INNOVATIVE HOUSEHOLD FOOD WASTE MEASUREMENT

Request for Applications (RFA)

Matching Funds are Optional for This Funding Opportunity

Key Dates

Application Receipt Open: May 11, 2022, by 12:00 pm ET

Applications Due: July 13, 2022, by 5:00 pm ET

Award Notification: Fall 2022

Anticipated Project Start Date: Early 2023

The Foundation for Food & Agriculture Research (FFAR), in collaboration with the The Kroger Co. Zero Hunger | Zero Waste Foundation is requesting applications for innovative and transformative research to develop a methodology for regularly occurring quantitative measurement of food waste in United States' households, that can be used by stakeholders across the food system. FFAR seeks to award meritorious applications, prioritizing those projects that emphasize a commitment to the collaboration of researchers and practitioners across multiple sectors and disciplines.

BACKGROUND

In 2019, an estimated 35% of food produced in the United States was thrown away, valued at $408 billion. About 37% of waste occurs at homes (ReFED, 2021). Food waste represents not only the loss of nutrients but a waste of valuable resources, which puts significant strains on the environment, economy, and society. At the same time, many communities in the U.S. are experiencing rising rates of food insecurity, particularly as the effects of the COVID-19 pandemic are felt throughout the food system.

There are various challenges to addressing food waste at the consumer level, including consumer behavior, supply chain disruptions, and food business closures due to the COVID-19 pandemic. The National Academies of Sciences, Engineering, and Medicine (NAS) undertook a study to better understand the drivers of consumer food waste in the U.S., assess intervention practices and identify a strategy to reduce consumer-level food waste. The 2020 NAS report "A National Strategy to Reduce Food Waste at the Consumer Level" highlighted that reducing waste requires changing the U.S. food environment to discourage waste by consumers, strengthening consumers' motivation, opportunity, and ability to reduce food waste, and leveraging and applying research findings and technology to support consumers in food waste reduction. Additional research is necessary to accelerate food waste reduction at the consumer level and support interventions.

Currently, the amount of food waste generated in US households is assessed in multiple ways, such as surveys, collection of containers dedicated to wasted food, or consumers submitting photos of their food waste using specially designed apps. None of these approaches is optimal in accurately measuring household food waste. All available information is fragmented and based on different understandings of

"food waste." The amount of wasted food in US households is most likely underestimated. This leads to a wide variety of interpretations of the scale of the issue and of the effectiveness and long-term impact of policies and intervention practices. There is a strongly articulated need among all stakeholders across the food system as well as local, state, and federal governments for accurate and standardized household food waste measurement methodology and metrics.

The UN Sustainable Development Goal 12 seeks to "ensure sustainable consumption and production patterns." The third target under this goal (Target 12.3) calls on all nations to "halve per capita global food waste at the retail and **consumer levels** and reduce food losses along production and supply chains, including post-harvest losses" by 2030. However, there is no standardized methodology for determining the quantity and value of food waste generated at homes. To track progress towards this target, accurate data is needed.

INNOVATIVE HOUSEHOLD FOOD WASTE MEASUREMENT CHALLENGE

This RFA aims to accelerate the development of an innovative methodology (technological and/or non-technological for regularly occurring quantitative measurement of food waste generated in US households that can be used by stakeholders across the food system. A key component of developing such a measurement methodology is access to and collection of quality data, which, in turn, requires effective data management. Establishing such a methodology would require the collaboration of researchers and practitioners across multiple sectors and disciplines.

DEFINITIONS

Food: Any substance – whether processed, semi-processed, or raw – that is intended for human consumption. "Food" includes drink and any substance that has been used in the manufacture, preparation, or treatment of food. "Food" also includes material that has spoiled and is therefore no longer fit for human consumption. It does not include cosmetics, tobacco, or substances used only as drugs. It does not include processing agents used along the food supply chain, for example, water to clean or cook raw materials in factories or at home. (FLW Protocol)

Inedible Parts: Components associated with a food that, in a particular food supply chain, are not intended to be consumed by humans. Examples of inedible parts associated with food could include bones, rinds, and pits/stones. "Inedible parts" do not include packaging. What is considered inedible varies among users (e.g., chicken feet are consumed in some food supply chains but not others), changes over time, and is influenced by a range of variables including culture, socio-economic factors, availability, price, technological advances, international trade, and geography. (FLW Protocol)

Household food waste: Food and inedible parts that reach the household but are not consumed/eaten.

PROGRAM REQUIREMENTS

A project funded through this RFA must consider the following:

- A landscape analysis of the currently available household food waste data and data sets, and food waste measurement method, and how it informed the development of the measurement methodology.
- Setting criteria of a successful and reliable quantitative household food waste measurement methodology

- Framing and scoping research to develop a reliable recurring quantitative measurement methodology
- Possible barriers to wide adoption of the proposed methodology and approaches for overcoming them
- Designing and conducting a pilot study to validate the method and its potential for scaling up,
- Identifying stakeholders needed to be involved in implementing the research and analyzing the results
- Data management plan
- Applicability of the proposed methodology to identify hot spots and a potential to inform the development of interventions

Data obtained through this methodology will be used to further local and national efforts to reduce overall food waste by allowing to (1) set realistic targets, (2) develop initiatives, strategies, interventions, and policies to minimize waste, and (3) assess their progress.

ELIGIBILITY

FFAR welcomes applications from U.S. institutions of Higher Education, non-profit and for-profit organizations, government-affiliated researchers, and domestic and international organizations. Any individual(s) with the skills, knowledge, and resources necessary to carry out the proposed research as Program Director(s)/Principal Investigator(s) is invited to work with their organization to develop an application for support.

In keeping with FFAR goals to reach a diverse and broad range of institutions and individuals who participate in its programs, the following types of higher education institutions are encouraged to apply for FFAR programs:

- Hispanic-serving Institutions
- 1890s Land Grant Institutions and other Historically Black Colleges and Universities
- Tribal Colleges and Universities
- Alaska Native and Native Hawaiian Serving Institutions
- Asian American and Native American Pacific Islander Serving Institutions

AWARD INFORMATION

- Anticipated Project Duration: up to 18 months
- Total Program Budget: US $2M
- Total Award Amount: up to US $1M per proposal
- Estimated Number of Awards: Dependent on the budgets of proposals recommended for funding.

APPLICATION COMPONENTS

Full Proposal

<u>Required Elements</u>

- Project Title
- Project Start and End Dates
- Project Duration (in months)
- Total Project Budget

- Requested Budget
- Budget Justification (up to 1,000 words)
- Geographic Location (e.g., city, state, congressional district) where the research will be conducted
- Key Personnel (name(s), affiliation, expertise, role on the project)
- Abstract (up to 250 words)
- Anticipated applicability/impacts of research results (up to 500 words)
    - Project Description (up to 4,000 words) Methodology for conducting landscape analysis of the currently available household food waste data and data sets (including data across different demographics), and food waste measurement methods.
    - Sources of information to be used in landscape analysis.
    - Description of the use of the FLW Protocol in developing food waste measurement methodology, including accounting and reporting structure.
    - Approach to setting criteria of a reliable and replicable quantitative measurement methodology for measuring household food waste use.
    - Approach to developing a new household food waste measurement methodology.
    - Type of data to be collected (e.g., amount of food wasted, reasons for waste, types of food, money [or % of purchases] spent on wasted food, waste destinations, edible and inedible parts, income and demographic/geographic information, units of measurements). *Methodology will be assessed and prioritized based on the types of data it will be able to collect.*
    - Approach to disaggregation between edible and inedible parts (e.g., direct measurement, estimates), including explaining what food parts are considered inedible.
    - Description of how methodology or results could be used to help quantify benefits of some interventions (e.g., shelf-life extension, improved packaging, better storage).
    - Plan for the pilot study to validate the food waste measurement method and its potential for scaling up.
- Goals and Objectives by Year (up to 1,000 words)
- Data management plan (including protection of private data and ability to integrate collected data into national data). (up to 500 words)
- Project economic feasibility (up to 250 words)
- Possible barriers to wide adoption of the proposed methodology and approaches for overcoming them (e.g., affordability, accessibility) (up to 250 words)
- Institutional Support (up to 250 words)
- Collaborating Organizations and their role on the project (up to 250 words)
- Organizational Assurances

Attachments

Required Attachments

- Budget Spreadsheet
- Current and Pending Support
- Project Timeline
- References Cited
- Biosketches

Optional Attachments

- Matching Funds Contribution Letters (if applicable)

- Additional Key Personnel
- Graphics, Figures, Equations and Tables
- Letters of Support

HOW TO APPLY

Proposals must be submitted by the deadline date through FFAR's online application Grant Management System. Applications submitted outside of this System will not be considered.

To start a **new** application, please click here. If you are a new user, register for an account by clicking "Create Account" button located under the email address field on the left side of the home page. Once you log in, you may begin working on your application. Please be sure to save your work often by clicking on "Save and Finish Later." To access a saved application, please do so through your Grant Management Account.

To be fair to all applicants, FFAR will not grant extensions to applicants who missed the deadlines posted in the Key Dates section.

ADDITIONAL INFORMATION

Review Process

Proposals undergo a three-stage peer-review process. First, each submission is assigned to an external expert review panel. In the second stage, an Advisory Council will provide funding recommendations based on the external peer reviews. Finally, FFAR's Executive Director will review positive funding recommendations and make funding decisions.

All external reviewers must agree and adhere to the terms outlined in FFAR's Conflict of Interest Policy and Non-Disclosure Agreement. FFAR makes reasonable efforts to ensure that applications are not assigned to reviewers with a real or apparent conflict with the applicant, institution, or project personnel. Reviewers with a conflict of interest are recused from evaluating or participating in the related discussions. Each stage of the review is conducted confidentially, and as such, FFAR is responsible for protecting the confidentiality of the contents of the applications.

Review Criteria

Applications are evaluated by an external expert review panel based the following review criteria. Reviewers will evaluate and score each criterion. Evaluation of the scientific merit of each application is within the sole discretion of the reviewers, and they may raise additional factors to consider that are not covered in the bullets for each criterion.

STRATEGIC IMPACT (25%)

A. Applicability, Impacts and Originality

1. Does the proposal adequately discuss the applicability and impacts of the proposed method to measure household food waste?
2. Has the applicant demonstrated that this research is original, innovative and/or additive to existing research/methodologies?

FEASIBILITY (30%)

B. Feasibility to Achieve Project Goals (25%)

1. Are the overall project approach, strategy and design clearly described?
2. Are the proposed objectives and activities feasible within the duration of the award? Is the proposed timeline realistic?
3. Does the proposal address possible barriers (e.g., affordability, accessibility) to wide adoption of the proposed methodology and approaches for overcoming them?

C. Budget

1. Is the budget appropriate for the scope and services of the proposed work?
2. Is the proportion of the funds allocated for direct services reasonable?
3. Does the applicant provide a satisfactory budget justification?

OUTCOMES AND OUTREACH? (30%)

D. Scientific or Technical Merit

1. Does the proposal use the best and most efficient scientific methods? Are they suitable to achieve the project's goals?
2. Are the proposed methodology and sources of information for conducting landscape analysis scientifically sound and adequate?
3. Is the use of the FLW Protocol in developing food waste measurement methodology, including accounting and reporting structure, clearly described?
4. Is the approach for setting criteria adequate to assess the reliability of the proposed quantitative measurement methodology scientifically sound and feasible?
5. Will proposed methodology allow collection of comprehensive and diverse types of data? Will it include a representative sample that incorporates income, geographical, and racial diversity?
6. Is the approach to disaggregation between edible and inedible parts (e.g., direct measurement, estimates) clearly described? Does the applicant explain all the boundaries of the FLW Protocol, including explaining what food parts are considered edible/inedible?
7. Does the applicant clearly describe how methodology or results could be used to help quantify benefits of some interventions? Does the applicant identify target end-users and the ease of using the methodology?
8. Does the applicant give a detailed pilot study plan on how the new measurement methodology will be validated?
9. Does the applicant give a detailed data management plan, including protections for private data and the ability to integrate collected data into national data?
10. Will the household food waste measurement methodology be affordable and accessible to a variety of end-users regardless of the scale of application?
11. Will the household food waste measurement methodology result in data that can be used by a variety of stakeholders, including for policy creation, tracking of effectiveness of interventions and tracking of progress towards local, state, and/or national goals?

QUALIFICATIONS (15%)

E. Qualifications of Research Team

1. Does the Principal Investigator have a track record indicative of success in the project?
2. Have the appropriate personnel been recruited for the project?

F. Organizational Capacity/Research Environment

1. Will the research environment be appropriate for the project's intended goals?

2. Does the described role of each collaborating organization make it clear that each organization adds value to the project and is committed to working together to implement the project?
3. Does the proposal demonstrate that the project personnel would have adequate resources (for example, institutional support, equipment and/or other physical resources) to conduct the proposed research or associated activities?

AWARD ADMINISTRATION

Selection Notice: Following the application review process, the principal investigator and the authorized organization representative listed on the project will be officially notified by email of the status of the application. If an application is selected for funding, FFAR reserves the right to request additional or clarifying information for any reason deemed necessary. Potential grantees are free to accept or reject the Grant Agreement as offered.

Intent to Fund Notice: FFAR notifies applicants of their awards through email. The notice does not constitute an award or obligate funding from FFAR until there is a fully executed Grant Agreement. FFAR encourages applicants to review a sample Grant Agreement before applying to ensure they know the terms under which grants are offered.

Grant Terms and Conditions
FFAR expects applicants to have reviewed the Sample Grant Agreement before applying to ensure that the applicants are aware of the applicable terms under which the grant is offered. Successful applicants are strongly encouraged to sign the Grant Agreement as presented.

A grantee may request a no-cost extension of up to 12 months to complete the work's planned scope. The request must be communicated to FFAR and submitted through the Grant Management System at least thirty (30) days before the end date of the grant. The request must justify the need for the extension; include a summary of the unobligated, remaining funds; and provide a plan for fulfilling the project's terms. If a no-cost extension request is approved, FFAR will issue an amendment to the Grant Agreement. This extension will not be approved merely for using unexpended funds.

Requirement to Demonstrate Matching Funds
Matching funds are OPTIONAL for this program. If the applicant provides matching funds, the applicant agrees to identify and certify matching funds annually before disbursement of award funds. The match share is intended to supplement, not supplant existing funding for the principal investigator (PI). The applicant will abide by FFAR's Matching Funds Guidelines to meet FFAR's matching requirements. To constitute a valid match, all matching funds on a FFAR grant must be expended during the grant period.

Post-award Management
Reporting Requirements: After FFAR confers a grant, the grantee must provide annual scientific and financial progress reports. The report should include activities carried out under the grant, highlighting project accomplishments, and an account of all expenditures to date.

Final Report Requirements: Within 90 days of completing the project, the grantee shall provide a final project report. This report should address the project objectives outlined in the original grant application, describe any modifications to the project objectives and scope, describe the final project accomplishments, and include a final project accounting of all grant funds.

Scientific Integrity: FFAR strives to advance knowledge and the application of science to address challenges related to food supply and sustainable agriculture. FFAR's ability to pursue its mission depends on the integrity of the funded science projects and programs. All FFAR grants must be conducted with the highest standards of scientific integrity.

CONTACT INFORMATION

All Scientific and Grants questions must be emailed to grants@foundationfar.org

We only accept scientific or programmatic, and grants inquiries by email. We strive to respond to inquiries within two business days, but our response time depends on the volume of questions received and the complexity of the questions asked. Please note that we do not monitor this mailbox on evenings, weekends, or federal holidays.