



National Institute of Food and Agriculture

U.S. DEPARTMENT OF AGRICULTURE

BIOENERGY, CLIMATE, AND ENVIRONMENT
FOOD PRODUCTION AND SUSTAINABILITY
YOUTH, FAMILY, AND COMMUNITY
FOOD SAFETY AND NUTRITION
INTERNATIONAL PROGRAMS

NIFA

NIFA Food and Nutrition Security Webinar Series in partnership with the NIFA Climate Change Priority Team
Strengthening Intersections between Climate Change, Food Systems, and Nutrition Security
January 24, 2024

INVESTING IN SCIENCE | SECURING OUR FUTURE | WWW.NIFA.USDA.GOV

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Meeting Logistics

- This webinar is being recorded
- Call 1-888-799-0125, Option 2 if you need Zoom support
- Use the Zoom Q&A Box for questions or comments
- Check out <https://nifa.usda.gov/program/nifa-nutrition-security-webinar-series> in a few weeks for today's recording, slides, along with a new LRFS topic page and fact sheet



USDA Actions on Advancing Food & Nutrition Security

Nutrition security means having consistent and equitable access to healthy, safe, affordable foods essential to optimal health and well-being.





NIFA Food and Nutrition Security Team

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NIFA's Cross Priority Approach

- Address knowledge gaps & opportunities
- Spur innovation & accelerating change
- Empower individuals and communities
- Support synergies across diverse priorities

Climate Change



Nutrition Security



**Diversity, Equity,
Inclusion &
Accessibility (DEIA)**

**Market Opportunities
Workforce Development**



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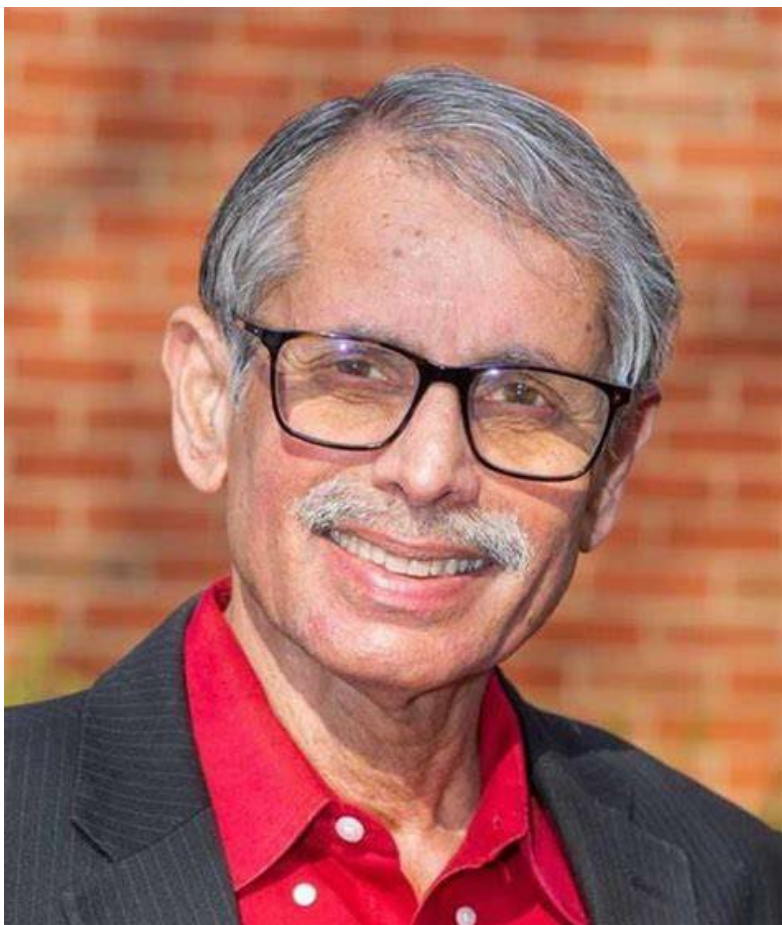
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Relevant AFRI Foundational Programs

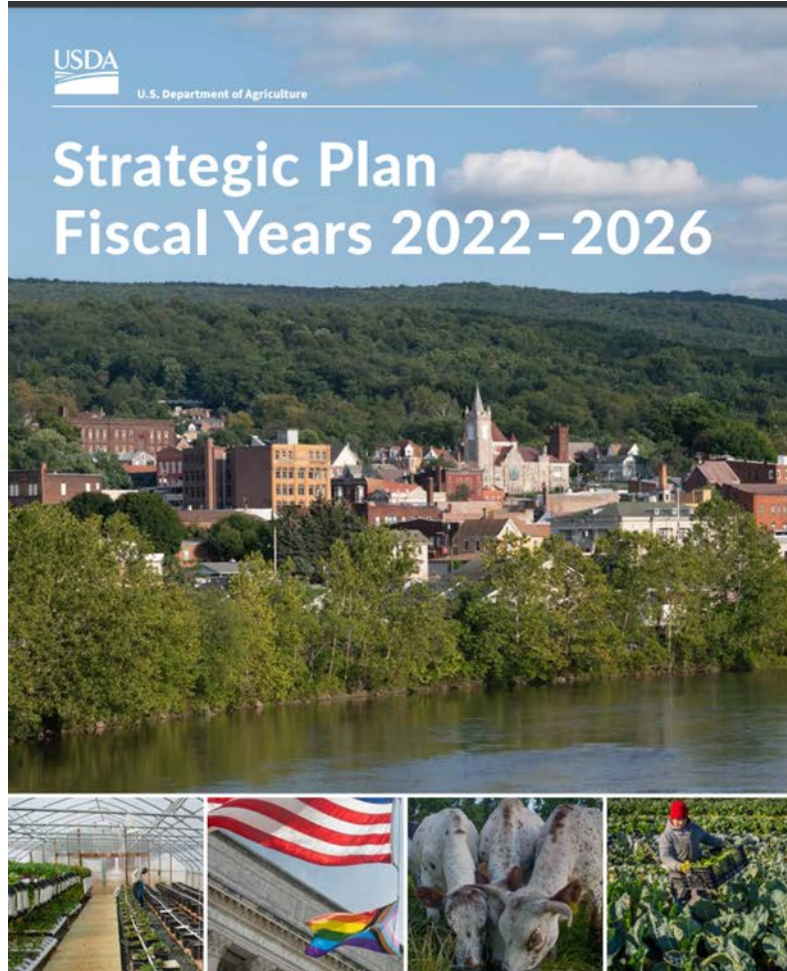
A1102 Foundational Knowledge of Agricultural Production	A1401 Soil Health
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Priority 2: Driving Climate-Smart Solutions

Continuous scientific advances are foundational to ensure that agriculture and forest sectors are resilient to extreme weather and climate-related disasters. USDA Science can improve the mitigation and adaptation potential of agriculture and forestry systems, as well as support agriculture and forestry communities through development and deployment of tools and technologies through systems-focused, interdisciplinary, actionable science that spans many disciplines including biological, geospatial, physical, economics, and social sciences. In this way, USDA will advance research that is co-developed with the public, including underserved communities, to address risks from long-term and acute climate stressors, recognize potential to generate new climate-related revenue streams, and improve climate resilience supporting every American's health, nutrition, and food security while bolstering sustainable markets for bioproducts.

Key Strategies:

Improve quantitative analysis and modeling of agricultural emissions and sequestration in biomass and soils of forest, agricultural, and other ecosystems. Improve methods and models for estimation, measurement, and monitoring of GHG emissions and carbon storage in space and time and decrease uncertainty in climate mitigation practices to better inform conservation efforts.

Continue development and application of biophysical and socioeconomic climate change indicators for agriculture and forestry to track the extent of climate change effects, underpin development of decision-support resources and monitor long-term effectiveness of climate adaptation responses.

Enable long-term monitoring programs for GHG fluxes and carbon sequestration that generate low-cost methods for standardized data sampling, capture, management and visualization tools and technologies.

Identify and quantify the effects of climate stressors – both acute (e.g., extreme weather) and chronic (e.g., long-term climate changes) on human, natural and managed systems relevant to the agriculture and forestry sectors including production, pricing, producer and consumer behaviors and trade of goods and services.

Climate Change Impacts



Objective 2.1

Bolster quantification and measurement systems to assess the extent of climate change impacts, contributions of the agriculture and forestry sectors as both sinks and sources of carbon and greenhouse gases (GHG) to climate change, and effectiveness of adaptation and mitigation responses.



STRATEGIC OBJECTIVES AND IMPLEMENTATION STRATEGIES

STRATEGIC OBJECTIVE 1: BOLSTER SCIENTIFIC RESEARCH TO ENHANCE THE NATION'S RESILIENCE AND RESPONSE TO CLIMATE CHANGE BY EMBRACING INNOVATIVE AND NOVEL APPROACHES.

This objective aligns with USDA Strategic Goal 1, Combat Climate Change to Support America's Working Lands, Natural Resources, and Communities.

NIFA is committed to combating climate change by investing in research, education, and extension activities that support enhanced soil and forest health, climate-smart agriculture, and disaster risk mitigation and response. This agency-wide objective enables strategic monitoring and oversight into the investments NIFA makes to combat climate change. Measures of progress towards Strategic Objective 1 could include the continued support for Soil Health grants, Signals in Soil grants, SBIR investments in climate-smart agriculture, and/or investments focused on disaster mitigation efforts.

IMPLEMENTATION STRATEGY TYPE	NIFA IMPLEMENTATION STRATEGIES TO ACHIEVE OBJECTIVE
	Support implementation of advanced technologies and programs that promote climate resilience and seek to enhance soil and forest health.
	Support foundational and applied research to improve the nation's ability to mitigate, prepare for, prevent, rapidly respond to, and recover from natural disasters.
	Continue to build partnerships with USDA Climate Hubs to facilitate outreach and education that encourages adoption of climate-smart adaptation strategies.
	Support USDA Small Business Innovative Research (SBIR) projects that focus on climate-smart agriculture.



USDA's Approach to addressing climate change

• **USDA Climate Priorities**

- Climate-Smart Agriculture
 - Leverage Existing Programs
 - New Partnerships Program
- Climate-Smart Forestry
- Quantification and Metrics
- Adaptation and Resilience
- Build a Climate-Informed Workforce
- Research and Development
- Clean Energy and Energy Efficiency for Rural America
- Equity and Environmental Justice
- International Cooperation

• **USDA Climate Principles:**

- Comprehensive
- Voluntary and Incentive-Based
- Equitable
- Accessible
- Cost-Effective
- Leverage Public-Private
- Partnership
- Support Rural Jobs and Economies

NIFA's Agency Wide Priority Team Approach

- Address knowledge gaps & opportunities
- Spur innovation & accelerating change
- Empower individuals and communities
- Support synergies across diverse priorities

Climate Change



Nutrition Security



Workforce Development



Market Opportunities

Diversity, Equity, Inclusion & Accessibility (DEIA)

Climate Priority Area

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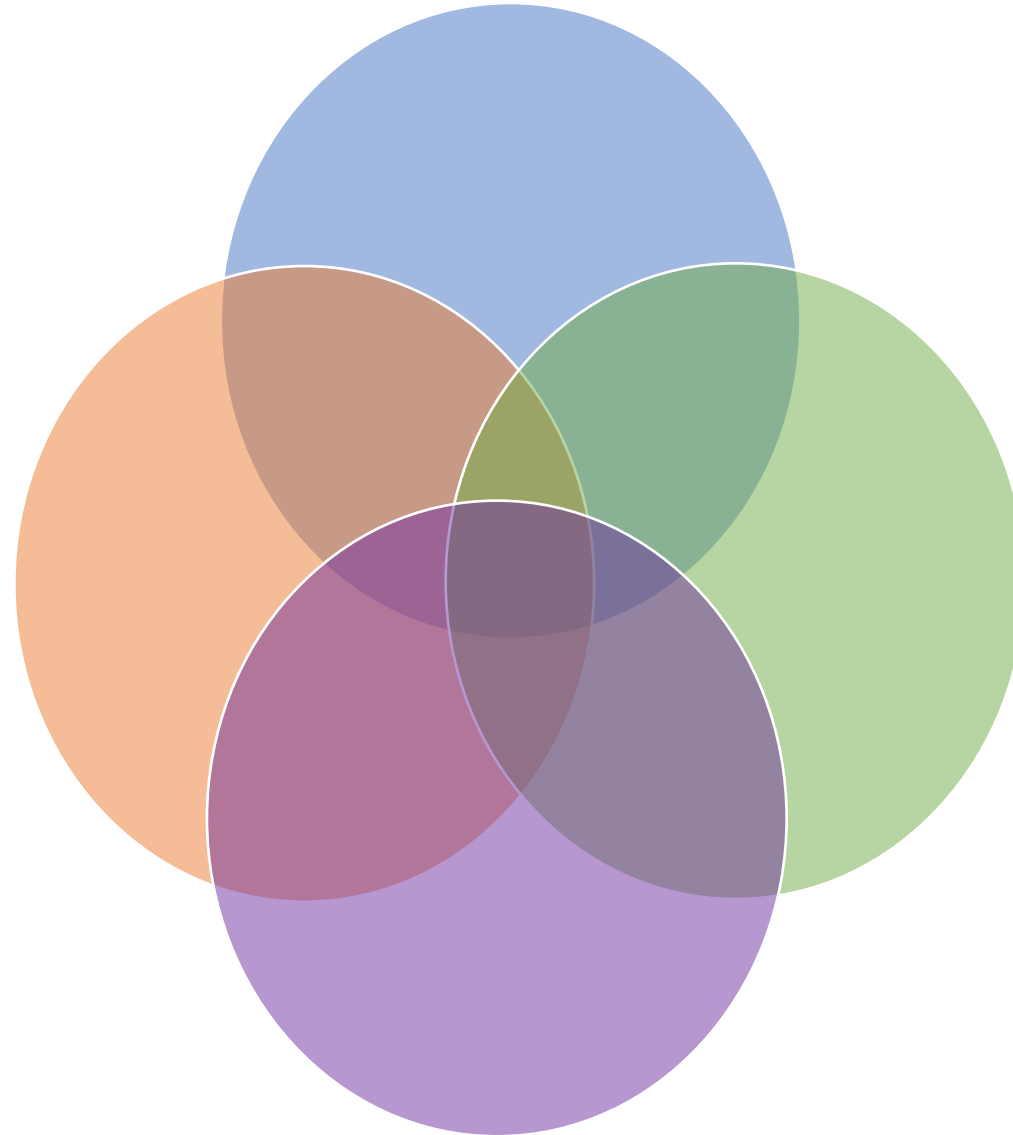
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Climate Change

Nutrition Security

Economic Recovery

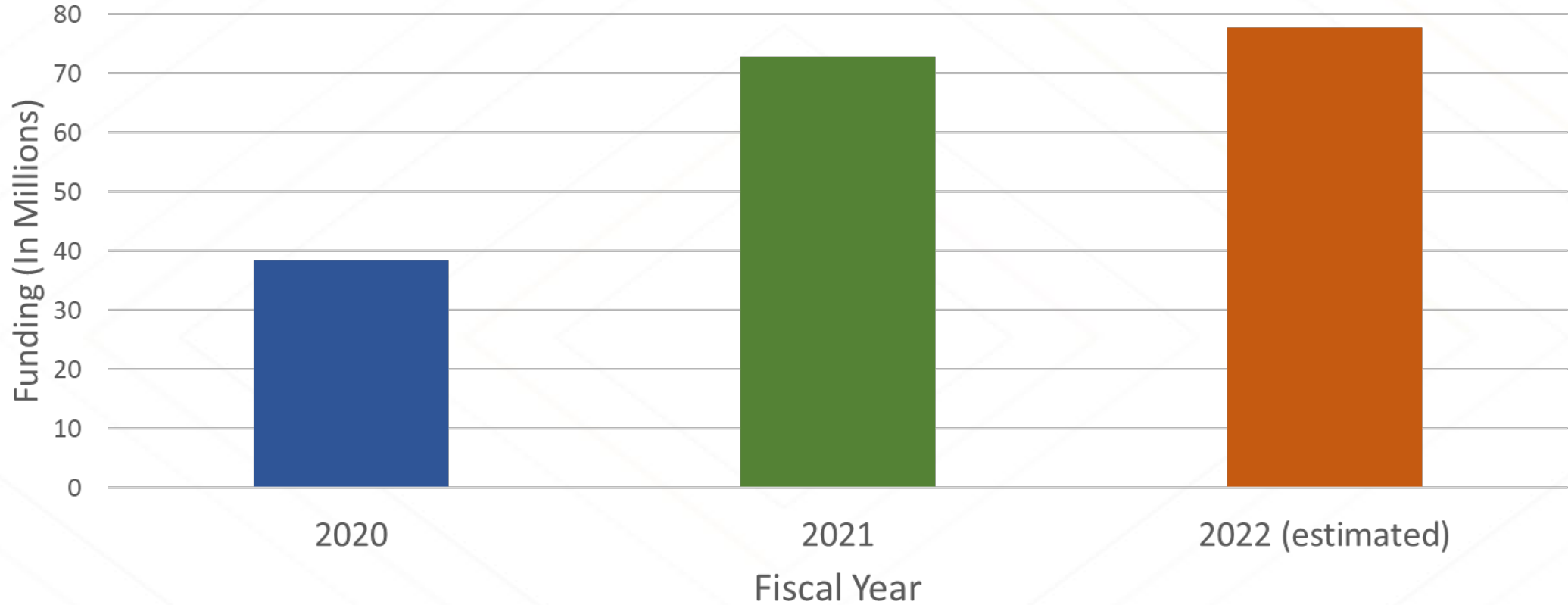
Diversity, Equity, Inclusion, & Accessibility





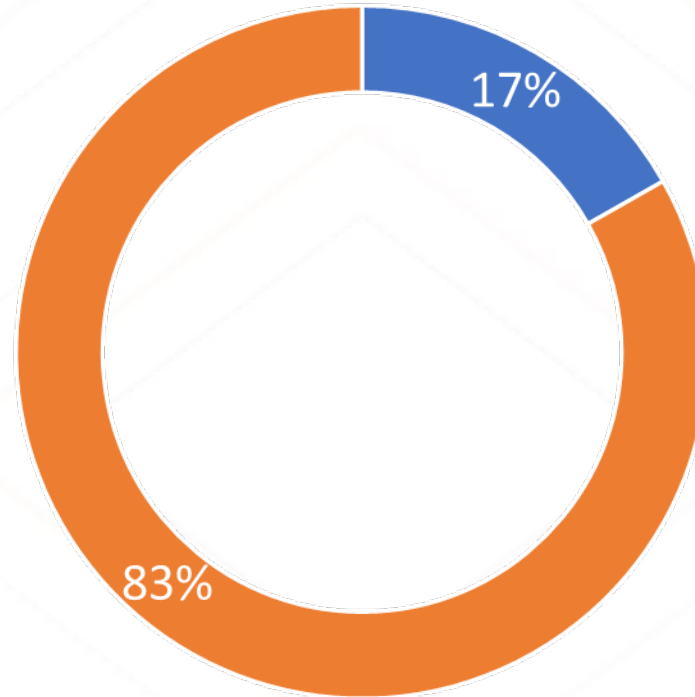
Funding for Climate at USDA NIFA

Climate Budget at NIFA



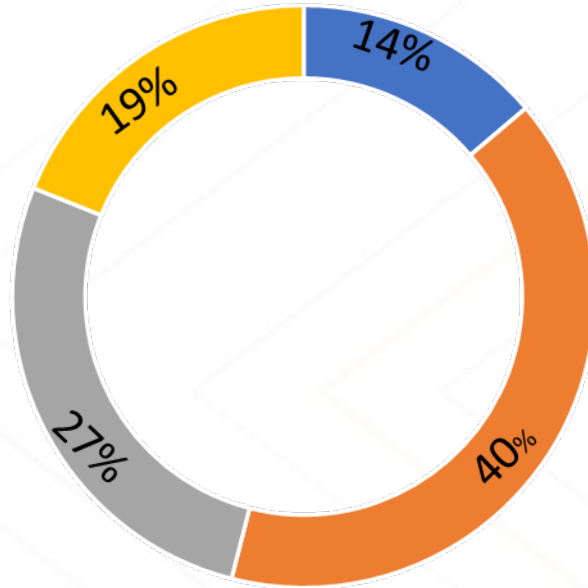
*Does not include Extension Funding

FY2022 Estimated Climate Funding



■ Capacity Funding ■ Competitive Funding

Capacity Funding for FY 2022 (estimated)



- Evans-Allen Research Program
- Hatch Act of 1887 (Formula Research)
- McIntire-Stennis Coop. Forestry Res.
- Hatch Act of 1887 (Multistate Research)

Competitive Programs that Fund Climate-Related Research and Extension:

- Climate-Smart Agriculture & Forestry
- GHG Mitigation
- Bioeconomy
- Environmental Justice



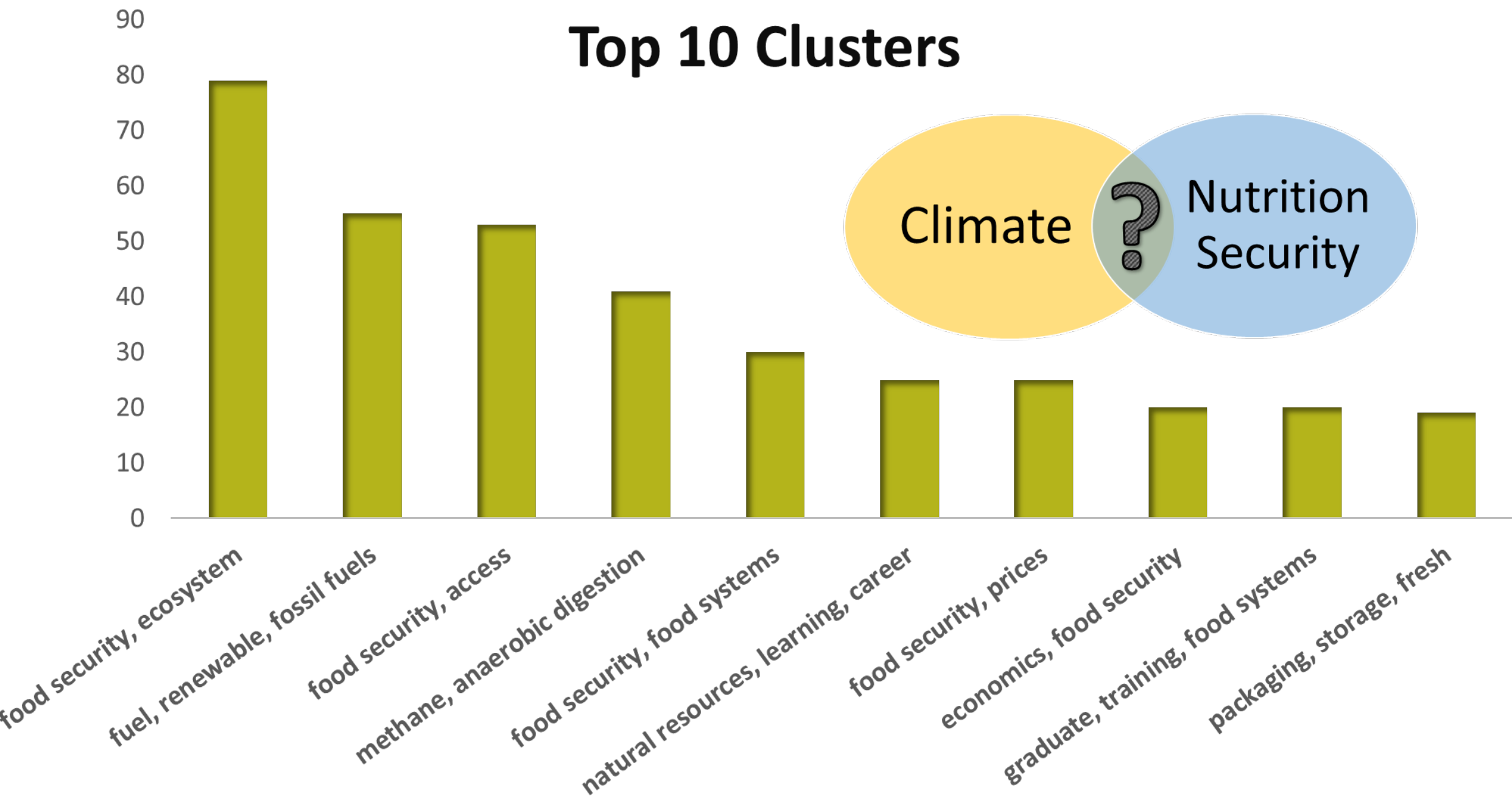
AFRI Foundational Programs that Fund Climate-Related Projects

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Selected Competitive Non-AFRI Programs that Fund Climate-Related Projects

1890 Capacity Building Grants Program	Hispanic-Serving Institutions Education Grants Program
Bioproduct Pilot Program	Grants for Insular Areas
Agriculture in the K-12 Classroom	National Needs Graduate and Postgraduate Fellowship Grants Program
Alaska Native-Serving and Native Hawaiian-Serving Institutions Education Competitive Grants Program	New Technologies for Ag Extension
Artificial Intelligence (AI) Research Institutes	Organic Agriculture Research and Extension Initiative
Beginning Farmer and Rancher Development Program	Organic Transitions
Capacity Building Grants for Non-Land-Grant Colleges of Agriculture Program	Renewable Resources Extension Act - National Focus Fund Projects
Community Food Project	Regional Rural Development Centers
Crop Protection and Pest Management	Small Business Innovation Research and Small Business Technology Transfer
Alfalfa and Forage Program	Smith-Lever Special Needs Competitive Grants Program
Federally Recognized Tribes Extension Program (FRTEP)	Specialty Crop Research Initiative
Food and Agriculture Defense Initiative Extension Disaster Education Network	Sustainable Agriculture Research and Education (SARE) Regional Host Institution
Food Safety Outreach Program	Sun Grant
From Learning to Leading: Cultivating the Next Generation of Diverse Food and Agriculture Professionals (NextGen)	Tribal Colleges Extension Program
Higher Education Multicultural Scholars Program	Tribal Colleges Research Grants Program

Top 10 Clusters



7

SOCIOECONOMIC AND POLICY RESEARCH

Develop and evaluate models that assess impacts of markets, consumption patterns, socioeconomic conditions, and food systems on human well-being under a changing climate.

6

STRATEGIC, SUSTAINABLE AND REGENERATIVE AGRICULTURAL PRACTICES

Develop and promote practices that improve biodiversity and ecosystem health while strengthening resiliency to climate change.

5

ENERGY SMART AGRICULTURE & TECHNOLOGY INTEGRATION

Integrate new energy technologies into diverse production systems to help achieve carbon neutrality.

4

CLIMATE-INFORMED WATER RESOURCE MANAGEMENT

Address earth system interactions and the growing challenges created with increasing agricultural water demand.



1

SYSTEMS-BASED INNOVATIONS

Cultivate and advance systems-based innovations and approaches that bridge biophysical and socioeconomic disciplines to build system resiliency to climate change.

2

PARTICIPATORY RESEARCH PROCESSES

Co-create a research continuum that bridges fundamental research to producer knowledge, practice, and experience and incorporates principles of environmental and social justice.

3

MITIGATION AND ADAPTATION THROUGH ECOSYSTEM MANAGEMENT

Adapt to and/or mitigate the impacts of climate change across diverse environments and land use systems via science-based management opportunities.

— Research Principles

●●●●● Research Themes

<https://doi.org/10.25675/10217/237190>



Justice40 INITIATIVE

Whole-of-government approach to advancing environmental justice created by:

EO 14008

Tackling the Climate Crisis at Home and Abroad

EO 13985

Advancing Racial Equity and Support for Underserved Communities through the Fed. Government

GOAL: 40% of the overall benefits of federal investments from covered programs should flow to disadvantaged communities.



EQUITY AND ENVIRONMENTAL JUSTICE IN USDA STRATEGIC PLAN

- 60+ programs across USDA identified for Justice40
- Cross-cutting priority: advancing racial justice, equity and opportunity
- Environmental justice reflected broadly across three goals

GOAL 1

Combat climate change to support working lands, natural resources and communities

GOAL 3

Foster an equitable and competitive marketplace for all producers

GOAL 5

Expand economic opportunities and improve quality of life in rural and Tribal communities



COVERED PRIORITY AREAS AND NIFA PROGRAMS

COVERED PRIORITY AREAS

- climate change
- clean energy and energy efficiency
- clean transportation
- affordable and sustainable housing
- training and workforce development (related to topics of other covered programs)
- remediation and reduction of legacy pollution
- critical clean water and waste infrastructure

COVERED NIFA PROGRAMS

- Bioproduct Pilot Program authorized through the Infrastructure Investment and Jobs Act
- Fourteen programs on workforce development, climate change research, and Extension delivered through minority serving institutions



EO 14096 - Revitalizing Our Nation's Commitment to Environmental Justice for All

“**Environmental justice**” means the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people:

(i) are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and

(ii) have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.



NIFA Environmental Justice Task Force

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Alexis Nazario Negron
Marissa Rose-Weiss
Ann Stapleton
Michelle Samuel-Foo
Valerie Schattilly

NIFA Investments in Environmental Justice

23 active projects
Funded through:

1890 Capacity Building Grants Program
AFRI Hatch
Resident Instruction Grants Program for Insular Areas

Smith-Lever 3B, 3C, and 3D Programs

Food and Agriculture Service Learning Program

Tribal Colleges Research Grants Program

Evans-Allen

Hispanic Serving Institutions Education Grants Program



Environmental Justice and NIFA

- Identifying and enhancing collaboration and engagement with underserved communities and groups inside and outside government.
- Research and Extension to illuminate identifying, analyzing, and addressing historical inequities, systemic barriers, or actions related to any federal regulation, policy, or practice.
- Consider ways to ensure that recipients of federal funds advance EJ such as creating performance metrics, dedicating resources, and professional development.

Environmental Justice and NIFA

- Identify and address gaps in science, data, research, and Extension and provide recommendations on the development and use of science, data, and research to support EJ policy.
 - Participatory science
 - Data collection related to EJ
 - Improving public accessibility of research and information
 - Disaggregating environmental risk, exposure, and health by race, national origin, income, etc..
 - Analyzing cumulative impacts
 - Collaborating with Tribal nations to collect and analyze data related to subsistence and cultural practices

Environmental Justice (A1461)

RFA Page # 64

- **Program Area Priorities:**

- Advance understanding of environmental and climate justice impact metrics that may be translated across geographic regions as well as food and agricultural systems
- Increase understanding of community-level climate resilience thresholds
- Required to meaningfully incorporate participation of communities with environmental justice concerns at all stages of project development and execution
- One project will be funded under this program area priority that focuses on advancing youth voice in environmental justice in relation to nutrition security and human health

Environmental Justice (A1461)

RFA Page # 64

- **RFA is available online at:**
https://www.nifa.usda.gov/sites/default/files/2023-12/FY24-AFRI-FAS-RFA-P_0.pdf
- **Application Deadline:** 5 p.m. September 12, 2024
 - Submitted through Grants.gov
 - Conference grant Letters of Intent accepted ongoing minimum 195 days before the conference begins
- **Grant Type:** Integrated (Research and Extension) Only
- **Maximum Award Amount:** \$1,000,000 (Standard Grants), \$50,000 (Conference/Equipment)
- **Grant Duration:** 36-48 Months (Standard)



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Exploring Linkages Between Soil Health and Human Health

<https://www.nationalacademies.org/our-work/exploring-linkages-between-soil-health-and-human-health>



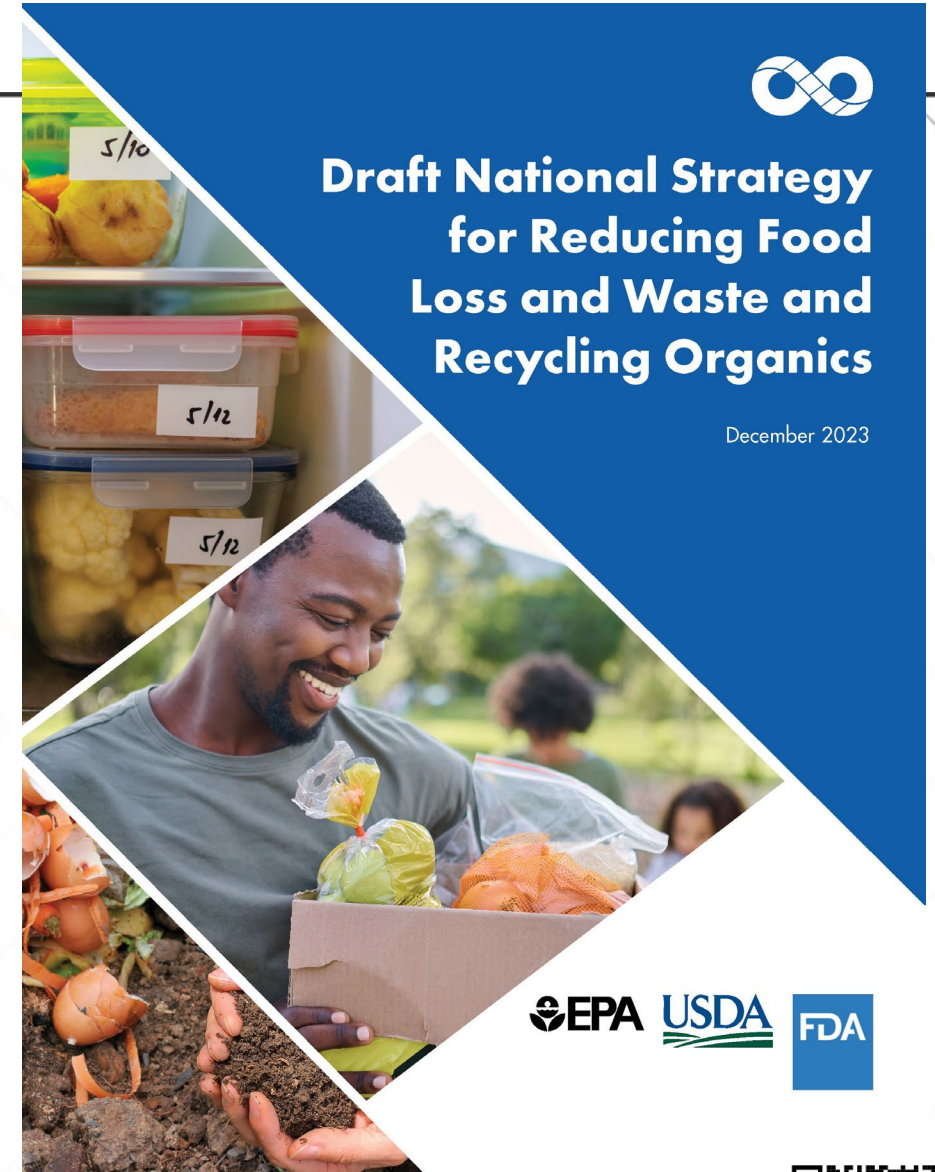
Federal
Interagency
Collaboration to
Reduce Food Loss
and Waste (FLW)





The four main objectives in the draft National Strategy are:

1. Prevent the loss of food where possible.
2. Prevent the waste of food where possible.
3. Increase the recycling rate for all organic waste.
4. Support policies that incentivize and encourage food loss and waste prevention and organics recycling.





CENTER FOR RESEARCH, BEHAVIORAL ECONOMICS, AND EXTENSION ON FOOD LOSS & WASTE

COMING SOON!

- The Center must examine or support research and Extension efforts that address two or more Food, Loss, and Waste (FLW) issues.
- Develop a National Extension FLW Strategy, that is in alignment with other national FLW strategies, and Extension Frameworks.
- Engage with Minority Serving Institutions and/or historically underserved communities.





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National Program Leader,
Institute of Youth, Family, and Community



Victoria Finkenstadt, PhD

National Program Leader,
Institute of Bioenergy, Climate, and Environment

NIFA's Approach to Prioritizing Interrelated Agricultural Challenges

**Nutrition
Security**

*Intentional
Cross-cutting
Intersectional*

**Climate
Change**

Nutrition Security X Climate Change Priority Area Accomplishments



**A9201 Sustainable
Agricultural Systems:**
39 funded projects

384.5M

A1721 USDA Climate Hubs:
14 funded projects

19.6M

A1712/Rapid Response:
21 projects funded

5.8M



- Existing priority areas edited **to promote** nutrition security and climate change **intersectional work**
- Two **new priority areas were created** to advance partnerships with the USDA Climate Hubs and support rapid response to extreme weather
- **~\$410M** awarded supporting **74 projects**

Sustainable Agricultural Systems (A9201)

This priority area seeks applications that:



Use **transdisciplinary approaches** to promote blending of science, technology and societal considerations



Use **systems approaches** that significantly improve the local and regional supply of climate-smart food and other agricultural products while fostering economic revitalization



Fully **integrate** research, extension, and education activities

Applications must address one or more of the following broad topic areas:



Food and Nutrition Security



Strengthening the Bioeconomy



Climate-Smart Agriculture and Forestry

Project Highlight: Sustainable Agricultural Systems

**Building resilience to shocks and disruptions:
Creating sustainable and equitable local and
regional food systems in the US Midwest region and
beyond**

Project designed to build local and regional food systems that are resilient to "shocks" such as, climate change, food borne pathogens, and pandemics.

Expected Outcomes:

- Fundamental knowledge on how to build more resilient local and regional food systems
- Stakeholders empowered to mitigate and adapt to "shocks"
- New and diverse workforce that supports agri-food resilience

[Link to Project Description](#)

Brent Ross
Michigan State University

April 1, 2023
\$10,000,000



Climate Hub Partnership Program (A1721)

This priority area seeks applications that:



Provide *effective, translatable* and *scalable* approaches to address climate change



Regional partnerships including the USDA Climate Hubs and Extension (e.g., the Cooperative Extension Service)



Address the effects of climate on nutrition security and components of nutrient density, food safety and food waste



Project Highlight: Extension, Education, and USDA Climate Hubs Partnership

Building Capacity Among Community Health Centers To Address Climate Change Impact On Agriculture Workers In Us Caribbean Territories

3-year intervention by Migrant Clinicians to bolster Community Health Centers in Puerto Rico and the US Virgin Islands, build capacity and adaptability to climate change and improve health outcomes.

Expected Outcomes

- Increased climate change literacy levels among clinicians
- Expanded use of evidence-based educational resources and tools in communities
- Adoption of a culturally responsive curriculum for clinicians

https://portal.nifa.usda.gov/enterprise-search/project_details/advanced_search

Marysel Pagan Santana
Migrant Clinicians
Network

April 1, 2023

\$1,489,000



A1712/Rapid Response to Extreme Weather

This priority area seeks applications that:



Focus on critical and urgent solutions in rapid response to disaster impacts on the nation's food and agricultural systems.



Clearly describe short-term deliverables *within 3 months of award receipt*.



Clearly define the geographic scope of the project as related to the weather-related event or disaster.

Applications must address one or more of the following:



Agroecosystem Resilience



Food Safety, Nutrition Security, and Agricultural Commodity Security



Health, Well-Being, & Safety

Project Highlight: A1712

GRaCE – Gardens for Resilience and Climate Education

This project is in response to the Maui wildfires. The objective of GRaCE is to train and equip school garden educators in the Hawaiian archipelago to use gardens and gardening as a tool to deal with traumatic events.

Expected Outcomes:

- Expanded resources for using gardening and other plant activities to cope with trauma
- Greater capacity for seed saving and sharing, as well as food saving and preservation
- Increased use of fire-resilient landscaping

[Link to project description](#)

Dennis Chase
*Hawaii Public Health
Institute*

December 15, 2023
\$290,384





Victoria Finkenstadt, PhD

National Program Leader,
*Institute of Bioenergy, Climate, and
Environment*

- **Program updates**
- **Future directions**



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National Institute of Food and Agriculture

U.S. DEPARTMENT OF AGRICULTURE

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Upcoming Events

- NIFA Events Calendar for upcoming deadlines, meetings and webinars: nifa.usda.gov/events
- Upcoming Request for Applications (RFA) release calendar: nifa.usda.gov/upcoming-rfa-calendar
- Current NIFA Funding Opportunities - AFRI RFA: https://www.nifa.usda.gov/sites/default/files/2023-02/FY23-AFRI-FAS-RFA-508_0.pdf

Grant Resources

- Funding Opportunities: nifa.usda.gov/grants/funding-opportunities
- Competitive Grants Flowchart: nifa.usda.gov/competitive-grants
- NIFA Grant Resources: nifa.usda.gov/grant-training
- NIFA Policy Guide: nifa.usda.gov/policy-guide
- Indirect Costs: nifa.usda.gov/indirect-costs
- A Guide for Preparation and Submission of NIFA Applications via Grants.gov:
apply07.grants.gov/apply/opportunities/instructions/PKG00249520-instructions.pdf
- Information on Awarded Grants: cris.nifa.usda.gov

Future Editions

- **Celebrating Black History Month with an overview of the new Nutrition Hub at Southern University**
- **Celebrating National Nutrition Month with an overview of NIFA's partnership with CNPP to help reach the Secretary's goal of making MyPlate a household name**