor controlled environment agriculture, rooftop farms, outdoor vertical production, green walls, high-tech vertical farms, greenhouses, and hydroponic, aeroponic, or aquaponic farms. These operations are creating new and better markets, enhancing the competitiveness of specialty crops, and creating economic opportunities for the next generation of agricultural producers. They also support climate resilient food systems by extending the growing season, conserving water, and providing local and regional food options.



tinyurl.com/ye27au36

20



United States Department of Agriculture

External Coordination

- Conferences and Presentations
 - Indoor AgTech Innovation Summit, June 24-25, Chicago, IL.
 - 2024 Joint National Workshop on Sustainable Development of Controlled Environment Agriculture, July 9-12, 2024, Charleston, SC.
 - National Children & Youth Garden Symposium, July 8-11, Chicago, IL.
 - Aquaponics Association, September 12-15, Dallas, TX.
- Advisory Board
 - The CEA Accelerator Advisory Council
- State and Local Policies Project



21



United States Department of Agriculture

Integration in Programs

- Integrate within existing OUAIP programs
- Workforce Development
- Composting and Food Waste Reduction open now!



← Closes Sept. 4



Nixa School District, MO



NY Sun Works, NY



Savannah Hydroponics & Organics, GA

22

USDA
United States Department of Agriculture

Thank you!

usda.gov/urban farmers.gov/urban Sign-up for our newsletter!




USDA is an equal opportunity provider, employer, and lender.

23

 **CEA ALLIANCE**



Dr. Melissa R. Bailey
Associate Administrator
USDA Agricultural Marketing Service (AMS)

24



Agricultural Marketing Service

Creating Opportunities for American Farmers and Businesses

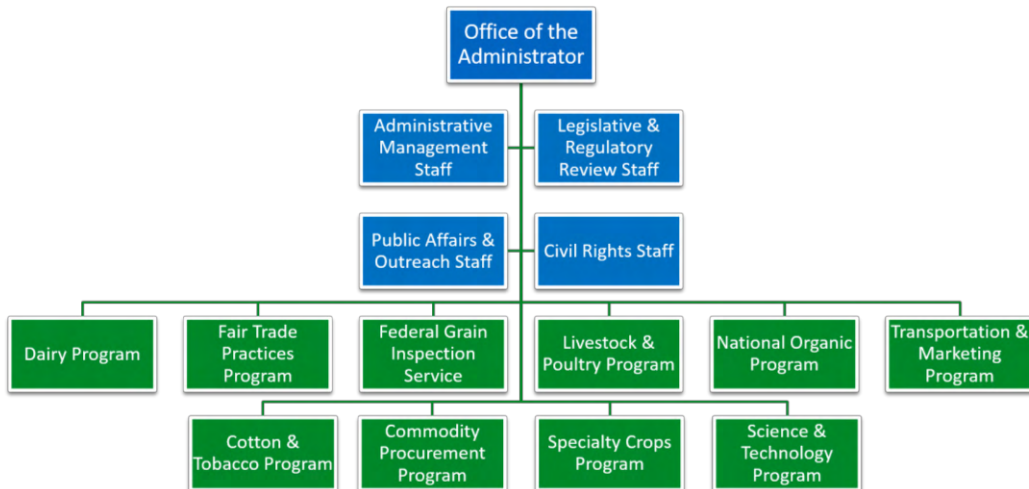


Dr. Melissa R. Bailey | Associate Administrator

Dr. Melissa R. Bailey is an Associate Administrator of USDA's Agricultural Marketing Service (AMS). In this position, Melissa supports the agency's daily operations and program delivery, including the implementation of key commodity grading programs, market information services, and financial and technical assistance related activities. She also provides expertise and policy direction for USDA's supply chain efforts and for agency-wide innovation initiatives.

25

AMS Organizational Structure



26

AMS Resources of Interest to CEA Growers



PACA Trust

The **Perishable Agricultural Commodities Act (PACA)** protects businesses dealing in fresh and frozen fruits and vegetables by:

- Establishing and enforcing a code of fair business practices.
- Helping companies resolve business disputes.



Market News

Market News Services provides free, unbiased price and sales intelligence to assist in the marketing and distribution of farm commodities.

These reports benefit:

- Farmers
- Producers
- Other agricultural businesses

27

AMS Resources of Interest to CEA Growers



Organic Certification

Organic Certification verifies that farms and handling facilities comply with the USDA organic regulation & allows farmers and businesses to sell, label, and represent their products as organic.



GAP Audit & Certification

- Science- & process-based evaluations by trained experts.
- Provides verification of products in wholesale & consumer markets.
- Used for international trade & equivalency arrangements.



28

For market access, I need to show:

Global Food Safety Initiative (GFSI)
technical equivalence

FDA FSMA Produce Safety Rule alignment

Produce GAP Harmonization Initiative alignment

Adherence to industry and FDA best practices

The USDA GAP service for you

USDA Harmonized GAP Plus+

USDA Harmonized GAP

USDA GAP

29

Food Systems Transformation (FST) Efforts + Grant Opportunities



30

Resilient Food System Infrastructure (1)

Resilient Food System Infrastructure (RFSI) will build resilience in the middle-of-the-supply-chain and strengthen local and regional food systems by creating new revenue streams for their state's producers.

- The Department of Agriculture **in each State** will serve as a Lead State agency.

What is the Middle of the Supply Chain:

- The ***middle of the food supply chain*** refers to the activities that take place after the production and harvesting of the ag products, before reaching the consumers.

What Agriculture Products are Eligible?

- This program is to support food system crops and products meant for human consumption
 - **Ineligible products include:** meat and poultry, wild-caught seafood, exclusively animal feed and forage products, fiber, landscaping products, tobacco, or dietary supplements.

31

Resilient Food System Infrastructure (2)

What Entities are Eligible to Apply for RFSI grants?

- Agricultural producers or processors, or groups of agricultural producers and processors.
- Nonprofit organizations operating middle-of-the-supply-chain activities such as processing, aggregation, distribution of targeted agricultural products.
- For-profit entities operating middle-of-the-supply-chain activities such as processing, aggregation, or distribution of targeted agricultural products, whose activities are primarily focused for the benefit of local and regional producers, and that meet the eligibility requirements of the SBA small business size standards are eligible.
 - For-profit entities must meet the eligibility requirements of the SBA small business size standards matched to industries described in the North American Industry Classification System (NAICS).
- Local government entities operating middle-of-the-supply-chain activities such as processing, aggregation, distribution of targeted agricultural products.
- Tribal governments operating middle-of-the-supply-chain activities such as processing, aggregation, distribution of targeted agricultural products.
- Institutions such as schools, universities, or hospitals bringing producers together to establish cooperative or shared infrastructure or invest in equipment that will benefit multiple producers middle-of-the-supply-chain activities such as processing, aggregation, distribution of targeted agricultural product.

32

Resilient Food System Infrastructure (3)

Infrastructure Grant- Min award \$100,000 and maximum award \$3M

- Subawards that will fund projects that expand capacity and infrastructure for the aggregation, processing, manufacturing, storing, transportation, wholesaling, or distribution of targeted agricultural products.
 - Match Requirement


Equipment-Only Grant- Min award \$10,000 and maximum award \$100,000

- The Simplified Equipment-Only option is a Fixed Price Grant, funding only equipment purchases (and not associated facility upgrades, staffing, or other costs), and the amount awarded will be equal to the cost of the equipment up to \$100,000.
 - No match is required for this grant type.

How to Apply:

- Apply through your state department of agriculture – who are partnering with USDA to competitively subaward Infrastructure Grants
- They are opening their Request for Applications (RFA) as state plans are finalized.
- Check State's RFA Status Here:
 - ✓ <https://www.ams.usda.gov/services/grants/rfsi/rfsi-rfa-status>

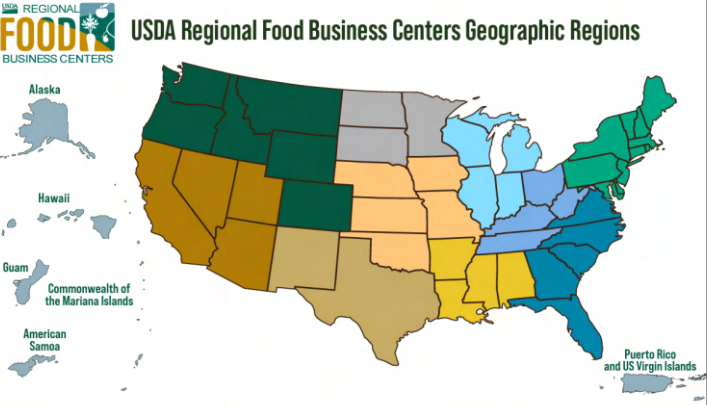
33



REACH

11 Regional Food Centers
1 National Intertribal Food Center

Each Center has a Lead Organization and multiple Key Partner groups representing the region's diverse food and farm, business development, finance, and education sectors



USDA Regional Food Business Centers Geographic Regions

★ National Intertribal Food Business Center - Intertribal Agriculture Council will serve tribes nationwide.

<p>Northwest and Rocky Mountain Colorado State University</p> <p>Southwest University of California (This Center will serve the Colonias counties in California and Arizona.)</p> <p>North Central Region Five Development Commission</p> <p>Heartland University of Nebraska - Lincoln</p> <p>Rio Grande Colonias Texas AGM AgriLife (This Center will serve the Colonias counties in New Mexico and Texas.)</p>	<p>Great Lakes Midwest Michigan State University Center for Regional Food Systems</p> <p>Delta Mississippi Delta Council for Farmworker Opportunities</p> <p>Appalachia Rural Action, Inc.</p> <p>Northeast National Association of State Departments of Agriculture Foundation</p> <p>Southeast Georgia Minority Outreach Network</p> <p>Islands and Remote Areas Hawaii Good Food Alliance</p>
--	--

*These boundaries are not rigid but for visualization purposes only. USDA anticipates collaboration with communities across state and county lines.

34



Regional Centers + Business Builder Sub Awards:



Technical Assistance

Training, consultation, and other support



Coordination

Intentional connection to USDA and other funding and resources; deepening and broadening networks and collaboration



Capacity Building

Direct investment in small and mid-sized food and farm business through sub award program

- Centers will fund small and mid-sized farm and food businesses through sub-awards.
- Capacity building efforts will focus on emerging regional needs and businesses that are working towards expansion and other investment.
- Centers will help local businesses and organizations build capacity to apply for funding (grants, loans) and execute successful projects.
- Centers will provide Business Builder subawards up to \$100,000.

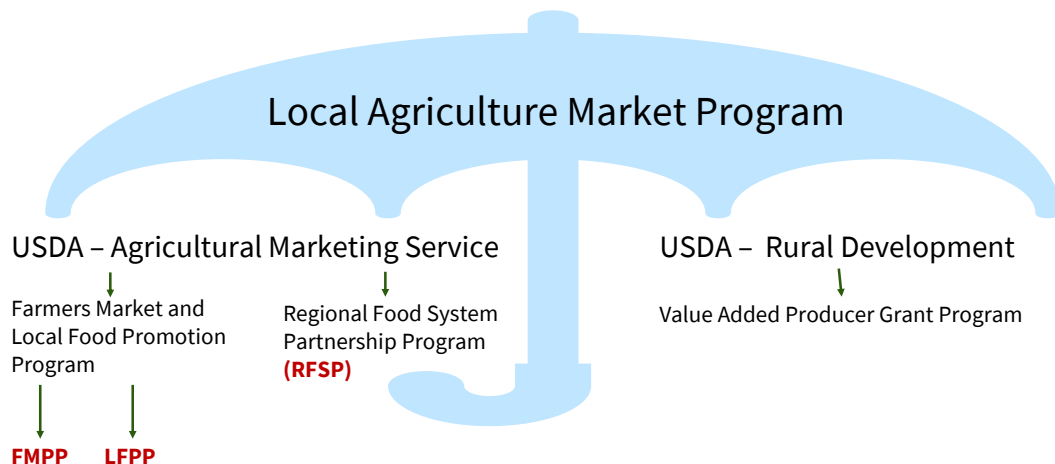
Business Builder Grant Status

<https://www.ams.usda.gov/services/local-regional/rfbcp/grant-status>

35

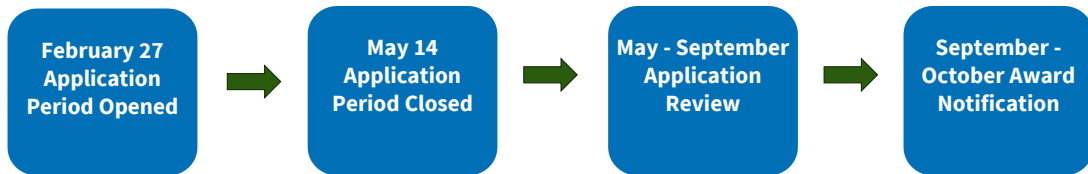
USDA Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

What is LAMP?



36

2024 LAMP Award Timeline FMPP, LFPP & RFSP



37

FY24 Farmers Market Promotion Program Projects

Project Type	Amount	Duration
Turnkey: Marketing & Promotion Recruitment & Training	\$50,000 - \$100,000	24 Months (2 years)
Capacity Building (CB)	\$50,000 - \$250,000	36 Months (3 years)
Community Development, Training, and Technical Assistance (CTA)	\$100,000 - \$500,000	36 Months (3 years)

**25%
Match**

FY24 Local Food Promotion Program Projects

Project Type	Amount	Duration
Planning	\$25,000 - \$100,000	24 Months (2 years)
Turnkey: Marketing & Promotion Recruitment & Training	\$50,000 - \$100,000	24 Months (2 years)
Implementation	\$100,000 - \$500,000	36 Months (3 years)

**25%
Match**

38

FMPP + LFPP Applicant Eligibility

- Agricultural Business
- Producer Networks
- CSA Networks
- Food Councils
- Local Governments
- Non-Profit Corporations
- Public Benefit Corporations
- Economic Development Corporations
- Regional Farmers Market Authorities
- Tribal entities



39

Regional Food System Partnership

FY24 RFSP Project Types

Type	Amount	Duration
Planning & Design Grants	\$100,000 - \$250,000	24 months (2 years)
Implementation & Expansion	\$250,000 - \$1,000,000	36 months (3 years)


**25%
Cash
Match**

Who is Eligible to Apply?

- **Partnership:** An agreement between one or more eligible entities and one or more eligible partners.
- An eligible entity or an eligible partner can submit the application on behalf of the partnership.

Eligible Entities	Eligible Partners
Producer	State Agencies or Regional Authorities
Farmer or Rancher Cooperative	Philanthropic Corporations
Producer Network or Association	Private Corporations
Majority-Controlled Producer-Based Business	Institutions of Higher Education
Venture	
Food Council	Commercial, Federal or Farm Credit System Lending Institutions
Community Supported Agriculture (CSA) Network or Association	
Local Governments	
Nonprofit Corporations	
Public Benefit Corporations	
Economic Development Corporations	
Regional Farmers Market Authorities	
Tribal Governments	

40

 Agricultural Marketing Service <small>U.S. DEPARTMENT OF AGRICULTURE</small>		PAUSE for Screen Shots	
Key Contact Information			
GAP Audits <i>Ryan Wilson, Director</i> Ryan.Wilson@usda.gov Audit Services SCAudits@usda.gov Web: https://www.ams.usda.gov/services/auditing/gap-ghp nEW USDA GAP Water FAQs https://www.ams.usda.gov/sites/default/files/media/GAPWATERFAQS.pdf	PACA <i>Judith Rudman, Director</i> judith.rudman@usda.gov <i>Travis Hubbs, Deputy Director</i> travis.hubbs@usda.gov National License Center PACALicense@usda.gov PACA Licensing: https://www.ams.usda.gov/rules-regulations/paca/licensing	Organics <i>Jennifer Tucker, Deputy Administrator</i> Jennifer.Tucker@usda.gov <i>Andrew Malone, Associate Deputy Administrator</i> Andrew.Malone@usda.gov National Organic Program NOP.Guidance@usda.gov Organic Insider https://www.ams.usda.gov/reports/organic-insider	Market News <i>Jason Karwal, Acting Director</i> jason.karwal@usda.gov <i>Heather Farber-Lau, Acting Deputy Director</i> heather.farber-lau@usda.gov Web: https://www.ams.usda.gov/market-news

41

 Agricultural Marketing Service <small>U.S. DEPARTMENT OF AGRICULTURE</small>		PAUSE for Screen Shots	
Grants Contact Information			
<p>Web: https://www.ams.usda.gov/services/grants</p> <p>E-mails:</p> <p>AMS General Grants: amsgrants@usda.gov</p> <p>RFSI: RFSI@usda.gov</p> <p>RFBC: RegionalFoodCenters@usda.gov</p> <p>FMPP and LFPP: FMLFPPgrants@usda.gov</p> <p>RFSP: IPPGrants@usda.gov</p> <p>THANK YOU</p> <p>Subscribe to get Email Updates: www.ams.usda.gov/subscribe</p>			



42



CEA Alliance Webinar



USDA Resources for CEA Growers

June 20, 2024

CEA ALLIANCE HOSTS:

Tom Stenzel

Executive Director

Colin O'Neil

Bowery Farming

Chair, CEA Alliance Public Policy Working Group

USDA PRESENTERS:

Sanah Baig

Deputy Under Secretary for USDA REE

Melissa Bailey, PhD

Associate Administrator, USDA AMS

Brian Guse

Director, OUAIP, USDA NRCS